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All mind maps are provided in both A3 and A4 formats plus higher- and lower-level activity versions.

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Acknowledgements

The following images are courtesy of Flaticon.com:

- Kiosk icon used on page 5
- Authorize icon used on page 5
- Wireframe icon used on page 6
- Actor icon (storyboard) used on page 6

The following image were AI-generated using Microsoft copilot:

- School media club webpage on page 12 generated using the prompt ‘Create a website homepage for a School Media Club’
- Quiz application image on page 13 generated using the prompt ‘Create an image showing a split screen with html-c’

Teacher's Introduction

This resource is intended for use by students studying the Cambridge National in Creative iMedia, **Unit R097: Interactive digital media**. This is an optional unit for the Level 1 / Level 2 Award (J834), assessed by three centre-assessed practical tasks that are OCR moderated.

Remember!

Always check the exam board website for new information, including changes to the specification and sample assessment material.

As a revision tool, this resource does not aim to cover the material in too much depth, but instead provide visual 'mind maps' summarising all key areas of Unit R097. Students can use these mind maps as the basis of their revision as they cover all the key terminology and knowledge needed to complete the written exam successfully. The resource is especially suited to visual learners and those who find it difficult to revise from dense written notes.

The unit has been broken down into **16 topics (across 19 pages)**. The breakdown of these topics is as follows:

- **Page 1:** 1.1 Types of interactive digital media
- **Page 2:** 1.1 Types of content
- **Page 3:** 1.1 Types of hardware
- **Page 4:** 1.2 Features and conventions of interactive digital media
- **Page 5:** 1.3 Hardware and software used to create interactive digital media
- **Pages 6–7:** 1.4 Pre-production documentation for interface planning
- **Page 8:** 1.4 Pre-production documentation and planning for content
- **Page 9:** 1.4 Pre-production documentation and planning for user interaction
- **Page 10:** 2.1 Techniques for sourcing suitable assets
- **Page 11:** 2.1 Static image, moving image and audio assets
- **Page 12:** 2.1 Interactive assets
- **Pages 13–14:** 2.2 Technical skills to create interactive digital media
- **Page 15:** 2.3 Techniques to save and export/publish interactive digital media
- **Pages 16–17:** 3.1 Techniques to test/check the technical properties of interactive digital media
- **Page 18:** 3.1 Techniques to review the fitness for purpose of completed interactive digital media
- **Page 19:** 3.2 Improvements and further development

The resource consists of:

- 19 completed mind maps, which provide solutions to the activity mind maps, labelled:  - 
- 19 activity mind maps (partially complete) for higher-level students to complete, labelled:  - 
- 19 activity mind maps (partially complete) for lower-level students to complete, labelled:  - 

All mind maps are provided in both A3 and A4 formats.

How to use this resource:

- The sheets can be handed out at the end of the course, or at the end of each topic, for revision purposes.
- The mind maps can be printed out poster size and displayed on the classroom walls as the topic is being taught so that students have a visual reminder of what they have been covering in their lessons.
- As the resource features partially completed mind maps, students can be encouraged to complete the exercises on the activity sheets as a way of recapping knowledge from the topic at the end of teaching.

Note: The activity sheets designed for lower-level students tend to keep more of the spec information intact – students are generally challenged to fill in missing words and provide short answers to straightforward questions. Questions that require a more detailed response provide example answers to help students get started.

The activity sheets designed for higher-level students provide less structure – students are generally challenged to provide definitions for key terms, list relevant points and answer questions without the aid of example answers.

November 2025

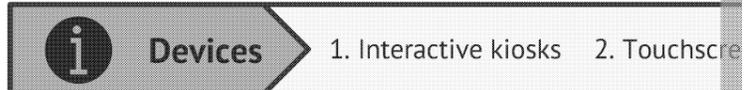
TYPES OF INTERACTIVE DIGITAL MEDIA

Interactive digital media engages users through active participation and personalisation, providing immediate feedback and global reach, driven by advancements in hardware and software. The acceleration of digital interaction is fuelled by improved Internet access and the COVID-19 pandemic. As technology continues to evolve, interactive digital media's scope and impact are set to expand further, making it a key component of modern education and business.

	WEBSITES	MOBILE APPS
OVERVIEW	Websites are collections of interlinked web pages accessible over the Internet. They are designed to provide information, services, entertainment, and interactive experiences to users.	Mobile apps are software applications designed specifically for mobile devices such as smartphones and tablets. They provide various tools, and entertainment options.
PURPOSE	<ol style="list-style-type: none"> 1. Provide information 2. Communication 3. E-commerce 	<ol style="list-style-type: none"> 1. Convenience 2. Entertainment 3. Media streaming 4. Communication
KEY FEATURES	<ul style="list-style-type: none"> • Navigation menus guide users through different sections • Multimedia content (images, text, videos, and audio) • Interactive elements (forms, buttons, quizzes) • Responsive design (adaptability to various devices) 	<ul style="list-style-type: none"> • User-friendly interface (optimised for touch controls) • Push notifications (alerts and updates sent directly to devices) • Offline functionality (work without an Internet connection) • Personalisation (customisable settings and content preferences and behaviours)
AUDIENCE	<ul style="list-style-type: none"> ★ General Public: Websites often target a broad audience, providing information and services to a wide range of users ★ Specific Groups: Some websites cater to niche audiences, such as hobbyists, professionals, or members of specific organisations 	<ul style="list-style-type: none"> ★ Mobile Users: People who use smartphones and tablets for various tasks, including communication, entertainment, and productivity ★ On-the-go Users: Individuals who need quick access to services while travelling or commuting
EXAMPLE	BBC Bitesize website (inform and educate)	Candy Crush Saga (entertain)



	E-LEARNING PRODUCTS	INFORMATION POINTS
OVERVIEW	E-learning products are digital platforms or software designed for educational purposes, providing interactive learning experiences.	Information points are digital kiosks or screens located in public spaces, providing users with information, directions, and services.
PURPOSE	<ol style="list-style-type: none"> 1. Education 2. Skill development 	<ol style="list-style-type: none"> 1. Self-service 2. Guidance
KEY FEATURES	<ul style="list-style-type: none"> • Interactive lessons (multimedia content, quizzes, and exercises) • Progress tracking • Collaborative tools (discussion forums, chat, and group projects) • Access to resources (e-books, videos, etc.) 	<ul style="list-style-type: none"> • User-friendly interface for easy navigation and interaction • Location-based information providing real-time updates • Multilingual support (options for different languages) • Real-time updates (weather, news, and event schedules)
AUDIENCE	<ul style="list-style-type: none"> ★ Students and Educators: Used in classrooms, online courses, and educational institutions, as well as by parents and trainers ★ Professionals: Individuals seeking to improve their skills or gain new qualifications for career advancement 	<ul style="list-style-type: none"> ★ Public and Visitors: Typically used in public spaces such as shopping centres, and transportation hubs ★ Customers: Found in retail stores and service centres to provide product information and services
EXAMPLES	Duolingo (inform and educate)	Shopping Centre Directory (advertise or sell)



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Interactive digital media encompasses diverse types of content, including images, text, quizzes, layers, audio, animation, navigation, and more. These elements enhance their experience through dynamic and multifaceted interactions.

Images

- **Visual Appeal:** Enhance aesthetic appeal and attract attention
- **Information:** Convey information quickly, e.g. infographics and diagrams
- **Branding:** Reinforce brand identity through logos and themed visuals

Tools: Photography software, e.g. Canon cameras, Adobe Photoshop, GIMP, Corel Painter, Autodesk Maya, Adobe Illustrator

Assets: Digital photographs, illustrations, icons, and vector graphics tools, graphic designs



Text

- **Information:** Provide essential information and instructions
- **Navigation:** Guide users through the interface with clear menus and links
- **Communication:** Convey messages clearly and effectively



Assets: Text files, spreadsheets, documents, etc.

Tools: Word processors, e.g. Microsoft Word, text editors, and design software for typography, e.g. Adobe InDesign

- **Engagement:** Engage users with interactive questions and feedback
- **Assessment:** Test user knowledge or gather opinions

Assets: Question banks, answer choices, feedback messages

Audio

- **Atmosphere:** Set mood or atmosphere with background music
- **Information:** Provide information through voice-overs or podcasts
- **Accessibility:** Aid accessibility with audio descriptions and instructions

Assets: Recorded sound clips, music tracks, voice-overs

Tools: Audio editing software, e.g. Audacity, Adobe Audition



Animation

- **Interaction:** Provide interactive experiences and feedback, e.g. hover effects
- **Explanation:** Simplify complex ideas through animated diagrams and characters
- **Engagement:** Enhance user engagement with moving visuals

Assets: Animated graphics, 3D models, character rigs

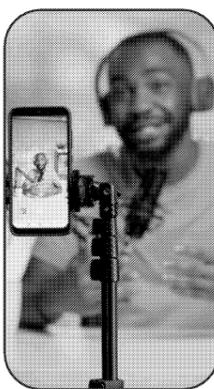
Tools: Animation software, e.g. Adobe Animate, Blender

Navigation

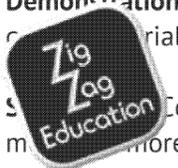
- **Navigation:** Help users move through different sections of the digital product
- **Interaction:** Trigger actions such as submitting forms or playing media

Assets: Button graphics, icons

Video



- **Engagement:** Capture and retain audience attention through dynamic content
- **Demonstration:** Show how to use a product or service
- **Storytelling:** Convey stories and messages more effectively



Assets: Video footage, animations, special effects

Tools: Video editing software, e.g. Adobe Premiere Pro, Final Cut Pro

- **Information:** Present data in a structured format for easy comparison
- **Information:** Display numerical or categorical information concisely

Assets: Data sets, table templates

Tools: Spreadsheet software, e.g. Microsoft Excel, web development tools, e.g. HTML/CSS

- **Clarity:** Organise points or numbers
- **Hierarchy:** Show relationships

Assets: Written content, list style

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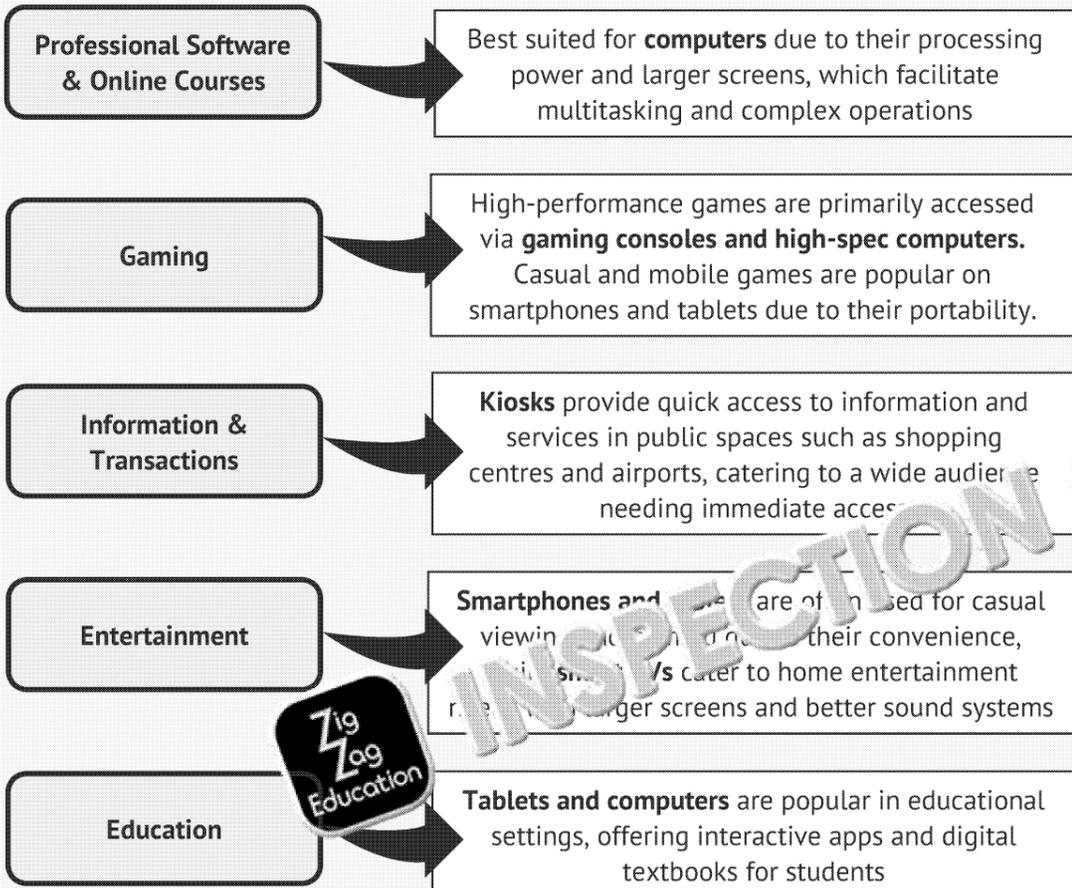


To fully appreciate the diverse types of content in interactive digital media, it is essential to understand the various hardware that can be used to deliver it.

	Computers (Desktops and Laptops)	Games Consoles	Kiosks	Smartphones
USAGE	Browsing the web, streaming videos, playing games, and using software applications	Playing video games, streaming media, accessing game-related content	Information dissemination, self-service transactions, navigation	Browsing the web, watching media, communication
AUDIENCE	General users, gamers, professionals, students	Gamers, children, adults	General public, customers, visitors	General users, professionals
EXAMPLES	Websites, online courses, professional software, video conferencing	Video games, streaming apps, Netflix, YouTube	Interactive maps, ticket booking systems, informational displays	Mobile applications, social media

Linking Purpose and Audience

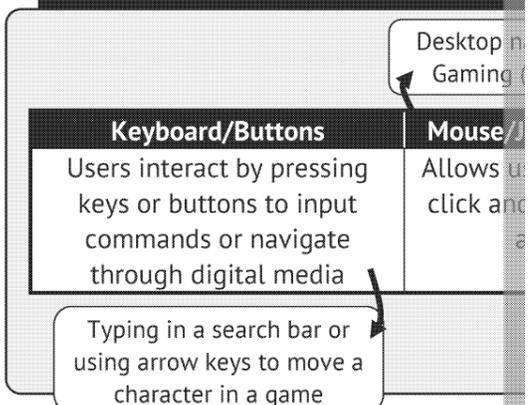
Different devices are chosen based on the specific needs and preferences of the audience and the purpose of the interactive digital media:



Choosing the right device ensures that the media product meets the audience needs and preferences.

Devices	
Interactive whiteboards	Allows teachers and students to collaborate and interact with digital content.
VR/AR devices	Creates immersive experiences for training and education.
Smart TVs	Large screen for watching educational content and interactive applications.
Digital cameras	Captures high-quality photos and videos for documentation and learning.
Smartphones	Easy to carry and use anywhere, providing access to digital content.
Tablets	Bigger screen than a phone, ideal for reading and interactive learning.
Desktop computers	Powerful and reliable, ideal for complex tasks and software.
Laptops	Portable and powerful, great for on-the-go work and learning.
Games consoles	Made for playing games, but also offer educational and interactive experiences.

Methods of User Interaction



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FEATURES & CONVENTIONS OF INTERACTIVE DIGITAL MEDIA

User-friendly intuitive interfaces are easy to navigate and understand, enabling users to achieve goals with minimal effort.

Effective Graphical User Interface (GUI) Design

Involves creating and organising visual elements that enable users to interact with electronic devices or software applications using graphical icons and visual indicators, rather than text-based interfaces or commands. A well-designed GUI facilitates efficient and effective task completion, offering a more intuitive and engaging user experience.

	Description	Example
Consistent Layout	Consistency in the placement of elements helps users predict what to expect when they interact with the screen	Navigation icons are consistently placed at the top of the screen
Colour Scheme	A cohesive colour scheme enhances readability and usability	Using complementary colours for text and background improves readability
House Style	A consistent house style (logo, fonts and colours) maintains brand identity across different media	Using the same logo, font styles and colour schemes across a website, brochures and social media profiles
Typography Selection	Choosing legible fonts with appropriate sizes ensures text readability	Sans-serif fonts (e.g. Arial and Helvetica) are often easier to read on screens
White Space	Adequate white space (or negative space) around elements prevents clutter and improves focus on key content	Leaving space around images and text blocks in a web page layout to avoid a cluttered appearance and make content stand out

Suitability for target audience

tailoring content design and functionality to meet the specific needs and abilities of the intended users, thereby enhancing the overall experience and engagement.

Interface and Interaction Style

Involves the various methods that users employ to engage with digital media and software applications.

	Description	Advantages
Click	Traditional mouse clicks are precise but less intuitive on touch devices	Precision, familiar to most users
Touch / Gesture	Intuitive for mobile and tablet users, enabling actions like pinch-to-zoom or swipe	Natural and intuitive, suitable for mobile devices
Voice Control	Ideal for hands-free interaction, useful in smart homes or for accessibility	Hands-free, accessible for users with physical limitations
Motion / Movement	Used in gaming or virtual reality, allowing for immersive experiences	Immersive, intuitive in 3D environments
Drag / Drop	Useful for organising items, such as file management or graphic design	Intuitive for tasks involving movement of items
Feedback / Closure	Providing immediate feedback, e.g. button changes colour when clicked, assures users their actions have been registered	Reinforces user actions, enhances user confidence

Accessibility in digital media ensures that all users, regardless of abilities, can effectively access and interact with content, promoting inclusivity and equal opportunity. Accessibility can be through several features:

- **Alternative Text:** Descriptions for images help visually impaired users navigate content via screen readers
- **Text Readability:** Clear fonts and adequate size ensure text is easy to read
- **Captions:** Subtitles for audio content aid hearing-impaired users, especially in noisy environments
- **Contrasting Colour:** Using high contrast between text and background enhances readability for users with visual impairment
- **Resizable Text:** Providing options for users to adjust text size for better readability according to their needs
- **Flexible Input:** Allowing the use of various input methods such as keyboard, mouse, voice, or assistive technologies to accommodate different user preferences and abilities
- **Mobile Device Accessibility:** Ensuring that an application or a website is user-friendly on mobile devices, through touch-friendly controls and responsive design
- **Screen Size and Orientation Adjustments:** Designing interfaces that automatically adapt to different screen sizes and orientations, ensuring a consistent user experience across various devices

Selecting appropriate interfaces and interaction styles involves choosing methods that digital media is intuitive, efficient and accessible, considering the needs and preferences of different users.

For **accessibility focused applications**, voice control and flexible input methods (keyboard, mouse, touch) are essential

For a professional **desktop application**, a click-based interface with drag/drop features may be more appropriate

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HARDWARE & SOFTWARE USED TO CREATE INTERACTIVE DIGITAL MEDIA PRODUCTS

HARDWARE

Computers (Desktop and Laptop)

- + Desktops offer high processing power for demanding tasks such as video editing. Laptops are portable for on-the-go work.
- Desktops are not portable and high-specification laptops can be expensive

Microphones

- + Provide clear, high-quality audio for voice-over, podcasts or video projects
- Poor-quality models produce distorted audio, and professional models can be costly

Graphic Tablets

- + Enable precise drawing for digital art and design
- May require expensive software

VR Headsets

- + Deliver immersive experiences for gaming or testing virtual environments
- Require powerful computers or additional devices which can be expensive to purchase and maintain

Digital Cameras

- + Produce high-quality professional media
- High-end models are expensive and bulky equipment such as DSLRs

Games Consoles

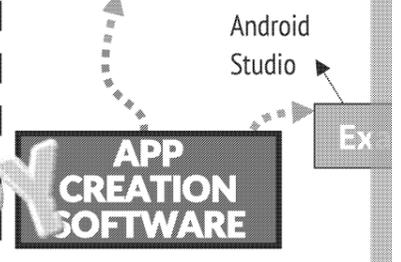
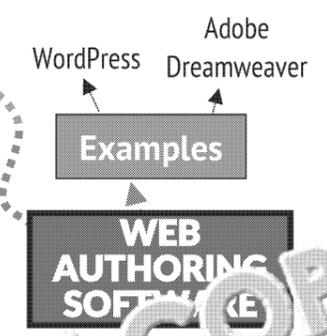
- + Designed specifically for gaming with high-quality graphics and smooth frame rates
- Limited to gaming and entertainment content

Why?
Ease of Use: Visual editors make it accessible for beginners and efficient for experienced designers
Efficiency: Streamlines the design process with pre-built templates and components
Cross-platform Compatibility: Ensures websites are responsive and work across different devices and browsers

Positive Impacts:	Negative Impacts:
Allows rapid development and deployment of professional-looking websites; ensures consistency and responsiveness	Can lead to code bloat if not managed properly, potentially affecting website performance

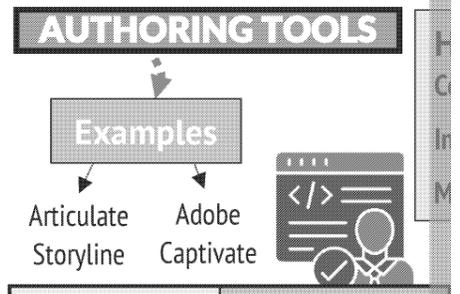
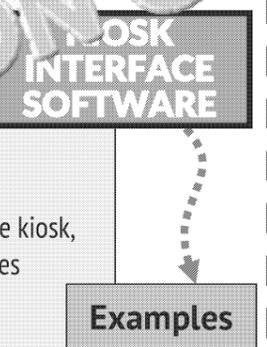
How?
Development Environment: Use development environments (IDEs) for coding
User Interface Design: Include drag and drop elements and components
Testing: Test apps on different devices to ensure they work as they are supposed to

How?
Design and Layout: Create website layouts using a visual interface with drag and drop elements, customisable styles, and create responsive designs that work on different devices
Coding Support: These tools often include code editors with syntax highlighting, auto-completion, and debugging tools, making it easier to write HTML, CSS and JavaScript
Integration: They provide integration with other web technologies and services, such as databases, e-commerce platforms, and content management systems



Why?
User Engagement: Creates intuitive and engaging interfaces for public use
Customisation: Offers flexibility to create design interfaces tailored to specific user needs and environments
Reliability: Ensures the kiosk remains functional and secure for continuous use

How?
Interface Design: Focuses on the creation of user-friendly interfaces for touchscreens
Security Features: Provides tools to secure the kiosk, restricting user access to specific functionalities
Content Management: Allows remote management and updating of kiosk content



Positive Impacts:	Negative Impacts:
Delivers robust and secure interfaces for public interactions; enhances user experience with intuitive design	Can be costly to implement; requires ongoing maintenance and updates



Positive Impacts:	Negative Impacts:
Produces engaging and interactive educational content that can improve learning outcomes	May produce large file sizes, potentially causing loading issues; limited customisation compared to coding from scratch

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Pre-production documentation provides a detailed blueprint that guides the design and development process to ensure user-centred interactive digital media

Screen Designs

The process of creating a visual representation of the interface that users will interact with.

