

Experiment - 2

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Semester: 5th **Date of Performance:** 11/9/25 **Subject Name:** Full Stack- I **Subject Code:** 23CSP-339

Aim: To implement a dynamic product filtering system that updates displayed items

based on user dropdown selection using JavaScript and DOM manipulation.

Objective: The main objective is to-

1. Create a product dataset.

2. Build filter dropdown UI.

3. Implement filter logic using Array.prototype.filter().

4. Dynamically update the DOM.

5. Add visual feedback (filtered results in real-time).

Hardware/Software Requirements:

Category Requirements

Hardware i3+ CPU, 4GB RAM, 1920x1080 display

Software VS Code, Chrome DevTools, Live Server

Backend (optional) Node.js (for API simulation)

About the Experiment -

Concepts covered-

- 1. DOM query selection.
- 2. Event listeners.
- 3. Array methods: filter(), map(), join()
- 4. Dynamic rendering using innerHTML

Real-world Applications-

- 1. Product filtering in e-commerce websites.
- 2. Real-time UI updates without page reloads.

Code implementation -

```
<!DOCTYPE html>
<html lang="en">
<head>
 <meta charset="UTF-8">
 <meta name="viewport" content="width=device-width, initial-scale=1.0">
 <title>Experiment 2 - Dynamic Product Filtering</title>
 <style>
  body {
   font-family: Arial, sans-serif;
   padding: 20px;
  }
  #filter {
   padding: 8px;
   margin-bottom: 20px;
  }
  .product {
   border: 1px solid #ccc;
   padding: 12px;
   margin: 10px 0;
```

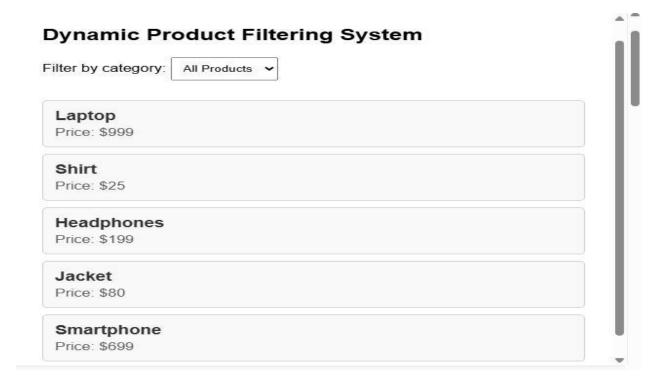
```
border-radius: 5px;
   background: #f9f9f9;
  }
  .product h3 {
   margin: 0;
   color: #333;
  }
  .product p {
   margin: 5px 00;
   color: #555;
  }
 </style>
</head>
<body>
 <h2>Dynamic Product Filtering System</h2>
 <label for="filter">Filter by category:</label>
 <select id="filter">
  <option value="all">All Products</option>
  <option value="electronics">Electronics</option>
```

```
<option value="clothing">Clothing</option>
</select>
<div id="products-container"></div>
<script>
 const products = [
  { name: "Laptop", category: "electronics", price: 999 },
  { name: "Shirt", category: "clothing", price: 25 },
  { name: "Headphones", category: "electronics", price: 199 },
  { name: "Jacket", category: "clothing", price: 80 },
  { name: "Smartphone", category: "electronics", price: 699 }
 ];
 document.getElementById('filter').addEventListener('change', (e) => {
  const selected = e.target.value;
  const filtered = selected === 'all'
   ? products
   : products.filter(p => p.category === selected);
  renderProducts(filtered);
```

```
});
```

```
function renderProducts(products) {
   const container = document.getElementById('products-container');
   container.innerHTML = products.map(p => `
    <div class="product">
     < h3 >  {p.name}< /h3 >
      Price: $${p.price}
    </div>
   `).join(");
  }
  // Initial render
  renderProducts(products);
 </script>
</body>
</html>
```

Output:



Dynamic Product Filtering System Filter by category: Clothing Shirt Price: \$25 Jacket Price: \$80

Dynamic Product Filtering System

Laptop
Price: \$999

Headphones
Price: \$199

Smartphone
Price: \$699