

## **WEB TECHNOLOGIES(Lab)**

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# Task 10

## Lab 10: Advanced JavaScript — Objects, Arrays, JSON, ES6

### Objectives:

Use ES6 features and fetch/display JSON. Parse and manipulate arrays/objects.

### Tools/Tech:

VS Code, Fetch API or sample JSON file, modern browser

### Tasks/Steps:

1. Create a small app that fetches JSON (local or public API) and renders items (e.g., product list).
2. Use ES6 constructs: let/const, arrow functions, template literals, destructuring.
3. Implement filtering/sorting of the fetched data.

### Deliverables:

App with fetch functionality and code demonstrating ES6 features.

### Index.html:

```
<!DOCTYPE html>

<html lang="en">
  <head>
    <meta charset="UTF-8" />
    <title>Advanced Product Browser</title>
    <link rel="stylesheet" href="styles.css">
  </head>
  <body>
    <header>
      <h1>Product Browser</h1>
      <p>Displaying live data from Fake Store API</p>
    </header>
    <section class="controls">
      <input id="searchBox" type="text" placeholder="Search products...">
      <select id="categoryFilter"></select>
```

```
<select id="sortPrice">
  <option value="none">Sort: None</option>
  <option value="asc">Price: Low → High</option>
  <option value="desc">Price: High → Low</option>
</select>
</section>
<main id="productGrid" class="grid"></main>
<script src="app.js" type="module"></script>
</body>
</html>
```

### Styles.css:

```
body {
  margin: 0;
  font-family: system-ui, sans-serif;
  background: #f4f4f4;
}

header {
  background: #2d2d57;
  color: white;
  padding: 20px;
  text-align: center;
}

.controls {
  display: flex;
  gap: 15px;
  padding: 15px;
  background: white;
  position: sticky;
  top: 0;
  z-index: 100;
  border-bottom: 1px solid #ddd;
```

```
}

.controls input,
.controls select {
    padding: 10px;
    font-size: 1rem;
    border-radius: 6px;
    border: 1px solid #ccc;
}

.grid {
    display: grid;
    padding: 20px;
    gap: 20px;
    grid-template-columns: repeat(auto-fill, minmax(260px, 1fr));
}

.card {
    background: white;
    border-radius: 10px;
    padding: 15px;
    box-shadow: 0 3px 6px rgba(0,0,0,0.1);
    transition: transform .2s, box-shadow .2s;
}

.card:hover {
    transform: translateY(-5px);
    box-shadow: 0 6px 12px rgba(0,0,0,0.15);
}

.card img {
    width: 100%;
    height: 200px;
    object-fit: contain;
}

.price {
    color: #2d2d57;
```

```
font-weight: bold;  
font-size: 1.1rem;  
}
```

### App.js:

```
const grid = document.getElementById("productGrid");  
const searchBox = document.getElementById("searchBox");  
const categoryFilter = document.getElementById("categoryFilter");  
const sortPrice = document.getElementById("sortPrice");  
  
let products = [];  
let categories = [];  
  
// Fetch from Fake Store API  
  
const fetchProducts = async () => {  
  const res = await fetch("https://fakestoreapi.com/products");  
  products = await res.json();  
  
  const catRes = await fetch("https://fakestoreapi.com/products/categories");  
  categories = await catRes.json();  
  
  renderCategoryOptions();  
  render(products);  
};  
  
// Build category dropdown  
  
const renderCategoryOptions = () => {  
  categoryFilter.innerHTML =  
    `<option value="all">All Categories</option>` +  
    categories.map(c => `<option value="${c}">${c}</option>`).join("");  
};  
  
// Render on screen  
  
const render = (items) => {  
  grid.innerHTML = items  
  
  .map(({ title, price, category, image }) => '  
    <div class="card">  
      
```

```

<h3>${title}</h3>
<p class="price">${price.toFixed(2)}</p>
<p>${category}</p>
</div>
')
.join("");
};

// Apply search + filter + sort in combination
const applyFilters = () => {
  let result = [...products];
  // Search
  const search = searchBar.value.toLowerCase();
  result = result.filter(p =>
    p.title.toLowerCase().includes(search)
  );
  // Category Filter
  if (categoryFilter.value !== "all") {
    result = result.filter(p =>
      p.category === categoryFilter.value
    );
  }
  // Sort
  if (sortPrice.value === "asc") {
    result.sort((a, b) => a.price - b.price);
  } else if (sortPrice.value === "desc") {
    result.sort((a, b) => b.price - a.price);
  }
  render(result);
};

// Event listeners
searchBar.addEventListener("input", applyFilters);
categoryFilter.addEventListener("change", applyFilters);