Mock-ups: Detailed visual models that represent the final look and feel of the interface

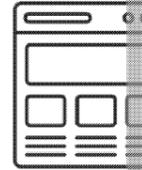
Prototypes: Interactive versions of the screen designs to test functionality

	Includes	Purpose
Mock-ups	High-quality graphics: Detailed images, colours, typography and layout elements that mirror the finished product	<ul style="list-style-type: none"> ➊ Visual representation: Provides a realistic preview of the final design vision ➋ Communication tool: Allows for review and feedback on visual aspects before development begins, ensuring alignment with client and user expectations
	Static content: Text, images, icons, and other interface elements	
Prototypes	Interactive elements: Clickable buttons, menus, and links that mimic the behaviour of the final product	<ul style="list-style-type: none"> ➊ Functionality testing: Allows designers to test and refine the usability and functionality of the interface before full development
	User flows: Simulated navigation paths to test how users interact with different parts of the interface	<ul style="list-style-type: none"> ➋ User testing: Facilitates user testing to gather feedback on interactions and overall user experience, enabling iterative improvements



What are wireframes?

Wireframes are simple black-and-white layouts that outline the structure and functionality of a digital interface. Wireframes focus on structure and layout rather than design details.



What are the key components of wireframes?

- Shapes and lines representing different elements such as headers, text blocks, and images
- Annotations describe the functionality and interaction of each element

What is a key benefit of wireframes?

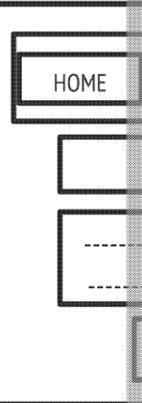
Allows for early feedback and iteration on the basic layout and structure

Final Documentation

Includes all the information needed for the deployment, maintenance and future updates of the product, ensuring smooth adoption and ongoing support



- ✓ User manuals
- ✓ Technical documentation
- ✓ Maintenance plans



Colour Schemes

The colour scheme is a crucial aspect of any digital media project. It involves selecting colours that enhance usability and aesthetics.

Primary Colours	Secondary Colours
These are the dominant colours used for the main elements of the interface, such as backgrounds, primary buttons, headers, and key navigation areas	These are supportive colours used for accents and highlights, such as secondary buttons, links, subheadings and decorative elements

Primary colours establish the overall look and feel of the interface and are often associated with the brand's core identity

Secondary colours complement the primary colours, adding variety and helping to guide the user's attention to specific areas without overwhelming the design

Accessibility:

- ★ Ensuring sufficient contrast between text and background colours is essential for readability, especially for users with visual impairments
- ★ Designing with colour-blind friendly combinations that are difficult to distinguish (such as red and green) or using patterns or textures to differentiate elements when necessary



Text includes all written content within the interface

Font choice → Readable and appropriate for the content, e.g. sans-serif fonts

Font size → Large enough for readability on various devices

Hierarchy → Use of headings, subheadings, and body text to organise information

Layout is the arrangement of visual elements on the screen

	Purpose	Importance
Grid System	Ensures a structured and balanced design	The grid system provides a framework that helps designers create a logical and visually appealing layout. A balanced design makes the interface easier to navigate.
Alignment	Consistent alignment for a clean and professional look	Proper alignment improves the readability of text and the coherence of the interface, making it easier for users to understand and interact with.
White Space	Adequate spacing around elements to avoid clutter	By strategically using white space, designers can draw attention to key elements, such as to-action buttons or important information, and improve the user's focus.

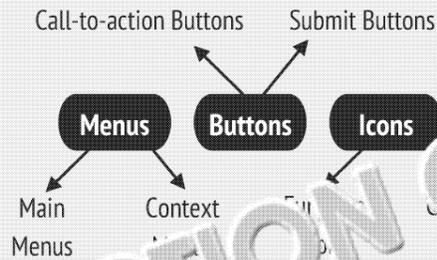
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Graphical User Interface (GUI)

Interactive components that users engage with to interact with digital media. These elements are crucial for creating an intuitive and user-friendly experience.



- 1 **Enhances User Engagement:** GUI elements can be made more engaging and intuitive through the use of visuals
- 2 **Enhances Usability:** GUI elements are easy to understand and use, catering to users with varying technical skills
- 3 **Improves Accessibility:** GUI elements can be designed to accommodate users with disabilities by adhering to accessibility standards, such as including descriptive text for screen readers and enabling keyboard navigation



Microsoft Word features a ribbon interface with icons representing various functions (bold, italic, save), buttons for actions (file save, print), and context menus providing relevant options based on the selected text or object



Facebook utilises a combination of main menus, context menus, buttons, and icons. The main navigation bar includes icons for home, profile, and settings. CTA buttons such as Like, Comment and Share encourage user interaction.

	Definition
Menus	Menus are essential navigation components that provide a list of options or commands.
Links	Links, or hyperlinks, connect users to different sections within the same page, other pages within the site, or external websites.
Breadcrumbs	Breadcrumbs are a type of secondary navigation that shows users their current location within the interface and the path they have taken to get there.

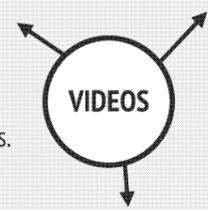
Interaction with Media Elements

Interactive digital media often incorporates various multimedia elements such as images, videos and animations. These elements play a significant role in enhancing user engagement and providing a better user experience.

Quality: Images used in interactive digital media should be of high quality to ensure clarity and professionalism. High-resolution images are preferred and provide a better user experience.

Quality and Accessibility: Videos should be of high quality, with clear audio and visuals. They should include subtitles and transcripts to ensure accessibility for all users.

Purpose: Videos can be used for various purposes, such as educational content, advertisements, and product demonstrations. They can convey information dynamically and effectively.



Relevance: Images should be directly related to the content they accompany. Relevant images enhance the understanding of the content and make the digital media more appealing.

Optimisation: Images should be optimised for fast loading times without compromising quality, ensuring they do not slow down the website or application.

Loading Time: Videos should be optimised to load quickly and play smoothly without buffering, providing a seamless user experience.

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Types of Content for Interactive Digital Media Products

In interactive digital media products, various types of content are utilised to create an engaging and effective user experience. Each type of content has a specific purpose and needs careful planning to ensure it meets client requirements and enhances the overall functionality and aesthetics of the product.

TYPE: AUDIO

- ★ **Music:** Background tracks that set the tone, mood, or theme of the content
- ★ **Sound Effects:** Short audio clips that provide feedback, emphasise actions, or enhance realism
- ★ **Voice-overs:** Narration or dialogue that guides users, explains content, or adds personality

Example Scenario:

Developing an Interactive Adventure Game

Audio Requirements:	Considerations:
<ol style="list-style-type: none"> Background Music: Set the mood and enhance immersion with varied tracks matching different game scenarios Sound Effects: Provide feedback and realism through short audio clips triggered by user actions Voice-overs: Narrate the storyline, guide quests and add personality to characters with clear, engaging dialogue 	<p>Audio Quality and Clarity: Use high-quality recording equipment and professional voice actors to ensure clarity and authenticity</p> <p>→ File Format: Use MP3 for background music and voice-overs for a balance of quality and file size; WAV for high-quality sound effects</p> <p>→ Appropriate Length and File Size: Keep background music loops short and seamless, sound effects brief, and voice-over segments concise to maintain engagement and ensure smooth gameplay</p>

TYPE: IMAGES

- ★ **Photos:** High-resolution images that provide visual appeal, illustrate concepts, and capture moments
- ★ **Illustrations:** Custom or stock illustrations that add a unique style, help explain ideas or support branding
- ★ **Icons:** Small, simple images that represent actions, objects or ideas, often used for buttons, menus, and visual cues

Example Scenario:

Creating an Educational Website for Children Aged 6-8

Image Requirements:	Considerations:
<ol style="list-style-type: none"> Photos: High-quality photos of children engaging in various educational activities to create an inviting and relatable atmosphere Illustrations: Custom illustrations of characters and scenes that align with the site's educational content and branding, making learning fun and engaging Icons: Simple, intuitive icons for navigation (home, back, next), interactive elements (quizzes, games) and actions (download, print) 	<p>→ Resolution and Quality: Ensure images are high-resolution to maintain clarity on all devices; specific attention to the large screens often used in classrooms</p> <p>→ File Format: Using JPEG for photos and PNG for transparent illustrations and icons to ensure scalability and quality</p> <p>→ Size and Scalability: Implement responsive images to cater to different screen sizes, ensuring quick load times without compromising quality</p>

Types and Uses of Interactive Elements in Digital Media

Interactive elements in digital media come in various forms, each serving specific purposes and requiring careful planning to ensure user engagement and functionality across different platforms and applications.

Category	Types	Uses	Considerations
Animation	2D animation, 3D animation, motion graphics	Engage users, explain complex ideas, enhance visual appeal	Smoothness and quality (e.g., MP4), platform compatibility
Text	Articles, descriptions, instructions	Convey information, provide instructions, enhance accessibility	Readability and font choice, conciseness, screen wrapping
Tables	Data presentation, comparison charts	Organise information, present data clearly, compare options	Layout and readability, use of headings
Lists	Bullet points, numbered lists	Summarise information, highlight key points, organise content	Clear structure and font style, content hierarchy
Forms	Input fields, submission buttons	Collect user data, facilitate interactions, enable user inputs	Usability and accessibility, error handling, validation
Navigational Buttons	Links, menus	Guide user navigation, enhance usability, structure content access	Intuitive design, consistent styling
Maps	Interactive maps, static maps	Show locations, provide geographical context, enhance user experience	Accuracy and detail, content relevance
Quizzes	Questions (multiple-choice, true/false, open-ended), interactive elements	Engage users, assess knowledge, provide interactive learning	Clarity and relevance, feedback, user experience
Layers	Overlapping content, interactive layers	Add depth to design, provide additional information, enhance interactivity	Layering order and visibility, design, device compatibility

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1.4 PRE-PRODUCTION DOCUMENTATION & PLANNING

9 Pre-production documentation and planning are crucial steps in developing interactive digital media. They help ensure that the final product meets user needs and involves creating detailed navigation diagrams, wireframes, and prototypes. This planning ensures a logical structure, intuitive controls, and consistent interactions.

Tips when planning interactive elements and controls

- ☑ **User-centred design:** Focus on user needs and usability when planning interactive features.
- ☑ **Consistency:** Ensure that similar actions have similar controls across the application to reduce the learning curve.
- ☑ **Accessibility:** Design interactive elements to be accessible to all users, e.g. providing alternative text for multimedia.

Planning the navigation between scenes

Navigation diagrams, also known as sitemaps, serve as a blueprint for the structure of an interactive application, website or multimedia project. They visually represent how different pages or scenes are interconnected, providing a clear overview of the application's architecture. This helps designers, developers and stakeholders understand the flow and organisation of the content, ensuring that the user experience is intuitive and logical.

Components:

Nodes	Links
Each node in the diagram represents a specific page or scene within the application. Nodes can be depicted using shapes such as rectangles or circles, each labelled with the name of the page or scene, e.g. 'Home', 'About Us', 'Product Page'.	Lines or arrows between nodes indicate the connections or pathways between these pages or scenes. These lines show how a user can navigate from one page to another, e.g. clicking a button on the home page to go to the 'Contact' page.

Steps to creating navigation diagrams:

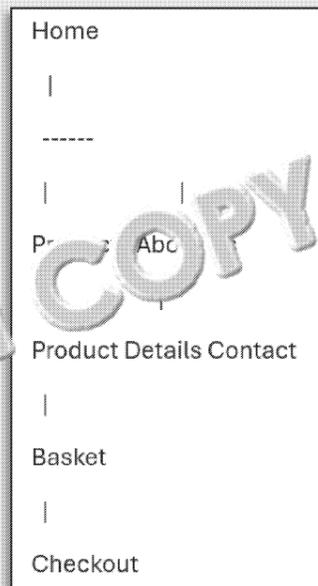
1 Identify Key Pages/Scenes: Begin by listing all the primary pages or scenes users will interact with. This includes the main pages that form the core of your application and any sub-pages that provide additional content or functionality.

Example: For an e-commerce website, key pages might include Home, Products, Product Details, Basket, Checkout, About Us and Contact.

2 Establish Relationships: Determine how these pages are connected logically. Consider the user's journey and how they will navigate through the application.

Example: A user might start at the Home page, then go to Products, view a Product Details page, add an item to Basket and proceed to Checkout. Additionally, they might visit the About Us or Contact pages from the Home page.

3 Draw the Diagram: Use shapes to represent each page or scene. Rectangles or circles work well for this purpose. Label each shape with the name of the page or scene it represents. Draw lines or arrows to connect the shapes, creating the pathways between them. Use arrows to indicate the direction of navigation, e.g. from Home to Products. Organise the diagram hierarchically, placing main pages at the top and sub-pages below them, connected by lines to show their relationships.



Planning interactive elements

Effective planning of interactive elements ensures that users can interact with the application in a clear and intuitive way.

Buttons	Buttons are used to enable users to interact with the application, triggering actions such as navigating to a new page or submitting a form.
Forms	Forms collect user input and are typically used for registration, login, and data entry. Examples include text boxes, radio buttons, and dropdown menus.
Media Elements	Media elements like images, videos, and audio clips engage users and provide visual feedback. Dynamic media elements can adjust their content based on user interactions.
Animations	Animations provide visual cues and feedback, such as highlighting a button when hovered over or showing a loading spinner. They help guide the user's attention and provide a sense of flow.

Example: Imagine you are designing a user interface for a new interactive application. You need to plan the following interactive features:

- 1 Identify user's actions:** List the actions users will perform, such as account creation, login, watching a video, and submitting a form.
- 2 Define controls:** Determine the controls needed for each action: Buttons → Browse, Register, Login; Forms → Registration, Login; Media elements → Video player; Animations → Smooth transitions.

3 Create wireframes: Create wireframes for each screen. Wireframes show the layout of the application and how users will interact with it. Review wireframes with stakeholders to ensure they meet user needs. This iterative process helps refine the design before development.

Planning responses to interaction (feedback/closure)

- ☑ **Feedback mechanisms:** Design visual or auditory cues that provide feedback, e.g. a button might change colour when clicked.
- ☑ **Closure:** Ensure users know when a task is complete. This could be a confirmation message after submitting a form or completing a purchase.
- ☑ **Error handling:** Plan for potential errors and guide users to resolve them, e.g. highlight missing fields on an incomplete form.

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2.1

TECHNIQUES FOR SOURCING SUITABLE ASSETS

10

When creating interactive digital media, sourcing suitable assets is a critical step. This includes finding images, videos, sounds and other digital elements that can enhance your project.

Sourcing suitable assets

Technique	Description	Example Tools
Advanced searching	Using tools and techniques to search for assets	<ul style="list-style-type: none"> Search engines, e.g. Google, Bing Advanced filters, e.g. 'high-resolution landscape images' Metadata, e.g. date, size, colour, usage rights, file type Boolean operators, e.g. AND, OR, NOT
Search by feature/property	Assets based on specific characteristics	<ul style="list-style-type: none"> Resolution, e.g. high-resolution images or videos Aspect ratio, e.g. 16:9 for widescreen layouts Format, e.g. PNG, MP4 Length/size, e.g. 30-second audio clip
Search by licence	Finding assets with appropriate usage rights	<ul style="list-style-type: none"> Creative Commons (licences with various terms), e.g. CC BY (must credit the creator), CC BY-SA (can be shared and adapted if the same licence is maintained) Royalty-free (no recurring fees) Public domain (no restrictions) Stock libraries, e.g. Getty Images, Shutterstock
Libraries	Sources for pre-made digital assets	<ul style="list-style-type: none"> Stock media websites, e.g. Shutterstock Free libraries, e.g. Pixabay Academic and government resources, e.g. BBC Archives

Example: Creating an Educational Interactive History Website

Overview: You are a student working on an educational interactive website about the history of World War II. You will be working with various media elements such as images, videos and audio clips to engage users and provide an interactive learning experience.

Steps to identify and select pre-made digital assets...

1

Goal: Ensure the assets align with the theme and purpose of your project.

Action: Search for images, videos, and audio clips specifically related to World War II events, key figures, battles, and artefacts.

Example: You find a collection of public domain images from the National Archives showing significant events like the D-Day landing and wartime propaganda posters. These images directly relate to the content of your website.

2

QUALITY

Goal: Use high-resolution and well-produced media to improve the overall quality of your project.

Action: Filter search results to show only high-resolution images and HD videos.

Example: You discover high-resolution photographs from the Imperial War Museums' digital collection. These images are clear, detailed and professionally produced, enhancing the visual appeal of your website.

3

Goal: Check the assets for any copyright issues.

Action: Review the assets to ensure they are suitable for educational purposes.

Example: While browsing through various collections, you find that it is available under Attribution-NonCommercial, allowing you to use the source and do not

→ Clear and consistent naming conventions ensure that assets are easy to find throughout a project life cycle.

- Use descriptive naming conventions
- Avoid special characters and spaces
- Include relevant information

▲ Suggest three key principles for naming conventions for digital assets.

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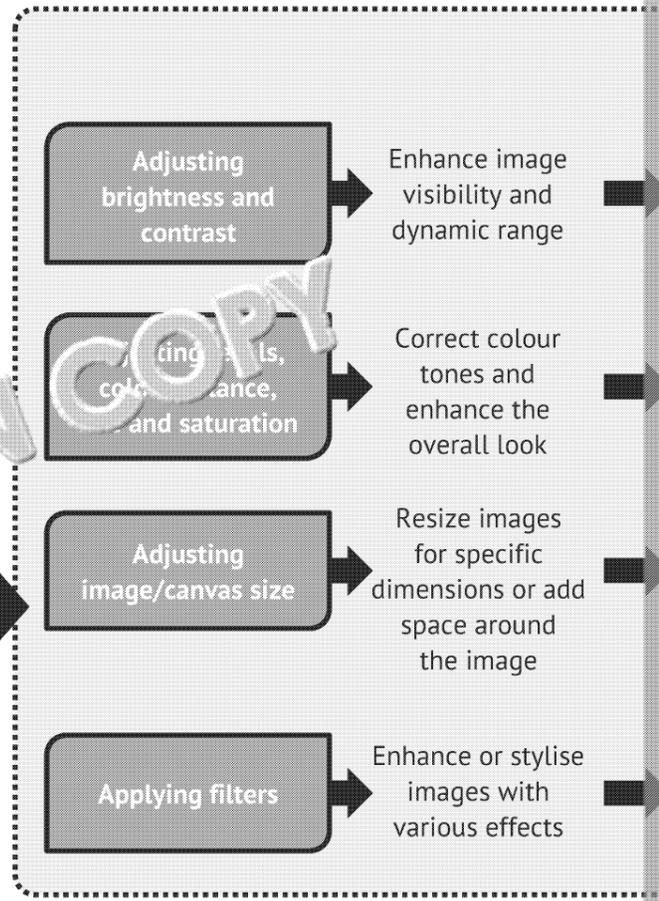
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STATIC IMAGE, MOVING IMAGE & AUDIO ASSETS

Static image types:

	Vector images	Bitmap images
Definition	Composed of paths defined by mathematical expressions, creating lines, shapes and curves. Can be scaled indefinitely without loss of quality.	Made up of individual pixels, each with its own colour, forming an image.
Common formats	SVG, AI, EPS, PDF	JPG, PNG, GIF, BMP, TIFF
Use cases	Logos, icons, illustrations, graphic design, branding, user interface design	Photographs, detailed artwork, web graphics requiring specific pixel dimensions
Advantages	Infinite scalability, smaller file sizes for simple graphics, easy editing and manipulation	Excellent for detailed and complex images, widely supported across various platforms
Disadvantages	Less effective for complex, detailed images like photographs	Quality degrades when scaled up, larger file sizes for high-resolution images



Moving image asset types:

Video

Video refers to recorded moving visual images that can be played back at varying speeds. It includes formats such as MP4, AVI and MOV.

Videos are used in films, advertisements, tutorials, social media content and more. They can convey complex information effectively through visual and auditory means.

Platforms like Instagram and Facebook host social media content that range from personal vlogs to promotional content, engaging users through visually appealing and quickly consumable formats.

Animation / Animated assets

Animation involves creating the illusion of movement by displaying a series of images or frames. These can be 2D animations, like cartoons, or 3D animations, like computer-generated imagery (CGI).

Animated assets are used in films, games, advertising and educational content to illustrate concepts, tell stories and engage audiences.

Examples of 3D animated assets seen as Pixar's 'Toy Story' bring characters and worlds to life in ways that are visually appealing and emotionally resonant for audiences of all ages.

