EXP-05

- **AIM:-** To create a **dynamic product filter** using **JavaScript DOM manipulation**, where products are shown/hidden based on the category selected from a dropdown menu.
- **THEORY:-** **DOM (Document Object Model)** represents the structure of a webpage in a tree-like format.
- Using **JavaScript DOM manipulation**, we can access HTML elements (getElementById, querySelectorAll) and dynamically change their properties (style, classList).
- By assigning each product a **data-category attribute**, JavaScript can filter and display only those products that match the user's selection from the dropdown.
- This technique is commonly used in **e-commerce sites** for filtering products by category, price, brand, etc.
- **CODE:-**

```html
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>Dynamic Product Filter</title>
  <style>
    body { font-family: Arial, sans-serif; padding: 20px; }
    select { padding: 5px; margin-bottom: 20px; }
    .product { padding: 10px; border: 1px solid #ccc; margin: 5px 0; border-radius: 5px; }
    .hidden { display: none; }
  </style>
</head>
<body>
  <h2>Product List</h2>
```

```html
<!-- Dropdown filter -->
<label for="categoryFilter">Filter by Category:</label>
<select id="categoryFilter">
  <option value="all">All</option>
  <option value="electronics">Electronics</option>
  <option value="clothing">Clothing</option>
  <option value="books">Books</option>
</select>

<!-- Product list -->
<div id="productList">
  <div class="product" data-category="electronics">Smartphone</div>
  <div class="product" data-category="electronics">Laptop</div>
  <div class="product" data-category="clothing">T-Shirt</div>
  <div class="product" data-category="clothing">Jeans</div>
  <div class="product" data-category="books">JavaScript Guide</div>
  <div class="product" data-category="books">Novel</div>
</div>

<script>
  // DOM Elements
  const filterDropdown = document.getElementById("categoryFilter");
  const products = document.querySelectorAll(".product");

  // Event listener for dropdown change
  filterDropdown.addEventListener("change", function() {
    const selectedCategory = this.value;
```
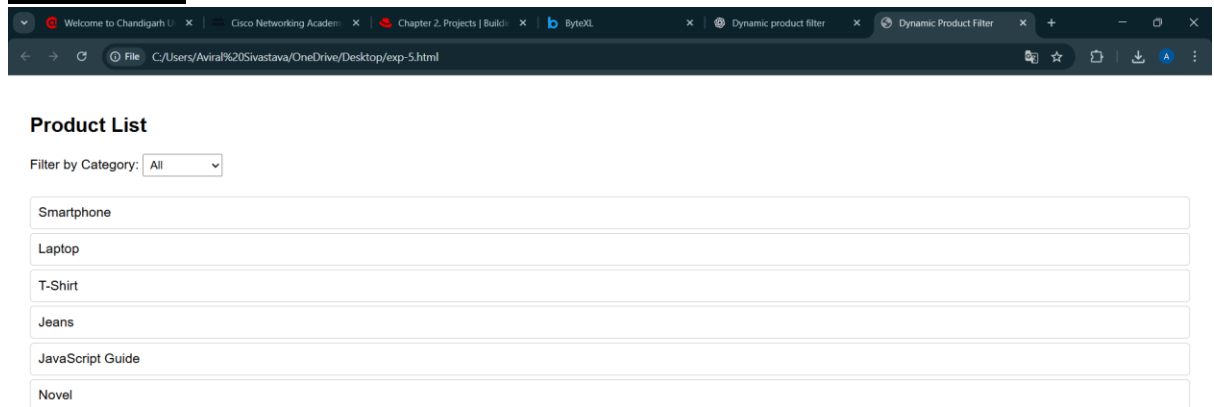
```javascript
    products.forEach(product => {
      const category = product.getAttribute("data-category");


      if (selectedCategory === "all" || category === selectedCategory) {
        product.classList.remove("hidden");
      } else {
        product.classList.add("hidden");
      }
    });
  });
</script>
</body>
</html>
```

- **OUTPUT:-**

- **LEARNING OUTCOMES:-**

✓ Understand how to **use DOM manipulation** to dynamically show/hide elements.
✓ Apply **event handling** (`addEventListener`) for interactive web features.

- ✓ Use **data attributes** (`data-category`) for custom filtering logic.
- ✓ Implement a **basic product filtering system** similar to real-world e-commerce platforms.