



Experiment - 2

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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.



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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;

border-radius: 5px;

background: #f9f9f9;



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```
}

.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> <option
        value="clothing">Clothing</option>

    </select>
```



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```
<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>  
            <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