Techniques to repurpose audio/moving image

Adjusting Volume	Ensure consistent volume levels
Clipping	Remove unwanted audio/video clips
Speed/Tempo	Adjust video playback speed without altering the audio pitch
Splitting	Edit sections of the audio recording / video footage easily
Trimming	Shortening the start and/or end of an audio / a video clip
Extending	Making the audio/video longer by looping segments or adding additional content

Creating and repurposing video assets

- ★ Use the **import** function to bring video footage into the editing software. Organise clips into bins or folders for easy access.
- ★ Drag and drop video clips onto the timeline. Arrange them in the desired order to create a coherent **sequence**. Use multiple tracks for audio and video.

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Interactive asset types:

Interactive assets are essential in digital media for enhancing user engagement and providing dynamic content. Examples include:

1. **Diagrams:** Visual representations that allow users to interact with different parts to get more information. Use layering, hyperlinks, or actions to create interactive areas.
2. **Maps:** Enable exploration of geographic information through zooming, clicking, and real-time data. Embed interactive maps using map APIs and enhance them with pop-ups, and layers.
3. **Buttons / Rollover Buttons:** Change appearance or display additional content when hovered over or clicked. Use CSS for styling and JavaScript for functionality like changing colour, showing tooltips, or triggering animations.
4. **Navigation Bars:** Help users navigate a website easily, often with drop-down menus and dynamic elements. Use CSS for styling and JavaScript for interactivity. Frameworks like Bootstrap for responsiveness and interactivity.
5. **Forms:** Collect user input through elements like text fields, radio buttons, checkboxes, and drop-down menus. Use HTML for structure, CSS for styling, and JavaScript for validation and feedback.
6. **Hero Carousels:** Showcase dynamic elements with animations, clickable content, and transitions to engage visitors.

A **hero carousel** featuring the latest student film projects, with eye-catching visuals and brief descriptions will immediately capture visitor attention with dynamic content.

The **navigation bar** uses Bootstrap classes for a responsive design. The navbar-expand-lg class makes the navbar expand and collapse based on the screen size.

A **short paragraph** introducing the media club, its mission, and the unique aspects of the club provides a quick overview for new visitors.

A simple, intuitive **form** for prospective members to apply, including fields for personal information and areas of interest streamlines the process of joining the club. The **required** attribute ensures that these fields must be filled out before the form can be submitted.

A **grid layout** of film-making equipment with descriptions and links to individual project pages with interactive pop-ups, enhancing user experience.

A list of how-to articles and video tutorials on topics such as scriptwriting, filming techniques, and editing provides **resources** in an engaging format.



A **diagram** featuring various film-making equipment with interactive pop-ups offering usage tips and sample footage.

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TECHNICAL SKILLS TO CREATE INTERACTIVE DIGITAL MEDIA 1



A **responsive design** ensures navigation adapts to different screen sizes, e.g. a hamburger menu on smaller screens.

Product Folder Management

When creating interactive digital media, organising **product folders** effectively is crucial.

	Description	Example
Root Folder	Main directory for a project	Project_Name
Styles Folder	Includes all styling files, such as CSS	styles
Subfolders	Inside the root folder for different types of content	Project_Name documents images media scripts styles
Scripts Folder	Stores all scripts and code files, such as JavaScript or Python scripts	scripts main.js utils.js
Images Folder	Stores all image assets such as icons and backgrounds	images backgrounds buttons icons
Media Folder	Contains all multimedia content such as audio and video files	media audio video
Document Folder	Stores all project documentation, briefs and notes	Project_Name documents meeting_notes ✓ project_brief ✓

Naming Conventions

Using clear and consistent naming conventions is essential for effective file management.

Convention	Example
Consistency in using lower-case letters helps in avoiding confusion between different systems that might be case-sensitive	main.css <i>instead of</i> Main.css
Use dates and versions	When dealing with multiple versions or updates, include dates or version numbers in a standardised format main_v1.0.js, main_v1.1.js, <i>or</i> main_20230618.js
Avoid generic names	Avoid names like final, new, or updated as they don't provide clear information about the file's content or purpose <i>Instead of</i> final_project.docx, <i>use</i> project_brief_v2.docx
Be specific and concise	Names should be as concise as possible while still being descriptive btn_submit_hover.png <i>is better than</i> button_when_user_hovers_submit.png

ADVANTAGE: Well-organised folders make it **easier to find and manage** files, **reducing time spent searching** for items

DISADVANTAGE: Setting up a detailed folder structure and conventions can be **time-consuming** at the start of a project



A horizontal or vertical **navigation bar** typically contains the main hyperlinks to the primary sections

Triggers and Behaviours

Triggers and behaviours are mechanisms that respond to user actions on a web page.

Triggers	Events or actions by users that initiate a specific response or behaviour on the web page	<ul style="list-style-type: none"> • Mouse clicks • Key presses • Mouse hover • Form submissions • Page load
Behaviours	The responses or actions performed by the web page in reaction to triggers	<ul style="list-style-type: none"> • Displaying a pop-up message • Changing an element's style • Moving an element • Updating content

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TECHNICAL SKILLS TO CREATE INTERACTIVE DIGITAL MEDIA 2

Key Elements in Master Pages / Templates

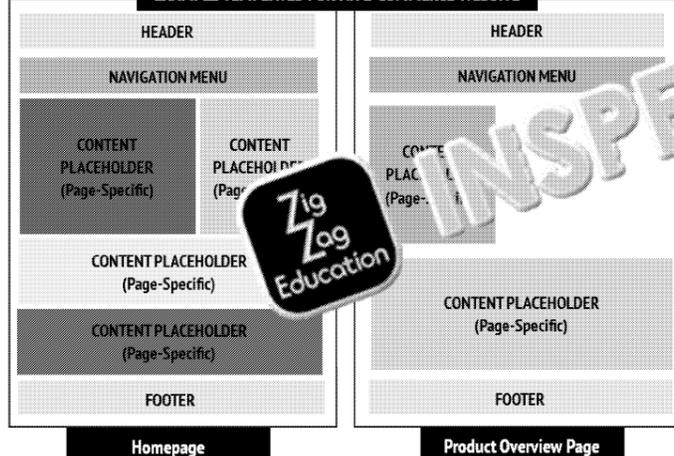
Foundational tools in web design and digital media creation, ensuring a consistent and professional look across all pages by standardising elements such as layout, house style, and navigational structure.

Creating Master Pages / Templates

Master pages consistently repeat design and layout elements across multiple pages. This allows you to create and update these elements in one place, ensuring a unified appearance throughout your media product.

- **Design a Layout:** Start with a wireframe or sketch of the layout. Define the position of fixed elements like the header and footer.
- **Apply House Style:** Use your chosen colour scheme, fonts, and design elements consistently across the layout
- **Define Editable Regions:** Mark areas where page-specific content will be placed
- **Create the Template:** Use web development tools or software, e.g. Adobe Dreamweaver, to build the template

EXAMPLE TEMPLATES FOR AN E-COMMERCE WEBSITE



Inserting Content

Inserting content into interactive digital media involves strategically placing text, images, multimedia, and interactive elements to effectively convey information and engage users, ensuring a rich and dynamic experience.

Fixed content

refers to the elements of a website or digital media product that remain constant across all pages. These elements provide a consistent framework and ensure that essential information is always accessible to users.

Logos: The company or brand logo is usually placed in the header to maintain brand identity and provide a visual anchor

Navigation Bar: A consistent navigation bar across all pages allows users to easily move between different sections of the site

Contact Information: Key contact details such as phone numbers, email addresses, or social media links should be included for easy access

Legal Information: Terms and conditions, privacy policies, and copyright notices are commonly placed in the footer

Additional Navigation Links: Links to secondary pages, such as FAQs, site maps, and support pages, can also be included in the footer

Advertisements or Promotions: Fixed promotional banners or ads can be placed in sidebars

Widgets: Widgets for recent posts, popular content, or social media feeds can be fixed elements in the sidebar

Inserting Content into Interactive Digital Media Products:

- **Text:** Use HTML tags for structure such as <h1>, <p>, , <table>
- **Images:** Use the tag with appropriate attributes for size and alt text
- **Multimedia:** Embed multimedia using HTML5 tags like <audio>, <video>, and <iframe>

Editable content

Regions are specified within the template where unique content can be added or updated for each page. These areas are designed to be flexible, allowing for a variety of content types to be displayed based on the needs of each page.

Text Sections: Paragraphs, headings, and other text elements that provide the main body of content for the page

Image Galleries: Collections of images that can be updated or changed to fit the context of the page

Videos: Embedded video content relevant to the page topic

Forms: Contact forms, subscription forms, or surveys that can be placed within the editable regions

Tables and Lists: Data tables, bullet lists, or numbered lists that organise information clearly

Interactive Elements: Maps, charts, or other interactive components that provide dynamic content

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Native File Formats

During the creation of interactive digital media products such as websites, mobile apps, digital maps, e-learning products, information points, and games, it is crucial to save your work in the native file format of the software you are using. This approach maintains the full range of editing capabilities and ensures that all elements, assets and features remain editable.

Interactive Digital Media Product	Native Software	Native File Formats
Websites	Adobe Dreamweaver	.html (templates)
	Visual Studio Code	.html, .css, .js
Mobile Apps	Android Studio	.java, .kt (Kotlin)
	Xcode	.swift
Digital Maps	ArcGIS	.mxd, .aprx
E-learning Products	Adobe Captivate	.cptx
Information Points	Kiosk Software (various)	.html, .css, .js, .xaml (WPF)
Games	Unity	.unity (scenes), .cs (scripts)

Version Control

Version control systems (VCS) like Git are essential for tracking changes and collaborating on projects. Using version control helps you manage the evolution of your product by allowing you to:

- 1 Roll back to previous versions if something goes wrong
- 2 Experiment with new features without fear of losing the current stable version
- 3 Collaborate with team members without overwriting each other's work

Platform-independent File Formats

Using platform-independent file formats ensures your product can be accessed without requiring specific software installations.

Interactive Digital Media Product	Platform-independent File Formats	Compatibility
Websites	HTML, CSS, JS	Universally supported by web browsers
Mobile Apps	Progressive Web Apps (PWA)	Work across different devices and platforms
Digital Maps	JSON, KML	Widely supported by various mapping tools and software
E-learning Products	SCORM, HTML5	Compatible with most learning management systems (LMS) and web browsers
Information Points	HTML, CSS, JS	Can be displayed on various devices and browsers without needing specialised software
Games	WebGL, HTML5	Allows games to run directly in web browsers without needing additional plug-ins

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TECHNIQUES TO TEST/CHECK THE TECHNICAL PROPERTIES OF INTERACTIVE DIGITAL MEDIA

Methods of Testing and Checking

Using organised steps to make sure a product works properly, performs well, and gives users a good experience while meeting the required goals or expectations.

This highlights the most important parts of the game that need testing to make sure it works properly and keeps users happy.

This explains who is responsible for each task during testing to make sure everyone knows what to do and stays accountable.

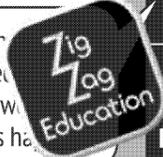
This shows the schedule for each stage of testing to help keep the project on track.

This explains what makes a test successful, ensuring the game meets quality and performance standards.

This highlights any risks that could affect the testing process.

The test plan explains the goals, resources, schedule, and scope of testing. It includes:

- Purpose of testing
- Features to be tested
- Testing tasks
- Team responsibilities
- Test environment set-up
- Risks and backup plans



Example: Test plan for a mobile app game

Purpose	This plan explains how we will test the new mobile game, focusing on the features that will be tested, and the resources needed. The game is designed to keep users engaged with fun gameplay and impressive graphics.															
Features to be tested	<ul style="list-style-type: none"> ✓ User registration and login ✓ Main menu navigation ✓ Gameplay mechanics (levels, progression) ✓ In-game purchases ✓ Leaderboards and achievements ✓ Multiplayer functionality ✓ Settings and user preferences 	Features not to be tested <ul style="list-style-type: none"> ✓ Backend server functionalities (tested separately) ✓ Third-party integrations (assumed to be tested by their providers) 														
Personnel	Test manager: Jane Doe QA lead: John Smith Testers: Alice Johnson, Bob Williams Developers: Dev Team A	Tools Testing framework → Appium Bug tracking → Jira Performance testing → LoadRunner Devices → iPhone 12, Samsung Galaxy S21, Google Pixel 5														
Schedule	<table border="1"> <thead> <tr> <th>Phase</th> <th>Dates</th> </tr> </thead> <tbody> <tr> <td>Test planning</td> <td>1 July - 7 July</td> </tr> <tr> <td>Test case development</td> <td>8 July - 14 July</td> </tr> <tr> <td>Initial testing (alpha)</td> <td>15 July - 22 July</td> </tr> <tr> <td>Bug fixing</td> <td>23 July - 29 July</td> </tr> <tr> <td>Final testing (beta)</td> <td>30 July - 6 August</td> </tr> <tr> <td>Release preparation</td> <td>7 August - 10 August</td> </tr> </tbody> </table>	Phase	Dates	Test planning	1 July - 7 July	Test case development	8 July - 14 July	Initial testing (alpha)	15 July - 22 July	Bug fixing	23 July - 29 July	Final testing (beta)	30 July - 6 August	Release preparation	7 August - 10 August	Deliverables <ul style="list-style-type: none"> ✓ Test plan ✓ Test cases ✓ Test logs ✓ Defect reports ✓ Test summary report
Phase	Dates															
Test planning	1 July - 7 July															
Test case development	8 July - 14 July															
Initial testing (alpha)	15 July - 22 July															
Bug fixing	23 July - 29 July															
Final testing (beta)	30 July - 6 August															
Release preparation	7 August - 10 August															
Success criteria	<ul style="list-style-type: none"> ✓ All critical and major issues are fixed ✓ The game runs smoothly on all target devices ✓ Beta testers give positive feedback ✓ The game meets accessibility standards 															
Risks and mitigation	<ul style="list-style-type: none"> ⊗ Delays in receiving the latest build ⊗ Issues with testing tools ⊗ Unavailability of testing devices 	<ul style="list-style-type: none"> + Regular communication with development team + Backup testing environment + Secondary devices and backups 														
Testing tasks	<ul style="list-style-type: none"> <input type="checkbox"/> Develop test cases for all features within scope <input type="checkbox"/> Review and approve test cases <input type="checkbox"/> Execute test cases <input type="checkbox"/> Document test results and log defects <input type="checkbox"/> Conduct regression testing to ensure new changes do not affect existing functionalities 															
Testing environments and configuration	<ul style="list-style-type: none"> ⇒ Development environment ⇒ Staging environment ⇒ Ensure all testing devices have the latest OS versions ⇒ Install the latest game build on all devices 															

This makes it easy to understand the overall goals of the test plan.

This explains which parts of the game will be tested and which parts will not, ensuring that the most important features are covered.

This lists the tools and devices used for testing to ensure everything is ready and the process runs smoothly.

This lists all the documents and reports that will be created during the testing process.

This explains ways to identify and mitigate risks during testing.

Ensures all functionalities are thoroughly tested. Uses a process to track and fix issues efficiently. Confirms that problems don't return and new changes don't cause new issues.

Ensures testing is done in environments that closely mimic the production environment.

Keeps the testing environment updated to reflect real-world usage conditions.

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TECHNIQUES TO TEST/CHECK THE TECHNICAL PROPERTIES OF INTERACTIVE DIGITAL MEDIA

Methods of Testing and Checking

Success criteria: Define the benchmarks for passing the tests, ensuring all features work correctly and that the game performs reliably, offers a smooth user experience, and meets accessibility guidelines.

Example: Success criteria for a mobile app game

- ✓ All required features (e.g. user registration, gameplay, in-game purchases) are working
- ✓ No major bugs affect gameplay or user progression
- ✓ Works across a range of operating systems (OS)
- ✓ The game responds correctly to user inputs
- ✓ Correct error messages are shown for unexpected user actions
- ✓ Game, level, and asset loading times are reduced to minimise user wait times
- ✓ The game maintains a consistent frame rate (e.g. 30 or 60fps) on all devices
- ✓ The game avoids excessive battery drain
- ✓ The game handles network changes smoothly
- ✓ The interface is easy to use, visually appealing, and user-friendly
- ✓ Game mechanics and features keep players interested and encourage ongoing interaction
- ✓ The game provides clear and immediate feedback to user actions
- ✓ The game runs smoothly without crashes or freezes during normal use
- ✓ Beta testers and users report high satisfaction with the game's features and overall experience

Accessibility compliance: Ensure the game meets standards for users with disabilities.

Visual	Audio	Motor	Cognitive	Satisfaction
Options such as colour-blind mode and high-contrast text/UI improve visibility for users with visual impairments	Subtitles or captions are available for all audio content, and volume controls are easy to access	The game supports alternative input methods (e.g. switch controls) and offers customisable control options	Clear and concise instructions, simplified modes, and features assist users with cognitive disabilities	The game meets accessibility standards (e.g. WCAG) to ensure inclusivity for all players

Functionality tests: Ensure smooth navigation and issue-free access.

Navigation Elements	Interactivity Elements	Input and Output Checks
Ensure all navigation elements (menus, buttons) work properly, allowing users to move through the application smoothly	<ul style="list-style-type: none"> ★ Ensure buttons trigger the correct action ★ Check forms can be filled, submitted, and processed properly ★ Check interactivity elements respond as expected 	<ul style="list-style-type: none"> ★ Ensure inputs are processed correctly and display expected outputs ★ Ensure user data is saved and retrieved accurately

Performance of multimedia assets: Ensure multimedia assets load quickly and provide a high-quality user experience.

Loading Times	Quality & Performance
<p>Ensure multimedia loads quickly to prevent user frustration:</p> <ul style="list-style-type: none"> → Images: ⌚ 1–2 seconds → Videos: ⌚ 2–3 seconds → Audio: ⌚ 1–2 seconds → Animations: ⌚ 1 second → Mobile Apps: ⌚ 1–3 seconds → In-game: ⌚ 1 second 	<ul style="list-style-type: none"> 🖼️ Image Quality: Images display correctly and are not pixelated or distorted 📺 Video Playback: Videos play smoothly without buffering or lag 🎵 Audio Quality: Audio files play without distortion or drops in quality

Testing

Correct Data Format: Input fields accept data formats

e.g. email field accept properly formatted email addresses

Email

Phone

Numeric fields only numbers

Navigation tests

- All Navigation Elements
- Uncommon Elements

Key Areas to Test

- ✓ Main navigation
- ✓ Submenus
- ✓ Internal links
- ✓ Buttons and links
- ✓ Breadcrumbs
- ✓ Pagination
- ✓ Skipping sections
- ✓ Back and forward
- ✓ Random clicks
- ✓ Deep linking
- ✓ Simultaneous actions

Throttling bandwidth

Slowing down Internet speed on purpose to test how apps and websites perform under slow network conditions

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TECHNIQUES TO REVIEW THE FITNESS FOR PURPOSE OF INTERACTIVE DIGITAL MEDIA

Ensuring that interactive digital media meets client requirements, target audience needs, and business objectives.

Suitability of Content

Ensure content is relevant, appropriate, and matches the audience needs.

- Techniques:**
- ✓ Check text for correct grammar, clarity, relevance, accuracy, and tone
 - ✓ Check images for good resolution, relevance, appropriateness, and copyright issues
 - ✓ Check videos are good quality, relevant, the right length, and accessible

A **design review** checks whether a product's design meets requirements, identifying any issues with usability, appearance, function, or accessibility before development continues.

Creating Interactive Digital Media

has both advantages and challenges that

- Advantages:**
- Engages users with interactive elements like quizzes and polls
 - Personalised to improve user satisfaction and retention
 - Offers immediate feedback, boosting learning outcomes

Suitability for Client Requirements

Ensure the final product meets all features and functions specified in the client's brief.

Importance?

Client Satisfaction

Meeting client requirements ensures the product meets expectations, leading to higher satisfaction and more future business opportunities

Project Success

A product that meets the client's requirements is more likely to succeed, as it solves the specific problems or needs of the project

Avoids Scope Creep

Following the client's brief prevents scope creep, where extra features or changes cause delays and higher costs

Quality Assurance

Ensuring all features work correctly is key to quality assurance, reducing defects and issues after launch

Accountability

Delivering what was agreed shows professionalism and builds trust with the client

Scope of work (SOW) outlines the tasks, deliverables, and timelines based on the client's requirements

A **client brief** is a document that outlines the client's needs, expectations, and requirements for the project

User acceptance testing (UAT) is testing done by the end user to ensure the product meets their needs

Techniques

Conduct a review session with the client

Schedule a meeting with the client to review the final product, demonstrate how it meets the requirements, and collect feedback on any issues or discrepancies

Interactive presentation:

Let the client explore the app, test features, and perform tasks to experience how it works

Feature demonstration:

Create a demo that shows key features and how they meet the client's requirements

Aspect	Advantages	Disadvantages
Client Satisfaction	Leads to repeat business and good reviews	Focusing only on the brief might miss chances for innovation
Project Success	Increases the chance of success by meeting client needs	Sticking too closely to the brief might limit flexibility to change
Avoids Scope Creep	Prevents extra changes that could cause delays and extra costs	Client requirements can feel too formal or slow
Quality Assurance	Ensuring all features work correctly is key to quality assurance, reducing issues after launch	Testing can take longer if requirements are unclear or complex
Accountability and Trust	Building trust with the client by showing professionalism	Relying too much on initial requirements can be problematic if client needs change
Cost Management	Helps manage costs by sticking to agreed features	Extra features might be requested, needing careful negotiation
Documentation and Clarity	Provides clear structure to meet client needs	Over-reliance on documents can limit creative solutions
Risk Management	Reduces risk by delivering agreed features	Following the brief too strictly might make it hard to adapt to new challenges

Aspect	Advantages
User Engagement	More engagement because the product is relevant and easy to use
User Retention	Increased likelihood of repeat use and loyalty
Market Success	Greater adoption and success by meeting market needs
User Experience	Improves satisfaction and enjoyment
Brand Reputation	Positive experiences build a stronger brand
Tailored Content and Features	Makes the product more relevant to the target audience
Competitive Edge	Meeting the target audience's needs better than competitors
Feedback and Improvement	Direct feedback helps make improvements

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Constraints Limiting the Effectiveness of Interactive Digital Media

Interactive digital media has revolutionised how we consume content, engage with brands, and interact with technology. However, creating high-quality interactive digital media comes with its own set of challenges. Several constraints can limit the effectiveness of these media projects, impacting the final output's depth, quality and user engagement. These constraints span across various areas such as time, budget, hardware, software and skills. Understanding these limitations is crucial for setting realistic expectations, planning effectively, and delivering a successful project.

