



# DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

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## Experiment - 2

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**Semester:** 5<sup>th</sup>

**Subject Name:** Full Stack- I

**Subject Code:** 23CSP-339

**UID:** 23BCS10135

**Section/Group:** KRG-2B

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**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.



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## 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;
```



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```
border-radius: 5px;

background: #f9f9f9;

}

.product h3 {

margin: 0;

color: #333;

}

.product p {

margin: 5px 0 0;

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>
```



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```
<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);
```



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```
});
```

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

```
// Initial render
```

```
renderProducts(products);
```

```
</script>
```

```
</body>
```

```
</html>
```

**Output:**



### Dynamic Product Filtering System

Filter by category: All Products

- Laptop**  
Price: \$999
- Shirt**  
Price: \$25
- Headphones**  
Price: \$199
- Jacket**  
Price: \$80
- Smartphone**  
Price: \$699

### Dynamic Product Filtering System

Filter by category: Clothing

- Shirt**  
Price: \$25
- Jacket**  
Price: \$80



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## Dynamic Product Filtering System

Filter by category: Electronics ▼

### Laptop

Price: \$999

### Headphones

Price: \$199

### Smartphone

Price: \$699