

Web Engineering: Assignment 1

Instructions:

- Copying from the internet or peers is strictly prohibited and will lead to severe penalties.
- Submit your files with Roll Number and proper numbering of questions on GCR. For Q1 submit 3 files i.e HTML,CSS and JS

Question 1

Develop a responsive e-commerce webpage **similar** to the image below using HTML, CSS, and JavaScript. The webpage should have interactive elements managed via the DOM. (Reference:<https://www.amazon.com>)

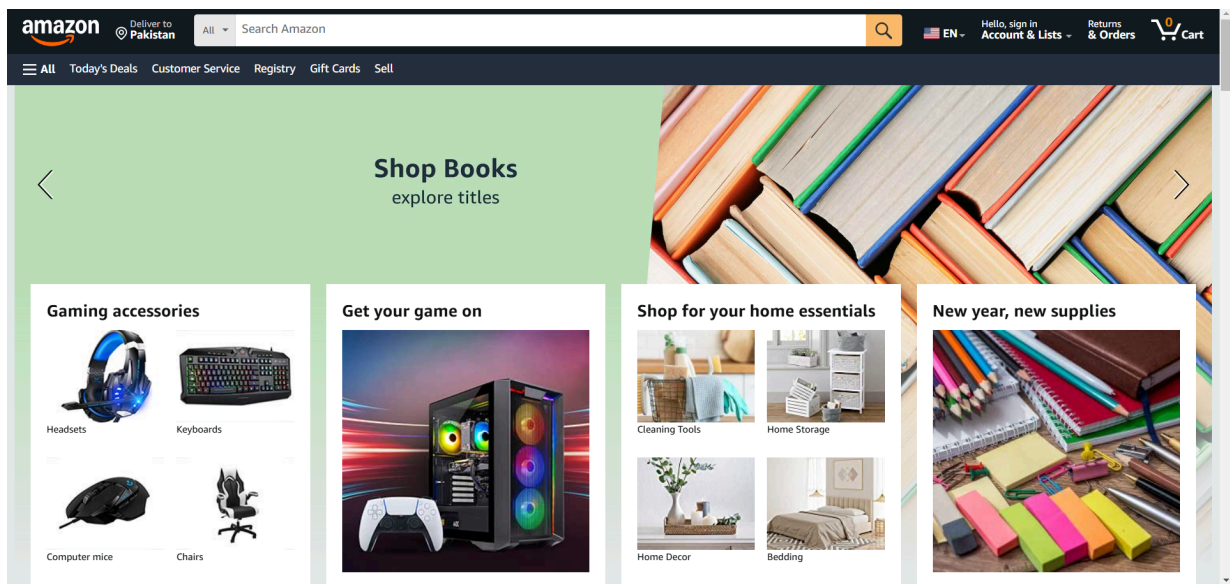


Fig : Desktop screen layout

Requirements:

1. HTML:

- a. **Navbar:** Must include elements like logo, search bar, cart and 'light/dark mode' toggle Button.
- b. **Main Content:** Cards displaying details of products like name, image, rating with 'Add to Cart' Button.

2. CSS:

- a. Ensure that the design is **responsive** for various screen sizes. Use media queries to adjust the design like the layout of cards for smaller screens.
- b. Implement a dark mode toggle i.e change background colour.

3. JavaScript:

- a. Clicking the 'light/dark mode' toggle Button should change the background colour.
- b. Clicking 'Add to Cart' Button should increment the count in 'Cart' in the navbar
- c. Add Remove from Cart Functionality

Q2: Write a function **processArray(arr, callback)** that takes an array of numbers and a callback function. The callback should either:

- Double the values if callback is double
- Find the square if callback is square

For example:

```
const numbers=[10,5,8,2,6]
```

```
processArray(arr, double)
```

Output: [20,10,16,4,12]

Q3: Given the array:

```
const students = [  
  { name: "Ali", age: 22, marks: 85 },  
  { name: "Ayesha", age: 20, marks: 92 },  
  { name: "Bilal", age: 23, marks: 78 },  
  { name: "Ibrahim", age: 22, marks: 76 },  
  {name: "Usama", age: 21, marks :80}  
];
```

Write functions to:

1. Sort students by marks in descending order.
2. Return student names with marks greater than 80.
3. Return students older than 21.

Q4: Given the following HTML:

```
<input type="text" id="nameInput" placeholder="Enter name">
```

```
<button id="addButton">Add Name</button>
```

```
<ul id="nameList"></ul>
```

Write **JavaScript** that:

- Adds the entered name to the list () when the button is clicked.
- Prevents empty inputs from being added.