Interactive Digital Media Improvements

The landscape of interactive digital media is continuously evolving with technological advancement and changing user expectations. To create more immersive and impactful experiences, it is essential to focus on continuous improvement in various aspects of digital media. Enhancements in overall style and design, quality, content, user interface, animation/video, and audio can significantly elevate the media, making it more engaging, immersive and effective.

Time	Developer Deadlines	Developer deadlines can limit the depth and quality of digital media produced
	Project Phases	Allocated time for each phase (planning, design, development, testing) affects overall quality
Resources	Human Resources	Limited team size or lack of specialised roles can hinder project effectiveness
	Financial Resources	Budget constraints affect the ability to acquire necessary tools, software, or hire skilled personnel
Hardware	Performance	Older or less powerful hardware can limit the complexity and quality of the media created
	Compatibility	Ensuring the media works across various devices and platforms can be challenging
Software	Functionality	Limited or outdated software can restrict creative possibilities and efficiency
	Compatibility	Issues with integrating various software tools can lead to workflow inefficiencies
Skills	Technical Skills	Lack of expertise in necessary software or technologies can limit the quality of output
	Creative Skills	Insufficient creative skills in design, animation and storytelling can affect the media's effectiveness

Improvements for Consistency	
Aspect	Improvement
Colour Schemes	Colour Palette Guide – Develop a colour palette guide that defines primary, secondary and tertiary colours. Ensure all team members use the palette for consistency.
Typography	Font Guidelines – Create a typography guide that specifies font families, sizes, weights, headings, subheadings, body text, and captions. Include font pairings and usage rules.
Visual Motifs	Design Elements Library – Develop a library of design elements such as buttons, icons, and backgrounds that can be reused across the media to ensure a cohesive look.
Logo Usage	Logo Variations – Develop different versions of the logo (horizontal, vertical) and specify when and where to use each variation.
Voice and Tone	Consistent Messaging – Ensure all communications, whether text or audio, align with the brand's core values and messaging.
Imagery	Photo and Video Style – Define a specific style for photography and video, including aspects such as lighting, composition, and subject matter.
Animations and Interactions	Interactive Elements – Design interactive elements such as buttons and links that are consistent in appearance and behaviour, providing a uniform user experience.

Impact of successful interactive digital media

➊ **Client Satisfaction** High-quality and effective media can lead to repeat business and additional projects from satisfied clients

+

➋ **Reputation Building** Successful projects build a positive reputation, attracting more clients and opportunities

Aspect	Improvement
Search Functionality	Filters and Sorting – Implement filters and sorting options to help users find content more easily.
Breadcrumbs	Navigation – Use breadcrumbs to help users understand their current location on the site and navigate back.
Interactive Media	Clickable Areas – Define clear, additional clickable areas for interactive elements.
Engaging Buttons	Visual Feedback – Provide visual feedback when buttons are clicked to enhance user interaction.

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1.1

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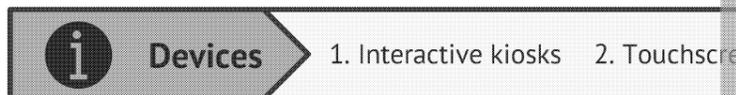
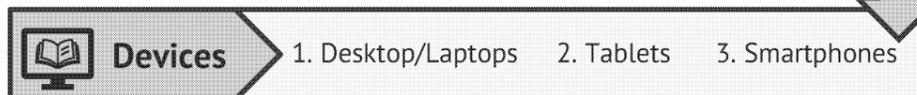
TYPES OF INTERACTIVE DIGITAL MEDIA

Interactive digital media engages users through active participation and personalisation, providing immediate feedback and global reach. It spans from early computer games to today's immersive technologies, driven by advancements in hardware and software. The acceleration of digital interaction is fuelled by improved Internet accessibility, the influence of social media, and the heightened demand during the COVID-19 pandemic. As technology continues to evolve, interactive digital media's scope and impact are set to expand further, making it a critical area of interest for educators and learners alike.

	WEBSITES	MOBILE APPS
OVERVIEW		
PURPOSE		
KEY FEATURES		
AUDIENCE		
EXAMPLE		



	E-LEARNING PRODUCTS	INFORMATION POINTS
OVERVIEW		
PURPOSE		
KEY FEATURES		
AUDIENCE		
EXAMPLES		



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Complete the table by filling in the missing overview, purpose, key features, audience and examples for E-learning Products, Information Points, and Games.

Interactive digital media encompasses diverse types of content, including images, text, quizzes, layers, audio, animation, navigation, maps, video, tables, lists, and forms, each designed to engage users and enhance their experience through dynamic and multifaceted

Images

Text

Assets: Digital photographs, illustrations, icons, and graphic designs

Tools: Photo editing software, e.g. Adobe Photoshop, GIMP, and vector graphics tools, e.g. Adobe Illustrator

Assets: Text files, spreadsheets, and data sets

Tools: Word processors, e.g. Microsoft Word, text editors, and design software for typography, e.g. Adobe InDesign



Assets: Question banks, answer choices, and feedback messages

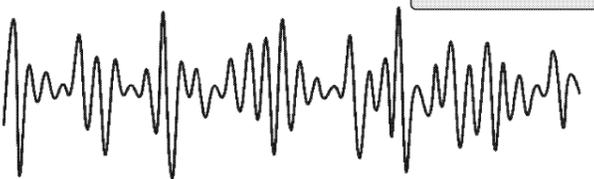
Audio

Animation

Navigation

Assets: Recorded sound clips, music tracks, voice-overs

Tools: Audio editing software, e.g. Audacity, Adobe Audition



Assets: Animated graphics, 3D models, character rigs

Tools: Animation software, e.g. Adobe Animate, Blender

Assets: Button graphics, icons

Video

Tables



Assets: Video footage, animations, special effects

Tools: Video editing software, e.g. Adobe Premiere Pro, Final Cut Pro

Assets: Data sets, table templates

Tools: Spreadsheet software, e.g. Microsoft Excel, web development tools, e.g. HTML/CSS

Assets: Written content, list style

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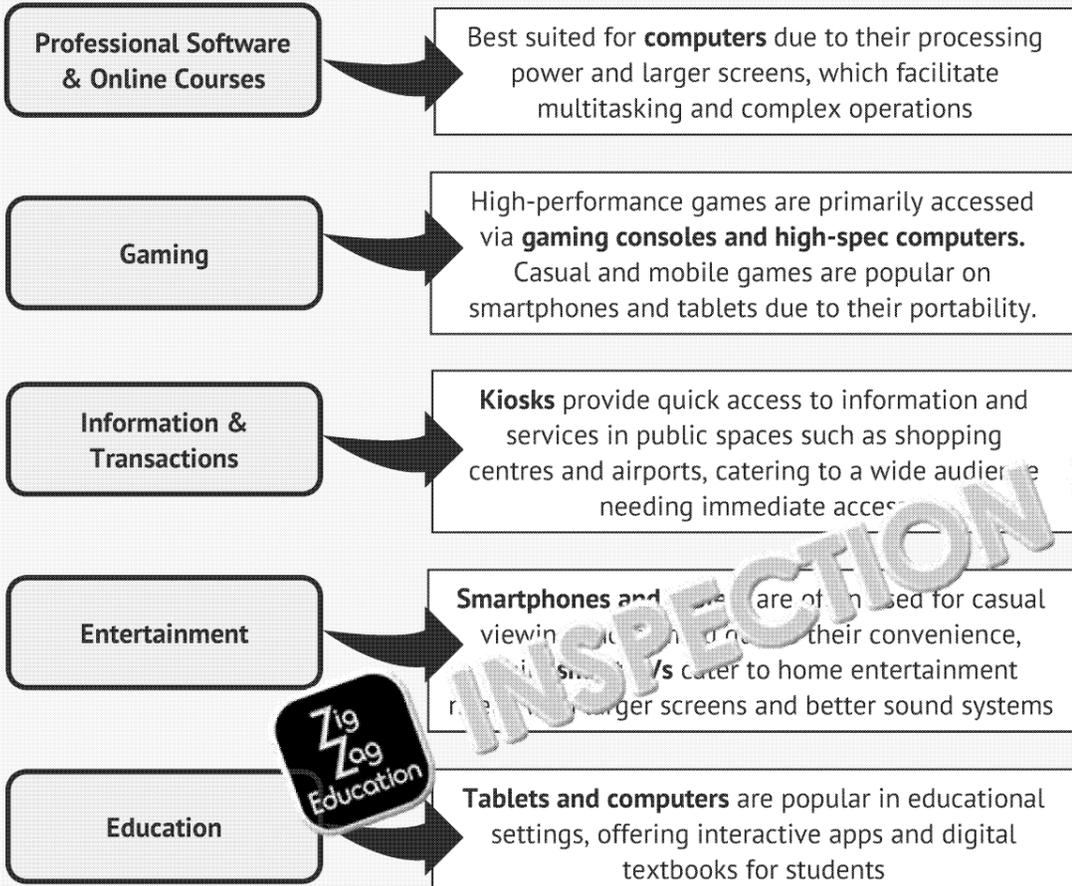
To fully appreciate the diverse types of content in interactive digital media, it is essential to understand the various hardware that supports these experiences. Each contributing unique capabilities and user interaction.

Complete devices list

	Computers <i>(Desktops and Laptops)</i>	Games Consoles	Kiosks	Ph <i>(Smart)</i>
USAGE				
AUDIENCE				
EXAMPLES				

Linking to Purpose and Audience

Different devices are chosen based on the specific needs and preferences of the audience and the purpose of the interactive digital media:



Choosing the right device ensures that the media product meets the audience needs and preferences.

Devices	
Interactive whiteboards	Allows teachers and students to interact with content.
VR/AR devices	Creates immersive experiences for learning and training.
Smart TVs	Large screen for watching educational content.
Digital cameras	Captures high-quality photos and videos for documentation.
Smartphones	Easy to carry and use anywhere.
Tablets	Bigger screen than a phone, portable.
Desktop computers	Powerful and reliable, ideal for complex tasks.
Laptops	Portable and powerful, great for on-the-go work.
Games consoles	Made for playing games, some offer educational content.

Methods of User Interaction

Keyboard/Buttons	Mouse/Joystick
1.	1.
2.	2.

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FEATURES & CONVENTIONS OF INTERACTIVE DIGITAL MEDIA

User-friendly intuitive interfaces are easy to navigate and understand, enabling users to achieve goals with minimal effort.

Effective Graphical User Interface (GUI) Design

Involves creating and organising visual elements that enable users to interact with electronic devices or software applications using graphical icons and visual indicators, rather than text-based interfaces or commands. A well-designed GUI facilitates efficient and effective task completion, offering a more intuitive and engaging user experience.

Complete the table and provide a description and an example of each convention.

	Example
Consistent Layout	
Colour Scheme	
House Style	
Typography Selection	
White Space	

Suitability for target audience

tailoring content design and functionality to meet the specific needs and abilities of the intended users, thereby enhancing the overall experience and engagement.

Interface and Interaction Style

involves the various methods that users employ to engage with digital media and software applications.

	Description	Advantages
Click	Traditional mouse clicks are precise but less intuitive on touch devices	Precision, familiar to most users
Touch / Gesture	Intuitive for mobile and tablet users, enabling actions like pinch-to-zoom or swipe	Natural and intuitive, suitable for mobile devices
Voice Control	Ideal for hands-free interaction, useful in smart homes or for accessibility	Hands-free, accessible for users with physical limitations
Motion / Movement	Used in gaming or virtual reality, allowing for immersive experiences	Immersive, intuitive in 3D environments
Drag / Drop	Useful for organising items, such as file management or graphic design	Intuitive for tasks involving movement of items
Feedback / Closure	Providing immediate feedback, e.g. button changes colour when clicked, assures users their actions have been registered	Reinforces user actions, enhances user confidence

Accessibility



How does accessibility in digital media promote inclusivity, and what are some of the key features that ensure content is accessible to users with different abilities?



Selecting appropriate interfaces and interaction styles

Selecting appropriate interfaces and interaction styles that digital media is intuitive, efficient and accessible to the needs and preferences of different users.

For **accessibility focused applications**, voice control and flexible input methods (keyboard, mouse, touch) are essential

For a professional **desktop application**, a click-based interface with drag/drop features may be more appropriate

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1.3
5

HARDWARE & SOFTWARE USED TO CREATE INTERACTIVE DIGITAL MEDIA PRODUCTS

HARDWARE

Computers (Desktop and Laptop)	Graphic Tablets	Digital Cameras
+ <input type="text"/>	+ <input type="text"/>	+ <input type="text"/>
- <input type="text"/>	- <input type="text"/>	- <input type="text"/>
Microphones	Headsets	Games Consoles
+ <input type="text"/>	+ <input type="text"/>	+ <input type="text"/>
- <input type="text"/>	- <input type="text"/>	- <input type="text"/>



Complete a fact file for each type of software listed (web authoring, app creation, kiosk interface and authoring tools)

Why?

Positive Impacts:	Negative Impacts:
<input type="text"/>	<input type="text"/>

How?

How?

Examples

WEB AUTHORING SOFTWARE

APP CREATION SOFTWARE

Ex

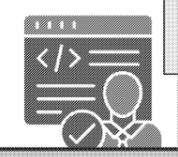
Why?

How?

KIOSK INTERFACE SOFTWARE

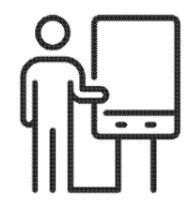
AUTHORING TOOLS

Examples



Examples

Positive Impacts:	Negative Impacts:
<input type="text"/>	<input type="text"/>



Positive Impacts:	Negative Impacts:
<input type="text"/>	<input type="text"/>

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Pre-production documentation provides a detailed blueprint that guides the design and development process to ensure user-centred interactive digital media

Screen Designs

The process of creating a visual representation of the interface that users will interact with.

Mock-ups: Detailed visual models that represent the final look and feel of the interface

Prototypes: Interactive versions of the screen designs to test functionality

	Includes	Purpose
Mock-ups	High-quality graphics: Detailed images, colours, typography and layout elements that mirror the finished product	<ul style="list-style-type: none"> ➊ Visual representation: Provides a realistic preview of the interface to help stakeholders understand the design vision ➋ Communication tool: Allows for review and feedback on visual aspects before development begins, ensuring alignment with client and user expectations
	Static content: Text, images, icons, and other non-interactive elements	
Prototypes	Interactive elements: Clickable buttons, menus, and links that mimic the behaviour of the final product	<ul style="list-style-type: none"> ➊ Functionality testing: Allows designers to test and refine the usability and functionality of the interface before full development
	User flows: Simulated navigation paths to test how users interact with different parts of the interface	<ul style="list-style-type: none"> ➋ User testing: Facilitates user testing to gather feedback on interactions and overall user experience, enabling iterative improvements



What are wireframes?

Fill in the fact file for wireframes and storyboard

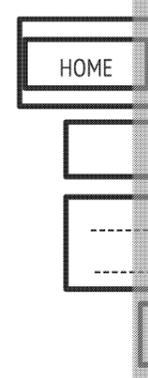
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Final Documentation

Includes all the information needed for the deployment, maintenance and future updates of the product, ensuring smooth adoption and ongoing support



- ✓ User manuals
- ✓ Technical documentation
- ✓ Maintenance plans



Colour Schemes

The colour scheme is a crucial aspect of any digital media project. It involves selecting colours that enhance usability and aesthetics.

Primary Colours	Secondary Colours
These are the dominant colours used for the main elements of the interface, such as backgrounds, primary buttons, headers, and key navigation areas	These are supportive colours used for accents and highlights, such as secondary buttons, links, subheadings and decorative elements

Primary colours establish the overall look and feel of the interface and are often associated with the brand's core identity

Secondary colours complement the primary colours, adding variety and helping to guide the user's attention to specific areas without overwhelming the design

Accessibility:

- ★ Ensuring sufficient contrast between text and background for users with visual impairments
- ★ Designing with colour-blind friendly combinations that are difficult to distinguish (such as red and green) or using patterns or textures to differentiate elements when necessary



Importance of colour schemes



Text includes all written content within the interface

Font choice → Readable and appropriate for the content, e.g. sans-serif font

Font size → Large enough for readability on various devices

Hierarchy → Use of headings, subheadings, and body text to organise information

Layout → The arrangement of visual elements on the screen

	Purpose	Importance
Grid System	Ensures a structured and balanced design	The grid system provides a framework that helps designers create a logical and visually appealing layout. A balanced design makes the interface easier to navigate.
Alignment	Consistent alignment for a clean and professional look	Proper alignment improves the readability of text and the coherence of the interface, making it easier for users to understand and interact with.
White Space	Adequate spacing around elements to avoid clutter	By strategically using white space, designers can draw attention to key elements, such as to-action buttons or important information, and improve the user's focus.

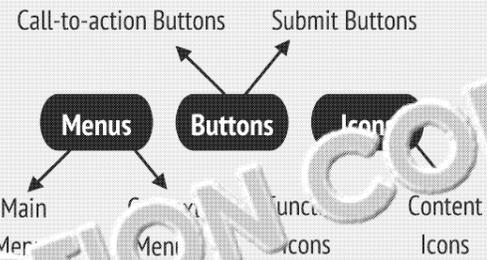
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Graphical User Interface (GUI)

Interactive components that users engage with to interact with digital media. These elements are crucial for creating an intuitive and user-friendly experience.



- 1 **Enhances User Engagement:** GUI elements make interactions more engaging and intuitive through the use of visual cues.
- 2 **Enhances Usability:** GUI elements are easy to understand and use, catering to users with varying technical skills.
- 3 **Improves Accessibility:** GUI elements can be designed to accommodate users with disabilities by adhering to accessibility standards, such as including descriptive text for screen readers and enabling keyboard navigation.



Microsoft Word features a ribbon interface with icons representing various functions (bold, italic, save), buttons for actions (file save, print), and context menus providing relevant options based on the selected text or object.



Facebook utilises a combination of main menus, context menus, buttons, and icons. The main navigation bar includes icons for home, profile, and settings. CTA buttons such as Like, Comment and Share encourage user interaction.

Effective navigation
Well-designed navigation

	Definition
Menus	
Links	
Breadcrumbs	

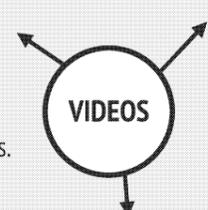
Interaction with Media Elements

Interactive digital media often incorporates various multimedia elements such as images, videos and animations. These elements play a significant role in enhancing user engagement and providing a richer experience.

Quality: Images used in interactive digital media should be of high quality to ensure clarity and professionalism. High-resolution images and provide a better user experience.

Quality and Accessibility: Videos should be of high quality, with clear audio and visuals. They should include subtitles and transcripts to ensure accessibility for all users.

Purpose: Videos can serve various purposes, such as educational content, advertisements, and product demonstrations. They can convey information dynamically and effectively.



Relevance: Images should be directly related to the content they accompany. Relevant images enhance the understanding of the content and make the digital media more appealing.

Optimisation: Images should be optimised for fast loading times without compromising quality, ensuring they do not slow down the website or application.

Loading Time: Videos should be optimised to load quickly and play smoothly without buffering, providing a seamless user experience.

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PRE-PRODUCTION DOCUMENTATION & PLANNING

Types of Content for Interactive Digital Media Products

In interactive digital media products, various types of content are utilised to create an engaging and effective user experience. Each type of content serves a specific purpose and needs careful planning to ensure it meets client requirements and enhances the overall functionality and aesthetics of the product.

For each of the products, you will need to create a plan for the content necessary to create the product.

TYPE: AUDIO

- ★ **Music:** Background tracks that set the tone, mood, or theme of the content
- ★ **Sound Effects:** Short audio clips that provide feedback, emphasise actions, or enhance realism
- ★ **Voice-overs:** Narration or dialogue that guides users, explains content, or adds personality

Example Scenario:
Developing an Interactive Adventure App for Mobile

Audio Requirements:	Considerations:
1.	→
2.	→
3.	→

TYPE: IMAGES

- ★ **Photographs:** High-resolution photographs that provide visual appeal, illustrate concepts, or capture key moments
- ★ **Illustrations:** Custom or stock illustrations that add a unique style, help explain complex ideas or support branding
- ★ **Icons:** Small, simple images that represent actions, objects or ideas, often used for buttons, menus, and visual cues

Example Scenario:
Creating an Educational Website for Children Aged 6–8

Image Requirements:	Considerations:
1.	→
2.	→
3.	→

Types and Uses of Interactive Elements in Digital Media

Interactive elements in digital media come in various forms, each serving specific purposes and requiring careful planning and consideration to ensure user engagement and functionality across different platforms and applications.

