A logo with blue text

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**Web and Mobile Technologies (B9IS124)**

**Develop a responsive web application, optimised for mobile, tablets and desktop device.**

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**NO. OF WORDS:** **1609**

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| **1. ABSTRACTS** |

Responsive web design is essential for creating websites that seamlessly adapt to various devices, ensuring optimal user experiences regardless of screen size. This approach prioritizes content adaptability, presenting information consistently across devices without distortion or hiding any elements. With the widespread use of portable devices, the demand for fully responsive layouts has become paramount in today's fast-paced digital environment.

Responsive websites effectively address challenges like scrolling and resizing on different devices, enabling users to access information quickly and effortlessly. As technology evolves, website design evolves alongside it, catering to the features and screen sizes of diverse devices to enhance usability.

Implementing responsive design simplifies website development efforts by reducing the organization's workload in maintaining and constructing sites for multiple devices. By leveraging HTML and CSS techniques, developers can optimize code efficiency, utilize versatile CSS classes for styling, and minimize the use of inline styles, ensuring consistency across the website's layout and design.

Embracing responsive design allows organizations to meet evolving website demands efficiently, resolving potential issues and optimizing performance to better serve today's users across a wide range of devices.

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| **2. Introduction** |

Fitness First, an online retailer specializing in workout gear, presents its web application consisting of two main pages: index.html and product-details.html.

The index.html serves as the homepage, featuring a header with a logo, search bar, and navigation menu. It also includes sections for website information and a footer with contact details. The main content area showcases a grid of product photographs. This page employs external CSS stylesheets and utilizes the Font Awesome icon collection for enhanced visual appeal.

In contrast, product-details.html is dedicated to displaying detailed information about individual products. It features a header with navigation options and divides the content area into two containers: one for product images and the other for essential details like name, cost, rating, and description. Additionally, social networking links are included in the footer for community engagement.

The product grid is dynamically populated with data from various items using JavaScript, which is integrated into the script.js file. For each product, HTML elements are generated dynamically to display the product image, name, price, stock level, rating, and an exploration button. Users benefit from the script's search functionality, allowing them to search for specific products by name efficiently.

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| **3. Approach to the Problem:** |

**Home Page:** The index page aims to offer a dynamic user experience, featuring an elegant layout with navigation elements (Home, About, Contact Us), dynamically generated products in the main content, and contact information/social media links in the footer to captivate users and create a compelling first impression.

**Define an array in JavaScript:** I established a structured data model to store product details. Utilizing an array of objects, each object delineates a product with attributes like image URL, name, price, stock level, and rating. Subsequently, dynamically generated product components are appended to an HTML container, such as a div, identified distinctly for organization and display.

**Iterated over the data:** I've traversed through the array of objects containing comprehensive product data. This process involves extracting key details for each product, such as name, price, stock level, rating, and picture URL.

**Created HTML Elements:** Through JavaScript, we've dynamically generated HTML components to showcase product details. This involves utilizing HTML tags (e.g., **<img>**, **<p>**) which can be created and customized based on the retrieved data, allowing seamless display of product information.

**Inserting elements to the container:** Inserted dynamically generated HTML elements for each product into the established container element, ensuring product details are displayed on the website. Employed the onkeyup event listener to manage the search functionality by capturing user input, filtering items based on search parameters like product name, and dynamically updating the displayed products accordingly.

**Layout and Styling:** Utilized a dedicated CSS stylesheet to aesthetically style the dynamically generated HTML components, ensuring a visually appealing and user-friendly design. Employed media queries to adjust the styling for various screen sizes, enhancing the website's responsiveness and usability across different devices.

**Handling view Details button:** Implemented a button functionality utilizing an onclick event listener and established a function to display additional details about the selected item, redirecting users to a separate page for more information.

**Testing and improvement:** Tested the dynamic product display's layout and functioning, as well as its search capabilities and other features at each stage of development and improved according to the project requirements.

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| **4. Site Map:** |

* The gym's website homepage, index.html, presents a "View Details" button and a product brochure displaying item names, prices, and images. Additionally, it showcases website details, including contact information and social media icons.
* Upon clicking the "View Details" button, a JavaScript function triggers the opening of the product-detail.html page.
* Top of Form
* The "product-detail.html" page showcases comprehensive information about the selected product, encompassing product images, names, prices, descriptions, ratings, and other pertinent details.
* In the footer, we've included contact information, social media icons, and website details.
* Incorporating these web pages and sections into the sitemap enhances the website's organization, making it easier for customers to navigate and comprehend its content. Additionally, it aids search engines in discovering and indexing the site effectively.