Category	Types	Uses	Considerations
Animation	2D animation, 3D animation, motion graphics	Engage users, explain complex ideas, enhance visual appeal	Smoothness and quality (e.g., MP4), platform compatibility
Text	Headings, subheadings, body text, captions, alt text	Convey information, provide instructions, enhance accessibility	Readability and font choice, conciseness, screen reader compatibility
Tables	Data tables, comparison charts	Organise information, present data clearly, compare options	Layout and readability, use of headings
Lists	Bullet points, numbered lists	Summarise information, highlight key points, organise content	Clear structure and font style, content hierarchy
Forms	Input fields, submission buttons	Collect user data, facilitate interactions, enable user inputs	Usability and accessibility, error handling, validation
Navigational Buttons	Links, menus	Guide user navigation, enhance usability, structure content access	Intuitive design, consistency, clear labeling
Maps	Interactive maps, static maps	Show locations, provide geographical context, enhance user experience	Accuracy and detail, content relevance
Quizzes	Questions (multiple-choice, true/false, open-ended), interactive elements	Engage users, assess knowledge, provide interactive learning	Clarity and relevance, feedback, user experience
Layers	Overlapping content, interactive layers	Add depth to design, provide additional information, enhance interactivity	Layering order and visibility, design, device compatibility

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1.4 PRE-PRODUCTION DOCUMENTATION & PLANNING

9 Pre-production documentation and planning are crucial steps in developing interactive digital media. They help ensure that the final product meets user needs and involves creating detailed navigation diagrams, wireframes, and prototypes. This planning ensures a logical structure, intuitive content flow, and consistent user experience.

Tips when planning interactive elements and controls

- ☑ **User-centred design:** Focus on user needs and usability when planning interactive features.
- ☑ **Consistency:** Ensure that similar actions have similar controls across the application to reduce the learning curve.
- ☑ **Accessibility:** Design interactive elements to be accessible to all users, e.g. providing alternative text for multimedia.

Planning the navigation between scenes

Navigation diagrams, also known as sitemaps, serve as a blueprint for the structure of an interactive application, website or multimedia project. They visually represent how different pages or scenes are interconnected, providing a clear overview of the application's architecture. This helps designers, developers and stakeholders understand the flow and organisation of the content, ensuring that the user experience is intuitive and logical.

Components:

Nodes	Links
Each node in the diagram represents a specific page or scene within the application. Nodes can be depicted using shapes such as rectangles or circles, each labelled with the name of the page or scene, e.g. 'Home', 'About Us', 'Product Page'.	Lines or arrows between nodes indicate the connections or pathways between these pages or scenes. These lines show how a user can navigate from one page to another, e.g. clicking a button on the home page to go to the 'Contact' page.

Steps to creating navigation diagrams:

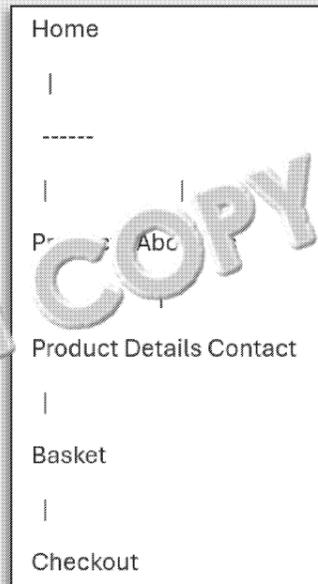
1 Identify Key Pages/Scenes: Begin by listing all the primary pages or scenes users will interact with. This includes the main pages that form the core of your application and any sub-pages that provide additional content or functionality.

Example: For an e-commerce website, key pages might include Home, Products, Product Details, Basket, Checkout, About Us and Contact.

2 Establish Relationships: Determine how these pages are connected logically. Consider the user's journey and how they will navigate through the application.

Example: A user might start at the Home page, then go to Products, view a Product Details page, add an item to Basket and proceed to Checkout. Additionally, they might visit the About Us or Contact pages from the Home page.

3 Draw the Diagram: Use shapes to represent each page or scene. Rectangles or circles work well for this purpose. Label each shape with the name of the page or scene it represents. Draw lines or arrows to connect the shapes, creating the pathways between them. Use arrows to indicate the direction of navigation, e.g. from Home to Products. Organise the diagram hierarchically, placing main pages at the top and sub-pages below them, connected by lines to show their relationships.



Planning interactive elements

Effective planning of interactive elements ensures a consistent and intuitive user experience.

Buttons	
Forms	
Media Elements	
Animations	

Example: Imagine you are designing an interactive feature for a website. Consider the following steps:

- 1 Identify user's actions:** List the actions users will perform, such as account, log in, watch, etc.
- 2 Define controls:** Map user actions to specific controls: Buttons → Browse, Add to Cart; Forms → Registration, Login; Media elements → Product Images; Animations → Smooth Transitions.
- 3 Create wireframes:** Create wireframes for each screen. Wireframes show the layout and placement of controls. Show how users will interact with the controls. Review wireframes with stakeholders. This iterative process ensures the design is user-centred and functional.

Planning responses to interaction (feedback/closure)

- ☑ **Feedback mechanisms:** Design visual or auditory cues that provide feedback, e.g. a button might change colour when clicked.
- ☑ **Closure:** Ensure users know when a task is complete. This could be a confirmation message after submitting a form or completing a purchase.
- ☑ **Error handling:** Plan for potential errors and guide users to resolve them, e.g. highlight missing fields on an incomplete form.

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When creating interactive digital media, sourcing suitable assets is a critical step. This includes finding images, videos, sounds and other digital elements that can enhance your project.

Sourcing suitable assets

Technique	Description	Example Tools
Advanced searching	Using tools and techniques to search for assets	<ul style="list-style-type: none"> Search engines, e.g. Google, Bing Advanced filters, e.g. 'high-resolution landscape images' Filters, e.g. date, size, colour, usage rights, file type Boolean operators, e.g. AND, OR, NOT
Search by feature/property	Searching for assets based on specific characteristics	<ul style="list-style-type: none"> Resolution, e.g. high-resolution images or videos Aspect ratio, e.g. 16:9 for widescreen layouts Format, e.g. PNG, MP4 Length/size, e.g. 30-second audio clip
Search by licence	Finding assets with appropriate usage rights	<ul style="list-style-type: none"> Creative Commons (licences with various terms), e.g. CC BY (must credit the creator), CC BY-SA (can be shared and adapted if the same licence is maintained) Royalty-free (no recurring fees) Public domain (no restrictions) Stock libraries, e.g. Getty Images, Shutterstock
Libraries	Sources for pre-made digital assets	<ul style="list-style-type: none"> Stock media websites, e.g. Shutterstock Free libraries, e.g. Pixabay Academic and government resources, e.g. BBC Archives

Why are clear and consistent naming conventions important when organising and managing digital media assets, and how do they contribute to the efficiency of a project life cycle? ▶

Naming

Example: Creating an Educational Interactive History Website

Overview: You are a student working on an educational interactive website about the history of World War II. You will be working with various media elements such as images, videos and audio clips to engage users and provide an interactive learning experience.

Steps to identify and select pre-made digital media content...

1

Goal: Ensure the content is relevant to the theme and purpose of your project.

Action: Search for images, videos, and audio clips specifically related to World War II events, key figures, battles, and artefacts.

Example: You find a collection of public domain images from the National Archives showing significant events like the D-Day landing and wartime propaganda posters. These images directly relate to the content of your website.

2

QUALITY

Goal: Use high-resolution and well-produced media to improve the overall quality of your project.

Action: Filter search results to show only high-resolution images and HD videos.

Example: You discover high-resolution photographs from the Imperial War Museums' digital collection. These images are clear, detailed and professionally produced, enhancing the visual appeal of your website.

3

Goal: Check the licensing and usage rights of the assets.

Action: Review the terms of use to ensure they are appropriate for educational purposes.

Example: While browsing a collection, you find that it is available under Attribution-NonCommercial, allowing you to use the source and do not

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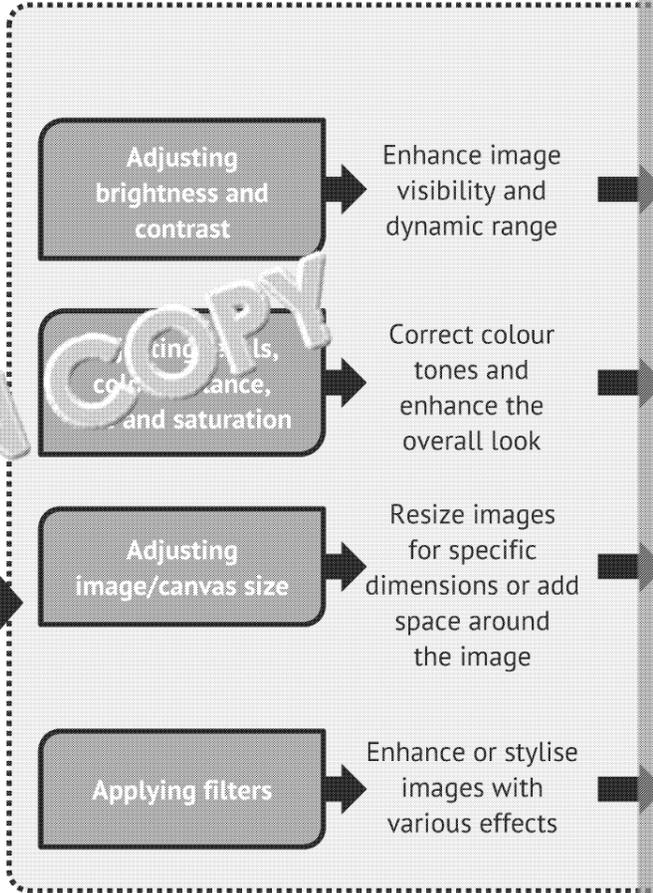
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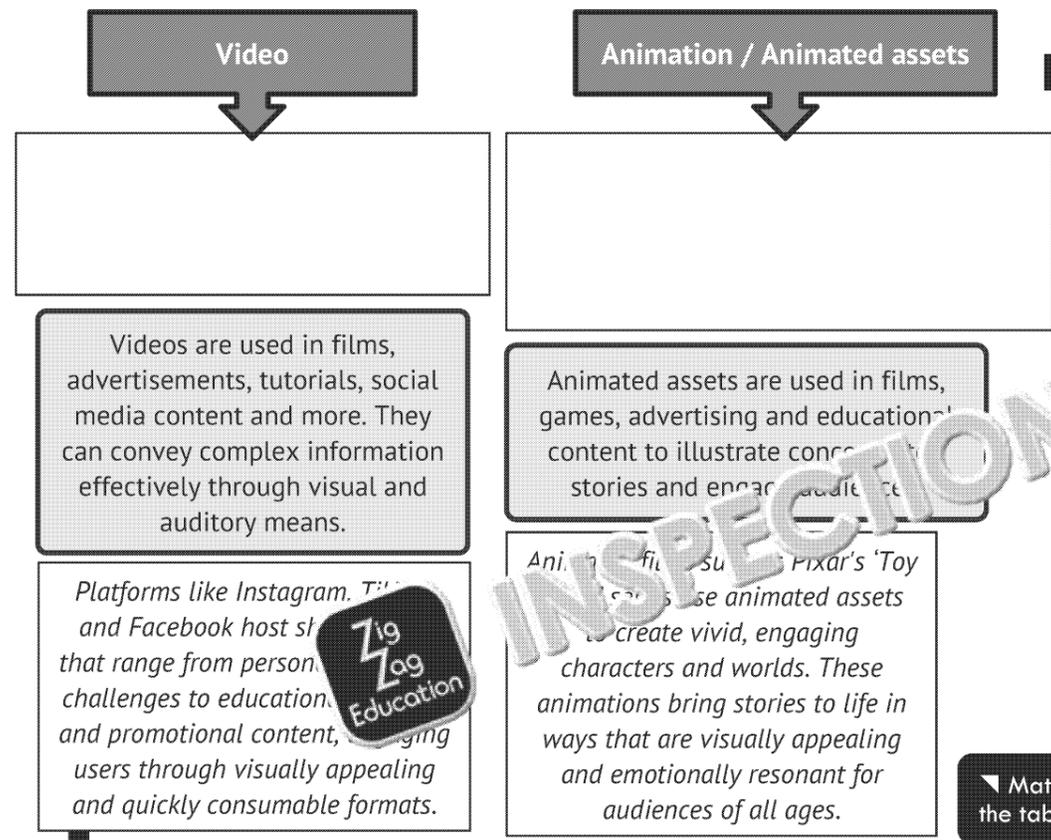
STATIC IMAGE, MOVING IMAGE & AUDIO ASSETS

Static image types:

	Vector images	Bitmap images
Definition	Composed of paths defined by mathematical expressions, creating lines, shapes and curves. Can be scaled indefinitely without loss of quality.	Made up of individual pixels, each with its own colour, forming an image.
Common formats	SVG, AI, EPS, PDF	JPG, PNG, GIF, BMP, TIFF
Use cases	Logos, icons, illustrations, graphic design, branding, digital marketing	Photographs, detailed artwork, web graphics requiring specific pixel dimensions
Advantages	Infinite scalability, smaller file sizes for simple graphics, easy editing and manipulation	Excellent for detailed and complex images, widely supported across various platforms
Disadvantages	Less effective for complex, detailed images like photographs	Quality degrades when scaled up, larger file sizes for high-resolution images



Moving image asset types:



▶ Give definitions for the moving image/audio asset types using the space provided. ▲

Techniques to repurpose audio/moving image

Ensuring consistent volume levels	Adjusting Volume
Removing audio/video clips	Cutting
Adjust video playback speed without altering the audio pitch	Speed
Edit sections of the audio recording / video footage easily	Extending
Shortening the start and/or end of an audio / a video clip	Cutting
Making the audio/video longer by looping segments or adding additional content	Extending

▼ Match each term below with its corresponding purpose in audio or video editing using the table provided: • Adjusting Volume, • Cutting, • Extending, • Speed

Creating and repurposing video assets

- ★ Use the **import** function to bring video footage into the editing software. Organise clips into bins or folders for easy access.
- ★ Drag and drop video clips onto the timeline. Arrange them in the desired order to create a coherent **sequence**. Use multiple tracks.

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Interactive asset types:

Interactive assets are essential in digital media for enhancing user engagement and providing dynamic content. Examples include:

1. **Diagrams:** Visual representations that allow users to interact with different parts to get more information. Use layering, hyperlinks, or actions to create interactive areas.
2. **Maps:** Enable exploration of geographic information through zooming, clicking, and real-time data. Embed interactive maps using map APIs and enhance them with pop-ups, and layers.
3. **Buttons / Rollover Buttons:** Change appearance or display additional content when hovered over or clicked. Use CSS for styling and JavaScript for functionality like changing colour, showing tooltips, or triggering animations.
4. **Navigation Bars:** Help users navigate a website easily, often with drop-down menus and dynamic elements. Use CSS for styling and JavaScript for interactivity. Frameworks like Bootstrap for responsiveness and interactivity.
5. **Forms:** Collect user input through elements like text fields, radio buttons, checkboxes, and drop-down menus. Use HTML for structure, CSS for styling, and JavaScript for validation and feedback.
6. **Dynamic Elements:** Engage users with dynamic elements with animations, clickable content, and transitions to engage users.

A _____ featuring the latest student film projects, with eye-catching visuals and brief descriptions will immediately capture visitor attention with dynamic content.

The _____ uses Bootstrap classes for a responsive design. The navbar-expand-lg class makes the navbar expand and collapse based on the screen size.

A _____ introducing the media club, its mission, and the unique aspects of the club provides a quick overview for new visitors.

A simple, intuitive _____ for prospective members to apply, including fields for personal information and areas of interest streamlines the process of joining the club. The **required** attribute ensures that these fields must be filled out before the form can be submitted.

A _____ of film thumbnails that expand with descriptions and links to individual project pages when hovered over, enhancing user experience.

A list of how-to articles and video tutorials on topics such as scriptwriting, filming techniques, and editing provides _____ in an engaging format.



A _____ featuring various film-making equipment with interactive pop-ups offering usage tips and sample footage.

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TECHNICAL SKILLS TO CREATE INTERACTIVE DIGITAL MEDIA 1

▼ Provide a definition for



Product Folder Management

When creating interactive digital media, organising **product folders** effectively is crucial.

	Description	Example
Root Folder	Main directory for a project	Project_Name
Styles Folder	Includes all styling files such as CSS	Project_Name_styles.css
Subfolders	Inside the root folder for different types of content	Project_Name_documents Project_Name_images Project_Name_media Project_Name_scripts Project_Name_styles
Scripts Folder	Stores all scripts and code files, such as JavaScript or Python scripts	scripts main.js utils.js
Images Folder	Stores all image assets such as icons and backgrounds	images backgrounds buttons icons
Media Folder	Contains all multimedia content such as audio and video files	media audio video
Document Folder	Stores documents such as meeting notes and project briefs	documents meeting_notes project_brief

▲ Match each folder type with its appropriate **description** and **example**.

Naming Conventions

Using clear and consistent naming conventions is essential for effective file management.

	Description	Example
Use lower-case letters	Consistency in using lower-case letters helps in avoiding confusion between different systems that might be case-sensitive	main.css <i>instead of</i> Main.css
Use dates and versions	When dealing with multiple versions or updates, include dates or version numbers in a standardised format	main_v1.0.js, main_v1.1.js, <i>or</i> main_20230618.js
Avoid generic names	Avoid names like final, new, or updated as they don't provide clear information about the file's content or purpose	<i>Instead of</i> final_project.docx, <i>use</i> project_brief_v2.docx
Be specific and concise	Names should be as concise as possible while still being descriptive	btn_submit_hover.png <i>is better than</i> button_when_user_hovers_submit.png

ADVANTAGE: Well-organised folders make it **easier to find and manage** files, **reducing time spent searching** for items

DISADVANTAGE: Setting up a detailed folder structure and naming conventions can be **time-consuming** at the start of a project

i A horizontal or vertical **navigation bar** typically contains the main hyperlinks to the primary sections

What are **triggers** and **behaviours** in web development, and how do they function? Provide at least **three** examples of triggers and **three** examples of behaviours.

Triggers and Behaviours

Triggers and behaviours are mechanisms that respond to user actions on a web page.

	Description
Triggers	
Behaviours	

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2.2
14

TECHNICAL SKILLS TO CREATE INTERACTIVE DIGITAL MEDIA 2

Key Elements in Master Pages / Templates

Foundational tools in web design and digital media creation, ensuring a consistent and professional look across all pages by standardising elements such as layout, house style, and navigational structure.

▼ In the space provided, design a wireframe template for the home page of an e-commerce website and label it with the key features.



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Creating Master Pages / Templates

Use master pages to consistently repeat design and layout elements across multiple pages. This allows you to create and update these elements in one place, ensuring a unified appearance throughout your media product.

- **Design a Layout:** Start with a wireframe or sketch of the layout. Define the position of fixed elements like the header and footer.
- **Apply House Style:** Use your chosen colour scheme, fonts, and design elements consistently across the layout
- **Define Editable Regions:** Mark areas where page-specific content will be placed
- **Create the Template:** Use web development tools or software, e.g. Adobe Dreamweaver, to build the template

Inserting Content

Inserting content into interactive digital media involves strategically placing text, images, multimedia, and interactive elements to effectively convey information and engage users, ensuring a rich and dynamic experience.

Inserting Content into Interactive Digital Media Products:

- **Text:** Use HTML tags for structure such as <h1>, <p>, , <table>
- **Images:** Use the tag with appropriate attributes for size and alt text
- **Multimedia:** Embed multimedia using HTML5 tags like <audio>, <video>, and <iframe>

Fixed content



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Editable content

▲ Explain the difference between **fixed content** and **editable content** in a website or digital media product. Provide at least **two examples** of fixed content and **two examples** of editable content.

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Native File Formats

During the creation of interactive digital media products such as websites, mobile apps, digital maps, e-learning products, information points, and games, it is crucial to save your work in the native file format of the software you are using. This approach maintains the full range of editing capabilities and ensures that all elements, assets and features remain editable.

Interactive Digital Media Product	Native Software	Native File Formats
Websites	Adobe Dreamweaver	
	Visual Studio	
Mobile Apps	Android Studio	
	Xcode	
Digital Maps	ArcGIS	
E-learning Products	Adobe Captivate	
Information Points	Kiosk Software (various)	
Games	Unity	

Fill in the table with the appropriate **native file formats**. ▲

Why is **version control** important in project management, and how does it benefit teams when using systems such as Git? Provide **three specific advantages**. ▼

Version Control

- 1
- 2
- 3

Platform-independent File Formats

Why is it important to use **platform-independent file formats** when developing interactive digital media products? Give an example of these formats for websites, mobile apps, and e-learning products. ▼

Interactive Digital Media Product	Example of Platform-independent File Formats
Websites	
Mobile Apps	
E-learning Products	

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Methods of Testing and Checking

Using organised steps to make sure a product works properly, performs well, and gives users a good experience while meeting the required goals or expectations.

The test plan explains the goals, resources, schedule, and scope of testing. It includes:

- Purpose of testing
- Features to be tested
- Testing tasks
- Team responsibilities
- Test environment set-up
- Risks and backup plans

Using the space provided, put together a **test plan** for a mobile app game.▶



Test plan for a mobile app game	
Purpose	
Features to be tested	Features not to be tested
Personnel	Tools
Schedule	Deliverables
Success criteria	
Risks and mitigation	
Testing environments and configuration	

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TECHNIQUES TO TEST/CHECK THE TECHNICAL PROPERTIES OF INTERACTIVE DIGITAL MEDIA

Methods of Testing and Checking

Success criteria: Define the benchmarks for passing the tests, ensuring all features work correctly and that the game performs reliably, offers a smooth user experience, and meets accessibility guidelines.

Example: Success criteria for a mobile app game

- ☑ All required features (e.g. user registration, gameplay, in-game purchases) are present
- ☑ No major bugs affect gameplay or user progression
- ☑ Works across a range of operating systems (OS)
- ☑ The game responds correctly to user inputs
- ☑ Correct error messages are shown for unexpected user actions
- ☑ Game, level, and asset loading times are optimized to reduce user wait times
- ☑ The game maintains a consistent frame rate (e.g. 30fps or 60fps) on all devices
- ☑ The game avoids excessive battery drain
- ☑ The game handles transitions between screens smoothly
- ☑ The interface is easy to navigate, visually appealing, and user-friendly
- ☑ Game mechanics and features keep players interested and encourage ongoing interaction
- ☑ The game provides clear and immediate feedback to user actions
- ☑ The game runs smoothly without crashes or freezes during normal use
- ☑ Beta testers and users report high satisfaction with the game's features and overall experience

Accessibility compliance: Ensure the game meets standards for users with disabilities.

Visual	Audio	Motor	Cognitive	Satisfaction
Options such as colour-blind mode and high-contrast text/UI improve visibility for users with visual impairments	Subtitles or captions are available for all audio content, and volume controls are easy to access	The game supports alternative input methods (e.g. switch controls) and offers customisable control options	Clear and concise instructions, simplified modes, and features assist users with cognitive disabilities	The game meets accessibility standards (e.g. WCAG) to ensure inclusivity for all players

Functionality tests: Ensure smooth navigation and issue-free access.

Navigation Elements	Interactivity Elements	Input and Output Checks
Ensure all navigation elements (menus, buttons) work properly, allowing users to move through the application smoothly	<ul style="list-style-type: none"> ★ Ensure buttons trigger the correct action ★ Check forms can be filled, submitted, and processed properly ★ Check interactivity elements respond as expected 	<ul style="list-style-type: none"> ★ Ensure inputs are processed correctly and display expected outputs ★ Ensure user data is saved and retrieved accurately

Performance of multimedia: Ensure multimedia assets load quickly and provide a high-quality user experience.

Loading Times	Quality & Performance
Ensure multimedia loads quickly to prevent user frustration: <ul style="list-style-type: none"> → Images: ⌚ 1-2 seconds → Animations: ⌚ 1 second → Videos: ⌚ 2-3 seconds → Mobile Apps: ⌚ 1-3 seconds → Audio: ⌚ 1-2 seconds → In-game: ⌚ 1 second 	<ul style="list-style-type: none"> 🖼️ Image Quality: Images display correctly and are not pixelated or distorted 🎥 Video Playback: Videos play smoothly without buffering or lag 🎵 Audio Quality: Audio files play without distortion or drops in quality

Testi

What are s media? Provid

Navigation t

- All Naviga
- Uncommo

Key Areas to Te

- ✓ Main navig
- ✓ Submenus
- ✓ Internal li
- ✓ Buttons an
- ✓ Breadcrum
- ✓ Pagination
- ✓ Skipping s
- ✓ Back and f
- ✓ Random cl
- ✓ Deep linki
- ✓ Simultane

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Throttled bar

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TECHNIQUES TO REVIEW THE FITNESS FOR PURPOSE OF INTERACTIVE DIGITAL MEDIA

Ensuring that interactive digital media meets client requirements in key areas, including client requirements, target audience, and user experience.

Suitability of Content

Ensure content is relevant, appropriate, and matches the audience needs.

- Techniques:**
- ✓ Check text for correct grammar, clarity, relevance, accuracy, and tone
 - ✓ Check images for good resolution, relevance, appropriateness, and copyright issues
 - ✓ Check videos are good quality, relevant, the right length, and accessible

A **design review** checks whether a product's design meets requirements for user experience. It identifies any issues with usability, appearance, function, or accessibility before development continues.

Creating Interactive Digital Media

has both advantages and challenges that...

Advantages
Engages users with interactive elements like quizzes and polls.
Personalised to improve user satisfaction and retention.
Offers immediate feedback, boosting learning and engagement.

Suitability for Client Requirements

Ensure the final product meets all features and functions specified in the client's brief.

Importance?

Client Satisfaction

Meeting client requirements ensures the product meets their needs, leading to higher satisfaction and more future business opportunities.

Project Success

A product that meets the client's requirements is more likely to succeed, as it solves the specific problems or needs of the project.

Avoids Scope Creep

Following the client's brief prevents scope creep, where extra features or changes cause delays and higher costs.

Quality Assurance

Ensuring all features work correctly is key to quality assurance, reducing defects and issues after launch.

Accountability

Delivering what was agreed shows professionalism and builds trust with the client.

Scope of work (SOW) outlines the tasks, deliverables, and timelines based on the client's requirements.

A **client brief** is a document that outlines the client's needs, expectations, and requirements for the project.

User acceptance testing (UAT) is testing done by the end user to ensure the product meets their needs.

Techniques

Conduct a review session with the client

Schedule a meeting with the client to review the final product, demonstrate how it meets the requirements, and collect feedback on any issues or discrepancies.

Interactive presentation:

Let the client explore the app, test features, and perform tasks to experience how it works.

Feature demonstration:

Create a demo that shows key features and how they meet the client's requirements.

What are the **advantages and disadvantages** of strictly adhering to a **client brief** in a project? Consider each aspect in the table below. ▼

Aspect	Advantages	Disadvantages
Client Satisfaction		
Project Success		
Avoids Scope Creep		
Quality Assurance		
Accountability and Trust		
Cost Management		
Documentation and Clarity		
Risk Management		

What are the **advantages and disadvantages** of strictly adhering to a **client brief** in a project? Consider each aspect in the table below. ▼

Advantages
Engagement
User Retention
Market Success
User Experience
Brand Reputation
Tailored Content and Features
Competitive Edge
Feedback and Improvement

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Constraints Limiting the Effectiveness of Interactive Digital Media

Interactive digital media has revolutionised how we consume content, engage with brands, and interact with technology. However, creating high-quality interactive digital media comes with its own set of challenges. Several constraints can limit the effectiveness of these media projects, impacting the final output's depth, quality, and user engagement. These constraints span across various areas such as time, budget, hardware, software and skills. Understanding these limitations is essential for setting realistic expectations, planning effectively, and delivering a successful project.

Interactive Digital Media Improvements

When you are part of a digital media design team, how do you ensure **consistency** across your project to create an **engaging user experience**? Consider how you could improve the aspects given in the table to make the design more effective. How would these improvements help the final product stand out?

What are some common constraints that can limit the effectiveness of interactive digital media? How do these constraints impact the final product's depth, quality, and user engagement?

Improvements for Consistency	
Aspect	Improvement
Colour Schemes	
Typography	
Visual Motifs	
Logo Usage	
Voice and Tone	
Imagery	
Animations	
Interactions	

Impact of successful interactive digital media

Suggest **two advantages** of successful interactive digital media's impact.

Improvements for Engagement	
Aspect	Improvement
Search Functionality	
Breadcrumbs	
Interactive Media	
Engaging Buttons	

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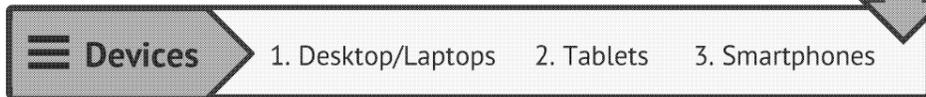
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TYPES OF INTERACTIVE DIGITAL MEDIA

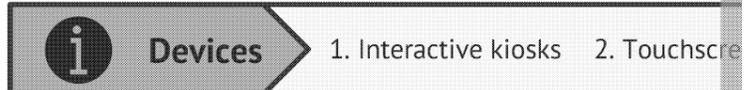
1

Interactive digital media engages users through active participation and personalisation, providing immediate feedback and global reach. It spans from early computer games to today's immersive technologies, driven by advancements in hardware and software. The success of interactive digital media is fuelled by improved Internet accessibility, the influence of social media, and the heightened demand during the COVID-19 pandemic. As technology continues to evolve, interactive digital media's scope and impact are set to expand further, making it a critical area of focus for educators and businesses alike.

	WEBSITES	MOBILE APPS
OVERVIEW	Websites are collections of interlinked web pages accessible over the Internet. They are designed to provide information, services, entertainment, and interactive experiences to users.	Mobile apps are software applications designed specifically for use on mobile devices such as smartphones and tablets. They provide various tools, and entertainment options.
PURPOSE	<ol style="list-style-type: none"> 1. Provide information 2. Communication 3. _____ 	<ol style="list-style-type: none"> 1. Convenience 2. Entertainment 3. Media streaming 4. _____
KEY FEATURES	<ul style="list-style-type: none"> • Navigation menus guiding users through different sections • Multimedia content (images, text, videos, and audio) • Interactive elements (forms, buttons, quizzes) • _____ 	<ul style="list-style-type: none"> • User-friendly interface (optimised for touch controls on screens) • Push notifications (alerts and updates sent directly to users) • Offline functionality (work without an Internet connection) • _____
AUDIENCE	<ul style="list-style-type: none"> ★ General Public: Websites often target a broad audience, providing information and services to a wide range of users ★ _____ 	<ul style="list-style-type: none"> ★ Mobile Users: People who use smartphones and tablets for various tasks, including communication, entertainment, and productivity ★ _____
EXAMPLE	_____	_____



	E-LEARNING PRODUCTS	INFORMATION POINTS
OVERVIEW	E-learning products are digital platforms or software designed for educational purposes, providing interactive learning experiences.	Information points are digital kiosks or screens located in public spaces, providing users with information, directions, and services.
PURPOSE	<ol style="list-style-type: none"> 1. Education 2. _____ 	<ol style="list-style-type: none"> 1. Self-service 2. _____
KEY FEATURES	<ul style="list-style-type: none"> • Interactive lessons (multimedia content, quizzes, and exercises) • Progress tracking • Collaborative tools (discussion forums, chat, and social media integration) • _____ 	<ul style="list-style-type: none"> • Touchscreen interface for easy navigation and interaction • Location-based information providing real-time updates and directions • Multilingual support (options for different languages) • _____
AUDIENCE	<ul style="list-style-type: none"> ★ Students and Educators: Used in classrooms, online learning platforms, and educational institutions, as well as by parents and trainers ★ _____ 	<ul style="list-style-type: none"> ★ Public and Visitors: Typically used in public spaces such as museums, shopping centres, and transportation hubs ★ _____
EXAMPLES	_____	_____



▲ Above is a partially completed table that lists various aspects of three digital products: **E-learning Products**, **Information Points**, and **Games**. Fill in the missing information based on your knowledge or research.

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Interactive digital media encompasses diverse types of content, including images, text, quizzes, layers, audio, animation, navigation, maps, video, tables, lists, and forms, each designed to engage users and enhance their experience through dynamic and multifaceted

Images

Text

- **Information:** Provide essential information and instructions
- **Navigation:** Guide users through the interface via visual cues and menus
- **Communication:** Convey messages clearly and effectively

Assets: Images, icons, text files.

Tools: Word processors, e.g. Microsoft Word, text editors, and design software for typography, e.g. Adobe InDesign

- **Engagement:** Engage users with interactive questions and feedback
- **Assessment:** Test user knowledge or gather opinions

Assets: Question banks, answer choices, feedback messages

Assets:



Tools:



Audio

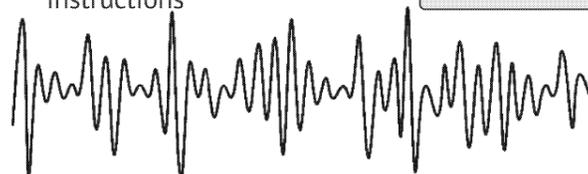
Animation

Navigation

- **Atmosphere:** Set mood or atmosphere with background music
- **Information:** Provide information through voice-overs or podcasts
- **Accessibility:** Aid accessibility with audio descriptions and instructions

Assets: Recorded sound clips, music tracks, voice-overs

Tools: Audio editing software, e.g. Audacity, Adobe Audition



- **Interaction:** Provide interactive experiences and feedback, e.g. hover effects
- **Explanation:** Simplify complex ideas through animated diagrams and characters
- **Engagement:** Enhance user engagement with moving visuals

Assets: Animated graphics, 3D models, character rigs

Tools: Animation software, e.g. Adobe Animate, Blender

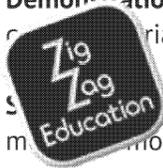
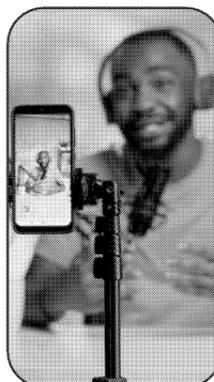
Assets:

Video

Tables

Lists

- **Engagement:** Capture and retain audience attention through dynamic content
- **Demonstration:** Show how to use products or services
- **Storytelling:** Convey stories and messages more effectively



Assets: Video footage, animations, special effects

Tools: Video editing software, e.g. Adobe Premiere Pro, Final Cut Pro

Assets:

Tools:

Assets: Written content, list style

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To fully appreciate the diverse types of content in interactive digital media, it is essential to understand the various hardware that supports these experiences, each contributing unique capabilities and user interaction.

	Computers (Desktops and Laptops)	Games Consoles	Kiosks	Ph (Smart
USAGE	Browsing the web, streaming videos, playing games, and using software applications		Information dissemination, self-service transactions, navigation	
AUDIENCE		Games, tr		General us profession
EXAMPLES	Websites, online courses, professional software, video games			Mobile app platforms,

Linking to Purpose and Audience

Different devices are chosen based on the specific needs and preferences of the audience and the purpose of the interactive digital media:

Match each device to the correct purpose and target audience. ▼

Professional Software & Online Courses

High-performance games are primarily accessed via **gaming consoles and high-spec computers**. Casual and mobile games are popular on smartphones and tablets due to their portability.

Gaming

Smartphones and tablets are often used for casual viewing and gaming due to their convenience, while **smart TVs** cater to home entertainment needs with larger screens and better sound systems

Information & Transactions

Tablets and computers are popular in educational settings, offering interactive apps and digital textbooks for students

Entertainment

Best suited for **workstations** due to their processing power and large screens, which facilitate multitasking and complex operations

Education

Kiosks provide quick access to information and services in public spaces such as shopping centres and airports, catering to a wide audience needing immediate access

Choosing the right device ensures that the media product meets the audience needs

Devices	
Interactive whiteboards	Allows teachers and students
VR/AR devices	Creates immersive experie
Smart TVs	Large screen for watching
Digital cameras	Captures high-quality phot
Smartphones	Easy to carry and use anyw
Tablets	Bigger screen than a pho
Desktop computers	Powerful and reliable, idea
Laptops	Portable and powerful, gre
Games consoles	Made for playing games, s

Methods of User Interaction

Keyboard/Buttons

Users interact by pressing keys or buttons to input commands or navigate through digital media

Typing in a search bar or using arrow keys to move a character in a game

Mouse/Joy

Allows users to click and drag

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FEATURES & CONVENTIONS OF INTERACTIVE DIGITAL MEDIA

User-friendly intuitive interfaces are easy to navigate and understand, enabling users to achieve goals with minimal effort.

Suitability for target audience

tailoring content, design and functionality to meet the specific preferences and abilities of the intended users, enhancing the overall experience and engagement.

Effective Graphical User Interface (GUI) Design

Involves creating and organising visual elements that enable users to interact with electronic devices or software applications using graphical icons and visual indicators, rather than text-based interfaces or commands. A well-designed GUI facilitates efficient and effective task completion, offering a more intuitive and engaging user experience.

	Description	Example
Consistent Layout	Consistency in the placement of elements helps users predict what they are thinking.	Navigation icons at the top of the screen
Colour Scheme	A cohesive colour scheme enhances readability and user confidence.	Using complementary colours for text and background improves readability.
House Style	A consistent house style (logo, fonts and colours) maintains brand identity across different media.	Using the same logo, font styles and colour schemes across a website, brochures and social media profiles.
Typography Selection	Choosing legible fonts with appropriate sizes ensures text readability.	Sans-serif fonts (e.g. Arial and Helvetica) are often easier to read on screens.
White Space	Adequate white space (or negative space) around elements prevents clutter and improves focus on key content.	Leaving space around images and text blocks in a web page layout to avoid a cluttered appearance and make content stand out.

Match each of the input methods with the correct interface advantage or technical limitation.

- Voice Control
- Drag / Drop
- Feedback / Closure
- Click
- Touch / Gesture
- Motion / Movement

Interface and Interaction

Involves the various methods that users use to interact with and navigate through digital media.

Description	Advantages
Providing immediate feedback, e.g. button changes colour when clicked, assures users their actions have been registered.	Reinforces actions, enhances user confidence.
Traditional mouse clicks are precise but less intuitive on touch devices.	Precision, familiar to most users.
Ideal for hands-free interaction, useful in smart homes or for accessibility.	Hands-free accessible for users with physical limitations.
Intuitive for mobile and tablet users, enabling actions like pinch-to-zoom or swipe.	Natural and intuitive, suitable for mobile devices.
Useful for organising items, such as file management or graphic design.	Intuitive for users involving movement of items.
Used in gaming or virtual reality, allowing for immersive experiences.	Immersive and intuitive in virtual environments.

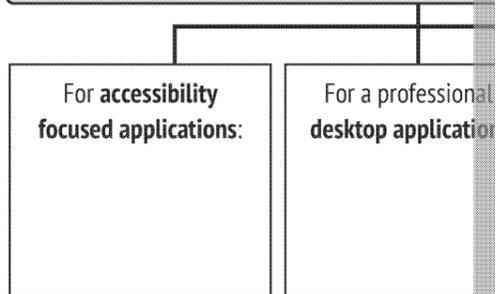
Define accessibility in digital media and describe the key features that ensure content is accessible to all users.

Accessibility Definition:

- **Alternative Text:**
- **Text Readability:**
- **Captions:**
- **Contrasting Colour:**
- **Resizable Text:**
- **Flexible Input:**
- **Mobile Device Accessibility:**
- **Screen Size and Orientation Adjustments:**

Selecting appropriate interfaces and interaction methods

Selecting appropriate interfaces and interaction methods that are intuitive, efficient and accessible, catering to the needs of the target audience.



▲ Select the most appropriate interaction application from the following list: • voice input methods (keyboard, mouse, touch interface) • drag/drop features, • touch

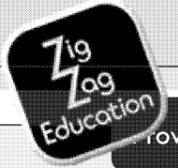
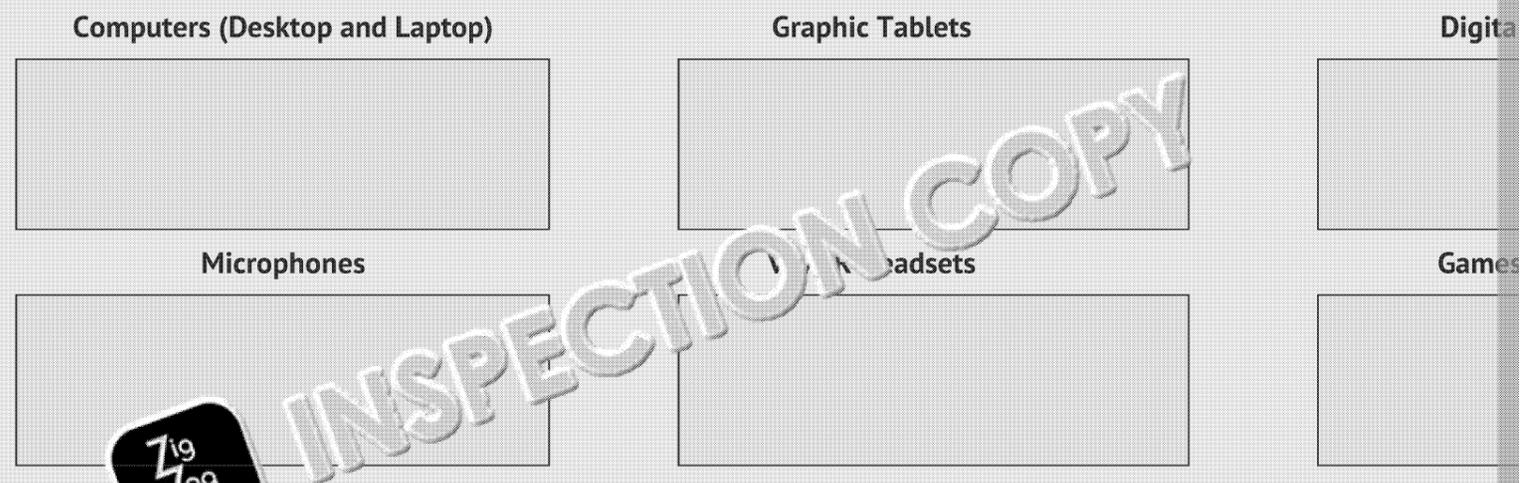
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HARDWARE & SOFTWARE USED TO CREATE INTERACTIVE DIGITAL MEDIA PRODUCTS

HARDWARE



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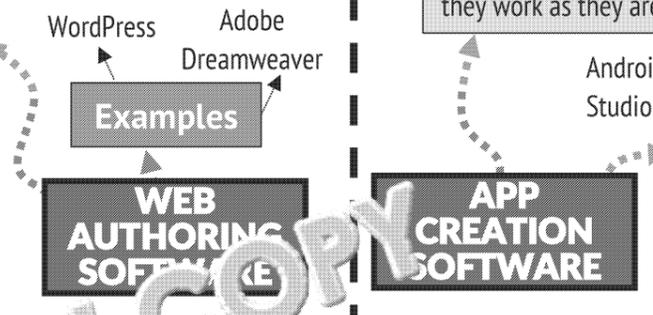
Provide **one positive** and **one negative** impact for the following digital content creation tools (web authoring software, app creation software, kiosk interface software, and authoring tools)

Why?
Ease of Use: Visual editors make it accessible for beginners and efficient for experienced designers
Efficiency: Streamlines the design process with pre-built templates and components
Cross-platform Compatibility: Ensures websites are responsive and work across different devices and browsers

Positive Impacts:	Negative Impacts:

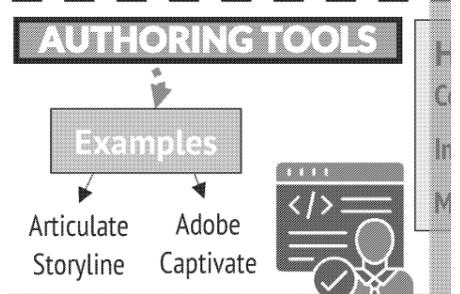
How?
Development Environment: Provides development environments (IDEs) for coding
User Interface Design: Includes drag and drop elements and components
Testing: Test apps on different devices to ensure they work as they are supposed to

How?
Design and Layout: Create website layouts using a visual interface with drag and drop elements, customisable styles, and create responsive designs that work on different devices
Coding Support: These tools often include code editors with syntax highlighting, auto-completion, and debugging tools, making it easier to write HTML, CSS and JavaScript
Integration: They provide integration with other web technologies and services, such as databases, e-commerce platforms, and content management systems

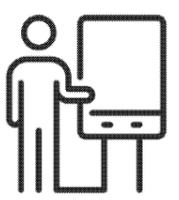


Why?
User Engagement: Creates intuitive and engaging interfaces for public use
Customisation: Offers flexibility to design interfaces tailored to specific user needs and environments
Reliability: Ensures the kiosk remains functional and secure for continuous use

How?
Interface Design: Focuses on the creation of user-friendly interfaces for touchscreens
Security Features: Provides tools to secure the kiosk, restricting user access to specific functionalities
Content Management: Allows remote management and updating of kiosk content



Positive Impacts:	Negative Impacts:



Examples: KioWare, Intuiface

Positive Impacts:	Negative Impacts:

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Pre-production documentation provides a detailed blueprint that guides the design and development process to ensure user-centred interactive digital media

Screen Designs

The process of creating a visual representation of the interface that users will interact with.