The "Home" page serves as the site's main entry point, leading users to sections like "Products," "About Us," and "Contact Us." The "Products" section contains various product categories, each with its own dedicated page. Users can utilize the search function on the "Products" page to find specific items by name.

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| **5. Deciding the layout:** |

**Project Organization:** The project features a modular layout, where each component is organized in its own file and directory. This design enhances code readability and encourages code reuse by separating different functionalities into distinct modules.

**HTML Page:** The project comprises two HTML pages: the index page and the product details page. Each page serves a unique role and fulfills a specific purpose within the website's structure.

**CSS Styling:** CSS, or Cascading Style Sheets, are employed to enhance the visual presentation of HTML elements, ensuring a cohesive and visually appealing appearance for the website. Various components and sections can be styled individually using CSS classes and selectors, allowing for consistent design throughout the site.

**Integration of JavaScript: J**avaScript plays a pivotal role on the website, enabling interactive features and dynamic functionality. It orchestrates essential tasks such as managing search functionality, generating product cards on the index page, displaying individual product details, and facilitating the reserve form on the product details page.

Numerous components incorporate event listeners to capture user actions and trigger relevant functionality. For example, the search input field features an onkeyup event listener that records user keystrokes and initiates the search functionality accordingly. Top of Form

A screen shot of a computer

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**A screenshot of a computer program

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| **6. Technology Used:** |

**HTML:** HTML (Hypertext Markup Language) serves as the fundamental language for structuring and presenting online content. Tags define the properties and behavior of each element on a webpage. Through HTML, developers can create dynamic and visually appealing websites by incorporating text, images, links, forms, tables, and various other elements.

**CSS:** CSS (Cascading Style Sheets) provides a means to style and format the visual appearance of HTML pages. It enables the addition of fonts, layouts, and other aesthetic enhancements to websites. By separating the appearance from the information, CSS allows developers to create unified and visually appealing designs across multiple web pages.

**JavaScript:** JavaScript is a potent programming language utilized to enhance website functionality and interaction. It enables form handling, dynamic content updates, and more. JavaScript empowers developers to create responsive, dynamic web applications, capable of operating on both client and server sides. It facilitates data manipulation, animation control, and the creation of interactive features.

**Responsive Design:**   
Responsive design utilizes media queries within cascading style sheets to craft web pages with adaptable layouts, flexible images, and media content. It enables the development of web pages capable of detecting the visitor's screen size and orientation, adjusting the layout accordingly for optimal viewing experience.

**Searched Item:**

A close up of a rope

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**Responsive for Mobile:**

A screenshot of a computer

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**Responsive for Desktop:**A collage of a gym

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**Responsive for Tablets:**

A screenshot of a computer

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| **7. Conclusion** |

The provided code showcases a well-structured and functional web application for the "Addict Fit" online fitness equipment store. It effectively utilizes HTML, CSS, and JavaScript to create a user-friendly interface and provide essential functionality for browsing and accessing product details.

The index.html file presents an appealing homepage design with a refined layout. Users can effortlessly navigate the website using the logo, navigation menu, and search bar in the header. The product grid showcases a diverse range of exercise equipment options, enticing users to explore further. Additionally, the footer provides links to social media and contact details, enhancing user engagement.

The product-details.html file facilitates a seamless transition from the homepage to specific product pages. It effectively highlights product images while offering comprehensive details such as name, price, rating, and description. Consistency is maintained throughout the program with the persistent header and footer, ensuring a unified user experience.

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The script.js file showcases JavaScript's capability to dynamically populate the product grid on the website. By efficiently integrating product data into the grid, visitors can easily navigate and discover items of interest. The search feature enhances usability, enabling users to swiftly locate specific products.

In summary, the code illustrates a meticulously crafted and fully functional online fitness equipment enterprise. Seamlessly blending aesthetics, usability, and interactivity, it delivers a compelling and enjoyable user experience. With a solid foundation laid, it is poised for enhancements and integration of backend functionality to facilitate actual transactions and further enhance the shopping journey.

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