Mock-ups: Detailed visual models that represent the final look and feel of the interface

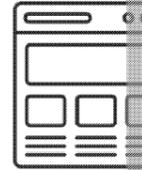
Prototypes: Interactive versions of the screen designs to test functionality

	Includes	Purpose
Mock-ups	High-quality graphics: Detailed images, colours, typography and layout elements that mirror the finished product	<ul style="list-style-type: none"> ➊ Visual representation: Provides a realistic preview of the interface to help stakeholders understand the design vision ➋ Communication tool: Allows for review and feedback on visual aspects before development begins, ensuring alignment with client and user expectations
	Static content: Text, images, icons, and other non-interactive elements	
Prototypes	Interactive elements: Clickable buttons, menus, and links that mimic the behaviour of the final product	<ul style="list-style-type: none"> ➊ Functionality testing: Allows designers to test and refine the usability and functionality of the interface before full development
	User flows: Simulated navigation paths to test how users interact with different parts of the interface	<ul style="list-style-type: none"> ➋ User testing: Facilitates user testing to gather feedback on interactions and overall user experience, enabling iterative improvements



What are wireframes?

Wireframes are simple black-and-white layouts that outline the structure and functionality of a digital interface. Wireframes focus on structure and layout rather than design details.



What are the key components of wireframes?

- Rectangles and lines representing different elements such as headers, text blocks, and images
- Annotations describe the functionality and interaction of each element

What is a key benefit of wireframes?

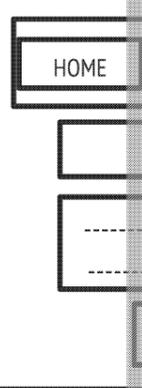
Allows for early feedback and iteration on the basic layout and structure

Final Documentation

Includes all the information needed for the deployment, maintenance and future updates of the product, ensuring smooth adoption and ongoing support



- ✓ User manuals
- ✓ Technical documentation
- ✓ Maintenance plans



Colour Schemes

The colour scheme is a crucial aspect of any digital media project. It involves selecting colours that enhance usability and aesthetics.

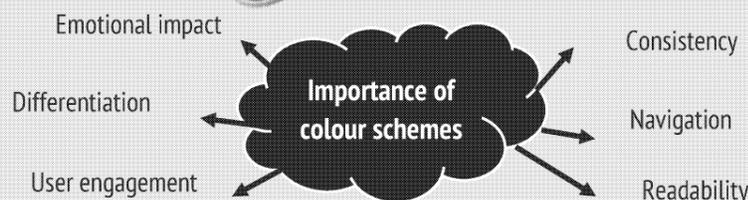
Primary Colours	Secondary Colours
These are the dominant colours used for the main elements of the interface, such as backgrounds, primary buttons, headers, and key navigation areas	These are supportive colours used for accents and highlights, such as secondary buttons, links, subheadings and decorative elements

Primary colours establish the overall look and feel of the interface and are often associated with the brand's core identity

Secondary colours complement the primary colours, adding variety and helping to guide the user's attention to specific areas without overwhelming the design

Accessibility:

- ★ Ensuring sufficient **contrast** between text and background colours is essential for readability, especially for users with visual impairments
- ★ Designing with **colour-blind friendly** combinations that are difficult to distinguish (such as red and green) and using patterns or textures to differentiate elements when necessary



Text includes all written content within the interface

Font choice → Readable and appropriate for the content, e.g. sans-serif fonts

Font size → Large enough for readability on various devices

Hierarchy → Use of headings, sub-headings, and body text to organise information

Layout is the arrangement of visual elements on the screen

	Purpose	Importance
White Space	Ensures a structured and balanced design	The grid system provides a structure that helps content in a more appealing manner throughout the interface
Alignment	Adequate spacing around elements to avoid clutter	By strategically placing elements such as text or important content, designers can focus user attention
Grid System	Consistent alignment for a clean and professional look	Proper alignment improves the readability of text and the visual structure, helping users to process information more effectively

▲ Match each layout design principle to its corresponding purpose and importance

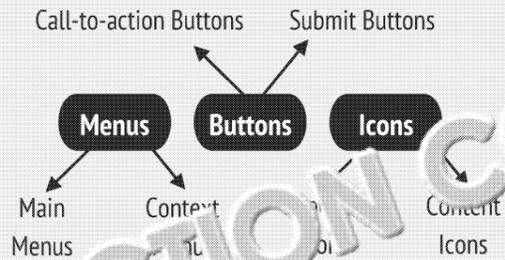
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Graphical User Interface (GUI)

Interactive components that users engage with to interact with digital media. These elements are crucial for creating an intuitive and user-friendly experience.



- 1 **Enhances User Engagement:** GUI elements that are engaging and intuitive through the use of visuals
- 2 **Enhances Usability:** GUI elements are easy to understand and use, catering to users with varying technical skills
- 3 **Improves Accessibility:** GUI elements can be designed to accommodate users with disabilities by adhering to accessibility standards, such as including descriptive text for screen readers and enabling keyboard navigation



Microsoft Word features a ribbon interface with icons representing various functions (bold, italic, save), buttons for actions (file save, print), and context menus providing relevant options based on the selected text or object



Facebook utilises a combination of main menus, context menus, buttons, and icons. The main navigation bar includes icons for home, profile, and settings. CTA buttons such as Like, Comment and Share encourage user interaction.

Below is a partially completed task is to fill in the missing in

	Definition
Menus	Effective navigation Well-designed navigation Menus are essential navigation components that provide a list of options or commands
Links	Links, or hyperlinks connect users to different sections within the same page, other pages within the site, or external websites
Breadcrumbs	

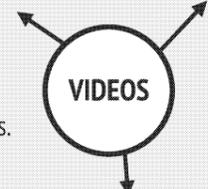
Interaction with Media Elements

Interactive digital media often incorporates various multimedia elements such as images, videos and animations. These elements play a significant role in enhancing user engagement and providing a better user experience.

Quality: Images used in interactive digital media should be of high quality to ensure clarity and professionalism. High-resolution images are preferred and provide a better user experience.

Quality and Accessibility: Videos should be of high quality, with clear audio and visuals. They should include subtitles and transcripts to ensure accessibility for all users.

Purpose: Videos can serve various purposes, such as educational content, advertisements, and product demonstrations. They can convey information dynamically and effectively.



Relevance: Images should be directly related to the content they accompany. Relevant images enhance the understanding of the content and make the digital media more appealing.

Optimisation: Images should be optimised for fast loading times without compromising quality, ensuring they do not slow down the website or application.

Loading Time: Videos should be optimised to load quickly and play smoothly without buffering, providing a seamless user experience.

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PRE-PRODUCTION DOCUMENTATION & PLANNING

Types of Content for Interactive Digital Media Products

In interactive digital media products, various types of content are utilised to create an engaging and effective user experience. Each type of content has a specific purpose and needs careful planning to ensure it meets client requirements and enhances the overall functionality and aesthetics of the product.

TYPE: AUDIO

- ★ **Music:** Background tracks that set the tone, mood, or theme of the content
- ★ **Sound Effects:** Short audio clips that provide feedback, emphasise actions, or enhance realism
- ★ **Voice-overs:** Narration or dialogue that guides users, explains content, or adds personality

Example Scenario:

Developing an Interactive Adventure Game

Audio Requirements	Considerations:
<ol style="list-style-type: none"> Background Music: Set the tone and enhance immersion with varied tracks matching different game scenarios Sound Effects: Provide feedback and realism through short audio clips triggered by user actions Voice-overs: Narrate the storyline, guide quests and add personality to characters with clear, engaging dialogue 	<p>Audio Quality and Clarity: Use high-quality recording equipment and professional voice actors to ensure clarity and authenticity</p> <p>→ File Format: Use MP3 for background music and voice-overs for a balance of quality and file size; WAV for high-quality sound effects</p> <p>→ Appropriate Length and File Size: Keep background music loops short and seamless, sound effects brief, and voice-over segments concise to maintain engagement and ensure smooth gameplay</p>

TYPE: IMAGES

- ★ **Photos:** High-resolution images that provide visual appeal, illustrate concepts, and capture moments
- ★ **Illustrations:** Custom or stock illustrations that add a unique style, help explain ideas or support branding
- ★ **Icons:** Small, simple images that represent actions, objects or ideas, often used for buttons, menus, and visual cues

Example Scenario:

Creating an Educational Website for Children Aged 6-8

Image Requirements:	Considerations:
<ol style="list-style-type: none"> Photos: High-quality photos of children engaging in various educational activities to create an inviting and relatable atmosphere Illustrations: Custom illustrations of characters and scenes that align with the site's educational content and branding, making learning fun and engaging Icons: Simple, intuitive icons for navigation (home, back, next), interactive elements (quizzes, games) and actions (download, print) 	<p>→ Resolution and Quality: Ensure images are high-resolution to maintain clarity on all devices; specific attention to the large screens often used in classrooms</p> <p>→ File Format: Using JPEG for photos and PNG for transparent illustrations and icons to ensure scalability and compatibility</p> <p>→ Size and Scalability: Implement responsive images to cater to different screen sizes, ensuring quick load times without compromising quality</p>

Using your knowledge or research, fill in the missing information in the table. Complete the details for each category's types, usage, considerations, and an example scenario where needed.

Types and Uses of Interactive Elements in Digital Media

Interactive elements in digital media come in various forms, each serving specific purposes and requiring careful planning and consideration to ensure user engagement and functionality across different platforms and applications.

Category	Types	Usage	Considerations
Animation	2D animation, 3D animation, motion graphics		
Text		Convey information, provide instructions, enhance accessibility	Readability and font choice, conciseness, spacing
Tables	Data presentation, comparison charts		Layout and readability, use of headings
Forms	Input fields, submission buttons	Summarise information, highlight key points, organise content	Clear structure and font style, content alignment
Navigational Buttons		Guide user navigation, enhance usability, structure content access	
Maps		Show locations, provide geographical context, enhance user experience	
Quizzes		Engage users, assess knowledge, provide interactive learning	
Layers			Layering order and visibility, design, device compatibility

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1.4 PRE-PRODUCTION DOCUMENTATION & PLANNING

9

Pre-production documentation and planning are crucial steps in developing interactive digital media. They help ensure that the final product involves creating detailed navigation diagrams, wireframes, and prototypes. This planning ensures a logical structure, intuitive con

Tips when planning interactive elements and controls

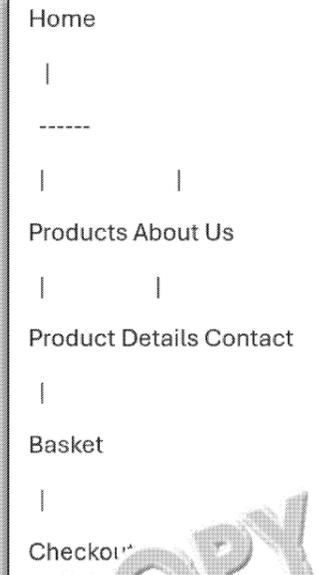
- ☑ **User-centred design:** Focus on user needs and usability when planning interactive features.
- ☑ **Consistency:** Ensure that similar actions have similar controls across the application to reduce the learning curve.
- ☑ **Accessibility:** Design interactive elements to be accessible to all users, e.g. providing alt text for multimedia.

Planning the navigation between screens

Navigation diagrams, also known as sitemaps, serve as a visual representation of the structure of an interactive application, website or multimedia project. They visually represent how different pages or scenes are interconnected, providing a clear overview of the application's architecture. This helps designers, developers and stakeholders understand the flow and organisation of the content, ensuring that the user experience is intuitive and logical.

Components:

Nodes	Links
Each node in the diagram represents a specific page or scene within the application. Nodes can be depicted using shapes such as rectangles or circles, each labelled with the name of the page or scene, e.g. 'Home', 'About Us', 'Product Page'.	Lines or arrows between nodes indicate the connections or pathways between these pages or scenes. These lines show how a user can navigate from one page to another, e.g. clicking a button on the home page to go to the 'Contact' page.



Steps to creating navigation diagrams:

Step A: Represent each page or scene with shapes, label them, and connect them with arrows to show how users will navigate. Organise the diagram by placing main pages at the top and linking sub-pages beneath them.

Step B: List all the primary pages or scenes that users will interact with, including main pages and sub-pages that provide additional content or functionality.

Step C: Identify the logical connections between these pages and consider how users will navigate through the application.

Correct Order: Step , followed by Step , the step

Above are the steps to create a **navigation diagram** for a digital application. The steps are currently out of order. Write the correct order in the boxes provided to show how to properly design and illustrate the relationships between key pages or scenes.

Planning interactive elements

Effective planning of

Buttons	Buttons enable users to trigger interactive actions, such as navigating between pages or triggering a search.
Forms	Forms collect user input, typically through text boxes, radio buttons, and dropdown menus.
Media Elements	Media elements like video clips and audio files can be used to engage users. Interactive elements like sliders and dropdown menus allow users to adjust settings.
Animations	Animations provide visual feedback and enhance the user experience through transitions between screens and interactive elements.

Example: Imagine you are designing an online shopping application. List some interactive features:

- 1 **Identify user's actions:** Account creation, login, watching videos, etc.
- 2 **Define controls:** Buttons → Browse, Add to Cart, Checkout; Forms → Registration, Search; Media elements → Product images, Videos; Animations → Smooth transitions, Loading indicators.

3 **Create wireframes:** Sketch the layout of each screen. Wireframes show how users will interact with the application. Review wireframes with stakeholders. This iterative process ensures the design meets user needs.

Planning responses to interaction (feedback/closure)

- ☑ **Feedback mechanisms:** Design visual or auditory cues that provide feedback, e.g. a button might change colour when clicked.
- ☑ **Closure:** Ensure users know when a task is complete. This could be a confirmation message after submitting a form or completing a purchase.
- ☑ **Error handling:** Plan for potential errors and guide users to resolve them, e.g. highlight missing fields on an incomplete form.

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2.1

TECHNIQUES FOR SOURCING SUITABLE ASSETS

10

When creating interactive digital media, sourcing suitable assets is a critical step. This includes finding images, videos, sounds and other digital elements that can enhance your project.

Fill in the missing file format for each of the descriptions. ▶

Sourcing suitable assets

Technique	Description	Example Tools
Advanced searching	Using tools and techniques to search for assets	<ul style="list-style-type: none"> Search engines, e.g. Google, Bing Advanced search operators, e.g. 'high-resolution landscape images' Filters, e.g. date, size, colour, usage rights, file type Boolean operators, e.g. AND, OR, NOT
Search by feature/property	Searching for assets based on specific characteristics	<ul style="list-style-type: none"> Resolution, e.g. high-resolution images or videos Aspect ratio, e.g. 16:9 for widescreen layouts Format, e.g. PNG, MP4 Length/size, e.g. 30-second audio clip
Search by licence	Finding assets with appropriate usage rights	<ul style="list-style-type: none"> Creative Commons (licences with various terms), e.g. CC BY (must credit the creator), CC BY-SA (can be shared and adapted if the same licence is maintained) Royalty-free (no recurring fees) Public domain (no restrictions) Stock libraries, e.g. Getty Images, Shutterstock
Libraries	Sources for pre-made digital assets	<ul style="list-style-type: none"> Stock media websites, e.g. Shutterstock Free libraries, e.g. Pixabay Academic and government resources, e.g. BBC Archives

Suggest three key principles for creating effective naming conventions for digital media files. ▶

Naming Conventions

Example: Creating an Educational Interactive History Website

Overview: You are a student working on an educational interactive website about the history of World War II. You will be working with various media elements such as images, videos and audio clips to engage users and provide an interactive learning experience.

Steps to identify and select pre-made digital media content...

1

GOAL: Ensure the content aligns with the theme and purpose of your project.

Action: Search for images, videos, and audio clips specifically related to World War II events, key figures, battles, and artefacts.

Example: You find a collection of public domain images from the National Archives showing significant events like the D-Day landing and wartime propaganda posters. These images directly relate to the content of your website.

2

QUALITY

Goal: Use high-resolution and well-produced media to improve the overall quality of your project.

Action: Filter search results to show only high-resolution images and HD videos.

Example: You discover high-resolution photographs from the Imperial War Museums' digital collection. These images are clear, detailed and professionally produced, enhancing the visual appeal of your website.

3

Goal: Check the licensing and usage rights of the assets.

Action: Review the terms of use to ensure they are appropriate for educational purposes.

Example: While browsing a collection, you find an image that is available under a Creative Commons Attribution-NonCommercial license, allowing you to use it while crediting the source and not for profit.

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STATIC IMAGE, MOVING IMAGE & AUDIO ASSETS

Static image types:

True or False: Vector images are composed of individual pixels, each with its own colour value.

True or False: JPEG, PNG and GIF are common formats for bitmap images.

True or False: Vector images are ideal for logos and icons because they can be scaled infinitely without losing quality.

True or False: Bitmap images are known for their infinite scalability.

True or False: The quality of bitmap images degrades as they are scaled up.

True or False: Vector images are ideal for displaying complex, detailed images like photographs.

True or False: Bitmap images are ideal for text-based graphics where scalability is important.

True or False: SVG, AI and EPS are common formats for vector images.

True or False: Bitmap images, such as JPEG and PNG, are well-suited for use in detailed artwork and web graphics requiring specific pixel dimensions.

True or False: Vector images are widely supported across various platforms, making them ideal for detailed artwork and web graphics.

◀ Read the following statements about vector and bitmap images and decide whether they are **true** or **false**.

Complete the techniques using these words: *background, brightness, cloning, colour, filters, retouching, transform*

Adjusting and contrast

Enhance image visibility and dynamic range

Adjusting balance, hue and saturation

Correct colour tones and enhance the overall look

Adjusting image/canvas

Resize images for specific dimensions or add space around the image

Applying

Enhance or stylise images with various effects

Moving image asset types:

Video

Video refers to recorded moving visual images that can be played back at varying speeds. It includes formats such as MP4, AVI and MOV.

Videos are used in films, advertisements, tutorials, social media content and more. They can convey complex information effectively through visual and auditory means.

Platforms like Instagram and Facebook host videos that range from personal vlogs to educational challenges to educational and promotional content, engaging users through visually appealing and quickly consumable formats.

Animation / Animated assets

Animation involves creating the illusion of movement by displaying a series of images or frames. These can be 2D animations, like cartoons, or 3D animations, like computer-generated imagery (CGI).

Animated assets are used in films, games, advertising and educational content to illustrate concepts, tell stories and engage audiences.

Examples of 3D animated assets seen as Pixar's 'Toy Story' bring stories to life in ways that are visually appealing and emotionally resonant for audiences of all ages.

Techniques to repurpose audio/moving image

Adjusting Volume	Ensure consistent volume levels
Cloning	Remove audio/video clips
Speed / Pitch	Adjust video playback speed without altering the audio pitch
Tempo	
Splitting	Edit sections of the audio recording / video footage easily
Trimming	Shortening the start and/or end of an audio / a video clip
Extending	Making the audio/video longer by looping segments or adding additional content

Creating and repurposing video assets

- ★ Use the **import** function to bring video footage into the editing software. Organise clips into bins or folders for easy access.
- ★ Drag and drop video clips onto the timeline. Arrange them in the desired order to create a coherent **sequence**. Use multiple tracks.

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Interactive asset types:

Interactive assets are essential in digital media for enhancing user engagement and providing dynamic content.

Examples include:

1. **Diagrams:** Visual representations that allow users to interact with different parts to get more information. Use layering, hyperlinks, or actions to create interactive areas.
2. **Maps:** Enable exploration of geographic information through zooming, clicking, and real-time data. Embed interactive maps using map APIs and enhance them with pop-ups, and layers.
3. **Buttons / Rollover Buttons:** Change appearance or display additional content when hovered over or clicked. Use CSS for styling and JavaScript for functionality such as changing colour, showing tooltips, or triggering animations.
4. **Navigation Bars:** Help users navigate a website easily, often with drop-down menus and dynamic elements. Use CSS for styling and JavaScript for functionality. Frameworks like Bootstrap for responsiveness and interactivity.
5. **Forms:** Collect user input through elements like text fields, radio buttons, checkboxes, and drop-down menus. Use HTML for structure, CSS for styling, and JavaScript for validation and feedback.
6. **Interactive Elements:** Add dynamic elements with animations, clickable content, and transitions to engage users.

A _____ featuring the latest student film projects, with eye-catching visuals and brief descriptions will immediately capture visitor attention with dynamic content.

The _____ uses Bootstrap classes for a responsive design. The navbar-expand-lg class makes the navbar expand and collapse based on the screen size.

A _____ introducing the media club, its mission, and the unique aspects of the club provides a quick overview for new visitors.

A simple, intuitive _____ for prospective members to apply, including fields for personal information and areas of interest streamlines the process of joining the club. The **required** attribute ensures that these fields must be filled out before the form can be submitted.

A _____ film gallery that expand with details and links to individual projects when hovered over, enhancing user engagement.

A list of how-to articles and video tutorials on topics such as scriptwriting, filming techniques, and editing provides _____ in an engaging format.



A _____ featuring various film-making equipment with interactive pop-ups offering usage tips and sample footage.

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i A responsive design ensures navigation adapts to different screen sizes, e.g. a hamburger menu on smaller screens.

Product Folder Management

When creating interactive digital media, organising **product folders** effectively is crucial.

	Description	Example
Root Folder	Main directory for a project	Project_Name
Styles Folder	Includes all styling files, such as CSS	Project_Name/styles.css
Subfolders	Inside the root folder for different types of content	Project_Name/documents, images, media, scripts, styles
Scripts Folder	Stores all scripts and code files, such as JavaScript or Python scripts	scripts/main.js, scripts/utills.js
Images Folder	Stores all image assets such as icons and backgrounds	images/backgrounds, images/buttons, images/icons
Media Folder	Contains all multimedia content such as audio and video files	media/audio, media/video
Document Folder	Stores all project documentation, briefs and notes	Project_Name/documents/meeting_notes, project_brief

Naming Conventions

Using clear and consistent naming conventions is essential for effective file management.

Convention	Example
Consistency in using lower-case letters helps in avoiding confusion between different systems that might be case-sensitive	main.css <i>instead of Main.css</i>
Use dates and versions	main_v1.0.js, main_v1.1.js, or main_20230618.js
Avoid generic names	<i>Instead of final_project.docx, use project_brief_v2.docx</i>
Be specific and concise	btn_submit_hover.png is better than button_when_user_hovers_submit.png

ADVANTAGE:

DISADVANTAGE:

i A horizontal or vertical **navigation bar** typically contains the main hyperlinks to the primary sections

▲ Give one advantage and one disadvantage of product folder management.

Triggers and Behaviours

Triggers and behaviours are mechanisms that respond to user actions on a web page.

Triggers	Events or actions by users that initiate a specific response or behaviour on the web page	<ul style="list-style-type: none"> • Mouse clicks • Key presses • Mouse hover • Form submissions • Page load
Behaviours	The responses or actions performed by the web page in reaction to triggers	<ul style="list-style-type: none"> • Displaying a pop-up message • Changing an element's style • Moving an element • Updating content

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TECHNICAL SKILLS TO CREATE INTERACTIVE DIGITAL MEDIA 2

Key Elements in Master Pages / Templates

Foundational tools in web design and digital media creation, ensuring a consistent and professional look across all pages by standardising elements such as layout, house style, and navigational structure.

Complete the
accent, aligne

▼ In the space provided, design a wireframe template for the home page of an e-commerce website and label it with the key features: *header, navigation menu, content placeholder, footer*



Creating Master Pages / Templates

Use master pages to consistently repeat design and layout elements across multiple pages. This allows you to create and update these elements in one place, ensuring a unified appearance throughout your media product.

- **Design a Layout:** Start with a wireframe or sketch of the layout. Define the position of fixed elements like the header and footer.
- **Apply House Style:** Use your chosen colour scheme, fonts, and design elements consistently across the layout
- **Define Editable Regions:** Mark areas where page-specific content will be placed
- **Create the Template:** Use web development tools or software, e.g. Adobe Dreamweaver, to build the template

Inserting Content

Inserting content into interactive digital media involves strategically placing text, images, multimedia, and interactive elements to effectively convey information and engage users, ensuring a rich and dynamic experience.

Fixed content

refers to the elements of a website or digital media product that remain constant across all pages. These elements provide a consistent framework and ensure that essential information is always accessible to users.

Logos: The company or brand logo is usually placed in the header to maintain brand identity and provide a visual anchor

Navigation Bar: A consistent navigation bar across all pages allows users to easily move between different sections of the site

Contact Information: Key contact details such as phone numbers, email addresses, or social media links should be included for easy access

Legal Information: Terms and conditions, privacy policies, and copyright notices are commonly placed in the footer

Additional Navigation Links: Links to secondary pages, such as FAQs, site maps, and support pages, can also be included in the footer

Advertisements or Promotions: Fixed promotional banners or ads can be placed in sidebars

Widgets: Widgets for recent posts, popular content, or social media feeds can be fixed elements in the sidebar

Inserting Content into Interactive Digital Media Products:

- **Text:** Use HTML tags for structure such as `<h1>`, `<p>`, ``, `<table>`
- **Images:** Use the `` tag with appropriate attributes for size and alt text
- **Multimedia:** Embed multimedia using HTML5 tags like `<audio>`, `<video>`, and `<iframe>`

Editable content

Regions are specifically defined within the template where unique content can be added or updated for each page. These areas are designed to be flexible, allowing for a variety of content types to be displayed based on the needs of each page.

Text Sections: Paragraphs, headings, and other text elements that provide the main body of content for the page

Image Galleries: Collections of images that can be updated or changed to fit the context of the page

Videos: Embedded video content relevant to the page topic

Forms: Contact forms, subscription forms, or surveys that can be placed within the editable regions

Tables and Lists: Data tables, bullet lists, or numbered lists that organise information clearly

Interactive Elements: Maps, charts, or other interactive components that provide dynamic content

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Native File Formats

During the creation of interactive digital media products such as websites, mobile apps, digital maps, e-learning products, information points, and games, it is crucial to save your work in the native file formats of the software you are using. This approach maintains the full range of editing capabilities and ensures that all elements, assets and features remain editable.

Interactive Digital Media Product	Native Software	File Formats
E-learning Products	Adobe Dreamweaver	.dwt (templates)
	Source code	.html, .css, .js
Mobile Apps	Android Studio	.java, .kt (Kotlin)
	Xcode	.swift
Websites	Adobe Captivate	.cptx
Games	Unity	.unity (scenes), .cs (scripts)
Information Points	ArcGIS	.mxd, .aprx
Digital Maps	Kiosk Software (various)	.html, .css, .js, .xaml (WPF)

Version Control

Version control systems (VCS) like Git are essential for tracking changes and collaborating on projects. Using version control helps you manage the evolution of your product by allowing you to:

- 1 Roll back to previous versions if something goes wrong
- 2 Experiment with new features without fear of losing the current stable version
- 3 Collaborate with team members without overwriting each other's work

Match the appropriate native software and file formats to the interactive digital media products.

Platform-independent File Formats

Using platform-independent file formats ensures your product can be accessed without requiring specific software installations.

Complete the table below by filling in the platform-independent file formats and their compatibility for each interactive digital media product. An example has been provided.

Interactive Digital Media Product	Platform-independent File Formats	Compatibility
Websites	HTML, CSS, JS	Universally supported by web browsers
Mobile Apps		
Digital Maps		
E-learning Products		
Information Points		
Games		

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TECHNIQUES TO TEST/CHECK THE TECHNICAL PROPERTIES OF INTERACTIVE DIGITAL MEDIA

Methods of Testing and Checking

Using organised steps to make sure a product works properly, performs well, and gives users a good experience while meeting the required goals or expectations.

This highlights the most important parts of the game that need testing to make sure it works properly and keeps users happy.

This explains who is responsible for each task during testing to make sure everyone knows what to do and stays accountable.

This shows the schedule for each stage of testing to help keep the project on track.

This explains what makes a test successful, ensuring the game meets quality and performance standards.

This highlights any risks that could affect the testing process.

The test plan explains the goals, resources, schedule, and scope of testing. It includes:

- Purpose of testing
- Features to be tested
- Testing tasks
- Team responsibilities
- Test environment set-up
- Risks and backup plans



Example: Test plan for a mobile app game

Purpose	This plan explains how we will test the new mobile game, focusing on the most important features that will be tested, and the resources needed. The game is designed to keep users engaged with fun gameplay and impressive graphics.															
Features to be tested	<ul style="list-style-type: none"> ✓ User registration and login ✓ Main menu navigation ✓ Gameplay mechanics (levels, progression) ✓ In-game purchases ✓ Leaderboards and achievements ✓ Multiplayer functionality ✓ Settings and user preferences 	Features not to be tested <ul style="list-style-type: none"> ✓ Backend server functionalities (tested separately) ✓ Third-party integrations (assumed to be tested by their providers) 														
Personnel	Test manager: Jane Doe QA lead: John Smith Testers: Alice Johnson, Bob Williams Developers: Dev Team A	Tools Testing framework → Appium Bug tracking → Jira Performance testing → LoadRunner Devices → iPhone 12, Samsung Galaxy S21, Google Pixel 5														
Schedule	<table border="1"> <thead> <tr> <th>Phase</th> <th>Dates</th> </tr> </thead> <tbody> <tr> <td>Test planning</td> <td>1 July - 7 July</td> </tr> <tr> <td>Test case development</td> <td>8 July - 14 July</td> </tr> <tr> <td>Initial testing (alpha)</td> <td>15 July - 22 July</td> </tr> <tr> <td>Bug fixing</td> <td>23 July - 29 July</td> </tr> <tr> <td>Final testing (beta)</td> <td>30 July - 6 August</td> </tr> <tr> <td>Release preparation</td> <td>7 August - 10 August</td> </tr> </tbody> </table>	Phase	Dates	Test planning	1 July - 7 July	Test case development	8 July - 14 July	Initial testing (alpha)	15 July - 22 July	Bug fixing	23 July - 29 July	Final testing (beta)	30 July - 6 August	Release preparation	7 August - 10 August	Deliverables <ul style="list-style-type: none"> ✓ Test plan ✓ Test cases ✓ Test logs ✓ Defect reports ✓ Test summary report
Phase	Dates															
Test planning	1 July - 7 July															
Test case development	8 July - 14 July															
Initial testing (alpha)	15 July - 22 July															
Bug fixing	23 July - 29 July															
Final testing (beta)	30 July - 6 August															
Release preparation	7 August - 10 August															
Success criteria	<ul style="list-style-type: none"> ✓ All critical and major issues are fixed ✓ The game runs smoothly on all target devices ✓ Beta testers give positive feedback ✓ The game meets accessibility standards 															
Risks and mitigation	<ul style="list-style-type: none"> ⊗ Delays in receiving the latest build ⊗ Issues with testing tools ⊗ Unavailability of testing devices 	<ul style="list-style-type: none"> + Regular communication with development team + Backup testing tools + Secondary devices and backups 														
Testing tasks	<ul style="list-style-type: none"> <input type="checkbox"/> Develop test cases for all features within scope <input type="checkbox"/> Review and approve test cases <input type="checkbox"/> Execute test cases <input type="checkbox"/> Document test results and log defects <input type="checkbox"/> Conduct regression testing to ensure new changes do not affect existing functionalities 															
Testing environments and configuration	<ul style="list-style-type: none"> ⇒ Development environment ⇒ Staging environment ⇒ Ensure all testing devices have the latest OS versions ⇒ Install the latest game build on all devices 															

This makes it easy to understand the overall goals of the test plan.

This explains which parts of the game will be tested and which parts will not be tested, ensuring the most important features are covered.

This lists the tools and devices required for testing to ensure everything is ready and the testing runs smoothly.

This lists all the documents and reports that will be created during the testing process.

This explains ways to mitigate the impact of any identified risks during testing.

Ensures all functionalities are thoroughly tested. Uses a process to track and fix issues efficiently. Confirms that problems don't return and new changes don't cause new issues.

Ensures testing is done in environments that closely mimic the production environment.

Keeps the testing environment updated to reflect real-world usage conditions.

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TECHNIQUES TO TEST/CHECK THE TECHNICAL PROPERTIES OF INTERACTIVE DIGITAL MEDIA

Methods of Testing and Checking

Success criteria: Define the benchmarks for passing the tests, ensuring all features work correctly and that the game performs reliably, offers a smooth user experience, and meets accessibility guidelines.

Example: Success criteria for a mobile app game

- ☑ All required features (e.g. user registration, gameplay, in-game purchases) are working
- ☑ No major bugs affect gameplay or user progression
- ☑ Works across a range of operating systems (OS)
- ☑ The game responds correctly to user inputs
- ☑ Correct error messages are shown for unexpected user actions



◀ Add some more examples of success criteria

Accessibility compliance: Ensure the game meets standards for users with disabilities.

Visual	Audio	Motor	Cognitive	Satisfaction
Options such as colour-blind mode and high-contrast text/UI improve visibility for users with visual impairments	Subtitles or captions are available for all audio content, and volume controls are easy to access	The game supports alternative input methods (e.g. switch controls) and offers customisable control options	Clear and concise instructions, simplified modes, and features assist users with cognitive disabilities	The game meets accessibility standards (e.g. WCAG) to ensure inclusivity for all players

Functionality tests: Ensure smooth navigation and issue-free access.

Navigation Elements	Interactivity Elements	Input and Output Checks
Ensure all navigation elements (menus, buttons) work properly, allowing users to move through the application smoothly	<ul style="list-style-type: none"> ★ Ensure buttons trigger the correct action ★ Check forms can be filled, submitted, and processed properly ★ Check interactivity elements respond as expected 	<ul style="list-style-type: none"> ★ Ensure inputs are processed correctly and display expected outputs ★ Ensure user data is saved and retrieved accurately

Performance of multimedia: Ensure multimedia assets load quickly and provide a high-quality user experience.

Fill in the blanks based in the table below:
1-2, 2-3, 1, buffering, distortion, pixelated

Loading Times	Quality & Performance
Ensure multimedia loads quickly to prevent user frustration: <ul style="list-style-type: none"> → Images: ⌚ ___ seconds → Animations: ⌚ ___ seconds → Videos: ⌚ ___ seconds → Audio: ⌚ ___ seconds → Mobile Apps: ⌚ 1-3 seconds → In-game: ⌚ 1 second 	<ul style="list-style-type: none"> 🖼️ Image Quality: Images display correctly and are not _____ or distorted 🎥 Video Playback: Videos play smoothly without _____ or lag 🎵 Audio Quality: Audio files play without _____ or drops in quality

Testing

Correct Data Format: Input fields accept data formats

e.g. email fields accept properly formatted email addresses

Email:

Phone:

Numeric fields accept only numbers

Navigation tests

- All Navigation Elements
- Uncommon Navigation Elements

Key Areas to Test

- ✓ Main navigation
- ✓ Submenus
- ✓ Internal links
- ✓ Buttons and controls
- ✓ Breadcrumbs
- ✓ Pagination
- ✓ Skipping
- ✓ Back and forward
- ✓ Random access
- ✓ Deep linking
- ✓ Simultaneous actions

Throttling bandwidth

Slowing down Internet speed on purpose to test how apps and websites perform under slow network conditions

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TECHNIQUES TO REVIEW THE FITNESS FOR PURPOSE OF INTERACTIVE DIGITAL MEDIA

Ensuring that interactive digital media meets client requirements, target audience needs, and business objectives.

Suitability of Content

Ensure content is relevant, appropriate, and matches the audience needs.

- Techniques:**
- ✓ Check text for correct grammar, clarity, relevance, accuracy, and tone
 - ✓ Check images for good resolution, relevance, appropriateness, and copyright issues
 - ✓ Check videos are good quality, relevant, the right length, and accessible

A **design review** checks whether a product's design meets requirements. It identifies any issues with usability, appearance, function, or accessibility before development continues.

Creating Interactive Digital Media

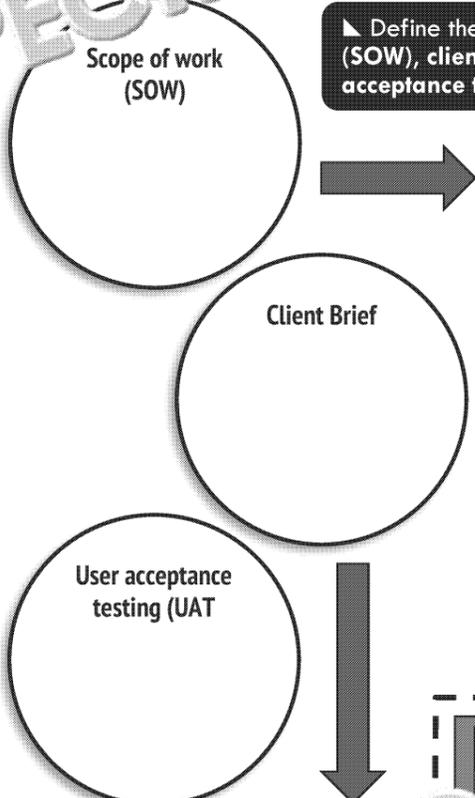
- has both advantages and challenges that:
- Engages users with interactive elements like quizzes and polls
 - Personalised to improve user satisfaction
 - Offers immediate feedback, boosting learning

Suitability for Client Requirements

Ensure the final product meets all features and functions specified in the client's brief.

Importance?

- Client Satisfaction** → Meeting client requirements ensures the product meets their needs, leading to high satisfaction and more future business opportunities
- Project Success** → A product that meets the client's requirements is more likely to succeed, as it solves the specific problems or needs of the project
- Avoids Scope Creep** → Following the client's brief prevents scope creep, where extra features or changes cause delays and higher costs
- Quality Assurance** → Ensuring all features work correctly is key to quality assurance, reducing defects and issues after launch
- Accountability** → Delivering what was agreed shows professionalism and builds trust with the client



- Techniques:**
- Conduct a review session with the client**
 - Schedule a meeting with the client to review the final product, demonstrate how it meets the requirements, and collect feedback on any issues or discrepancies

- Interactive presentation:** Let the client explore the app, test features, and perform tasks to experience how it works
- Feature demonstration:** Create a demo that shows key features and how they meet the client's requirements

Aspect	Advantages	Disadvantages
Client Satisfaction	Leads to repeat business and good reviews	Focusing only on the brief might miss creative opportunities
Project Success	Increases the chance of success by meeting client needs	Being too strictly to the brief might limit flexibility if things change
Avoids Scope Creep	Prevents extra changes that increase costs and extend timelines	Rigid change rules can feel too formal or slow
Quality Assurance	Ensures all work is planned, tested, and fixed before launch	Testing can take longer if requirements are unclear or complex
Accountability and Trust	Builds trust with the client by showing professionalism	Relying too much on initial requirements can be problematic if client needs change
Cost Management	Helps manage costs by sticking to agreed features	Extra features might be requested, needing careful negotiation
Documentation and Clarity	Provides clear structure to meet client needs	Over-reliance on documents can limit creative solutions
Risk Management	Reduces risk by delivering agreed features	Following the brief too strictly might make it hard to adapt to new challenges

Aspect	Advantages
User Engagement	More engagement because the product is relevant and easy to use
User Retention	Increased likelihood of repeat use and loyalty
Market Success	Greater adoption and success by meeting market needs
User Experience	Improves satisfaction and enjoyment
Brand Reputation	Positive experiences build a stronger brand
Tailored Content and Features	Makes the product more relevant to the target audience
Competitive Edge	Meeting the target audience's needs better than competitors
Feedback and Improvement	Direct feedback helps make improvements

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Constraints Limiting the Effectiveness of Interactive Digital Media

Interactive digital media has revolutionised how we consume content, engage with brands, and interact with technology. However, creating high-quality interactive digital media comes with its own set of challenges. Several constraints can limit the effectiveness of these media projects, impacting the final output's depth, quality, and user engagement. These constraints span across various areas such as time, resources, hardware, software and skills. Understanding these constraints is crucial for managing expectations, planning effectively, and delivering successful projects.

Interactive Digital Media Improvement

The landscape of interactive digital media is continuously evolving with technological advancements and changing user expectations. To create more effective and impactful experiences, it is essential to focus on various aspects of digital media production. Enhancements in design consistency, quality, content and concept, animation/video, and audio can significantly improve the user experience, making the media more engaging, informative, and easy to navigate.

Creating interactive digital media can be challenging due to certain limits. What are these limits? Think about resources, time, hardware, software, and skills. It is harder to create good quality interactive digital media when these limits are present.

Provide **one example** for each of these areas could affect the quality of a digital media project. An example has been done for you.

Time	Development Deadlines	Tight deadlines can limit the depth and quality of the media produced
Resources		
Hardware		
Software		
Skills		

Improvements for Consistency

Aspect	Improvement
Visual Motifs	Design Elements Library – Develop a library of design elements like buttons and backgrounds that can be reused across the media to ensure that all elements follow the same style.
Voice and Tone	Consistent Messaging – Ensure all communications, whether text or audio, align with the brand's core values and messaging.
Colours	
Fonts	
Buttons	
Logos	
Imagery	
Animations	

Interactive digital media can be made better by improving different aspects. Why is it important to keep these things the same across all parts of the media? Give one example of how using the same style for each of these aspects can improve the user experience.

Suggest **four** ways to improve the **user experience** in interactive digital media.

Aspect	Improvement
Search Functionality	Filters
Breadcrumbs	Navigate the site
Interactive Media	Clickable additional
Engaging Buttons	Visual

Impact of successful interactive digital media

- =
- 1 **Client Satisfaction** High-quality and effective media can lead to repeat business and additional projects from satisfied clients
 - 2 **Reputation Building** Successful projects build a positive reputation, attracting more clients and opportunities

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