```

```
sortPrice.addEventListener("change", applyFilters);
// Load initial data
fetchProducts();
```

### Products.json:

```
[  
  {  
    "id": 1,  
    "title": "Fjallraven - Foldsack No. 1 Backpack, Fits 15 Laptops",  
    "price": 109.95,  
    "description": "Your perfect pack for everyday use and walks in the forest...",  
    "category": "men's clothing",  
    "image": "https://fakestoreapi.com/img/81fPKd-2AYL._AC_SL1500_.jpg"  
  },  
  {  
    "id": 2,  
    "title": "Mens Casual Premium Slim Fit T-Shirts ",  
    "price": 22.3,  
    "description": "Slim-fitting style, contrast raglan long sleeve...",  
    "category": "men's clothing",  
    "image": "https://fakestoreapi.com/img/71-3HjGNDUL._AC_SY879_.jpg"  
  },  
  {  
    "id": 3,  
    "title": "Mens Cotton Jacket",  
    "price": 55.99,  
    "description": "Great outerwear jackets for Spring/Autumn/Winter...",  
    "category": "men's clothing",  
    "image": "https://fakestoreapi.com/img/71li-uJtlUL._AC_UX679_.jpg"  
  },  
  {  
    "id": 4,
```

```
"title": "Mens Casual Slim Fit",
"price": 15.99,
"description": "The color could be slightly different...",
"category": "men's clothing",
"image": "https://fakestoreapi.com/img/71YXzeOuslL._AC_UY879_.jpg"
},
{
"id": 5,
"title": "John Hardy Women's Legends Naga Gold & Silver Dragon Station Chain Bracelet",
"price": 695,
"description": "From our Legends Collection...",
"category": "jewelry",
"image": "https://fakestoreapi.com/img/71pWzhdJNwL._AC_UL640_.jpg"
},
{
"id": 6,
"title": "Solid Gold Petite Micropave",
"price": 168,
"description": "Satisfaction Guaranteed...",
"category": "jewelry",
"image": "https://fakestoreapi.com/img/61sbMiUnoGL._AC_UL640_.jpg"
},
{
"id": 7,
"title": "White Gold Plated Princess",
"price": 9.99,
"description": "Classic Created Wedding Engagement Ring...",
"category": "jewelry",
"image": "https://fakestoreapi.com/img/71YAIFU48IL._AC_UL640_.jpg"
},
{
"id": 8,
```

```
"title": "Pierced Owl Rose Gold Plated Stainless Steel Double",
"price": 10.99,
"description": "Rose gold plated earrings...",
"category": "jewelery",
"image": "https://fakestoreapi.com/img/51UDEzMJVpL._AC_UL640_.jpg"
},
{
"id": 9,
"title": "WD 2TB Elements Portable External Hard Drive - USB 3.0 ",
"price": 64,
"description": "USB 3.0 and USB 2.0 Compatibility...",
"category": "electronics",
"image": "https://fakestoreapi.com/img/61IBBVJvSDL._AC_SY879_.jpg"
},
{
"id": 10,
"title": "SanDisk SSD PLUS 1TB Internal SSD - SATA III 6 Gb/s",
"price": 109,
"description": "Easy upgrade for faster boot up...",
"category": "electronics",
"image": "https://fakestoreapi.com/img/61U7T1koQqL._AC_SX679_.jpg"
},
{
"id": 11,
"title": "Silicon Power 256GB SSD 3D NAND A55",
"price": 109,
"description": "3D NAND flash...",
"category": "electronics",
"image": "https://fakestoreapi.com/img/71kWymZ+c+L._AC_SX679_.jpg"
},
{
"id": 12,
```

```
"title": "WD 4TB Gaming Drive Works with Playstation 4",
"price": 114,
"description": "Expand your PS4 gaming...",
"category": "electronics",
"image": "https://fakestoreapi.com/img/61mtL65D4cL._AC_SX679_.jpg"
},
{
"id": 13,
"title": "Acer SB220Q bi 21.5 inches Full HD",
"price": 599,
"description": "21.5 inches Full HD...",
"category": "electronics",
"image": "https://fakestoreapi.com/img/81QpkIctqPL._AC_SX679_.jpg"
},
{
"id": 14,
"title": "Samsung 49-Inch CHG90 144Hz Curved Gaming Monitor",
"price": 999.99,
"description": "49 INCH SUPER ULTRAWIDE...",
"category": "electronics",
"image": "https://fakestoreapi.com/img/81Zt42ioCgL._AC_SX679_.jpg"
},
{
"id": 15,
"title": "BIYLACLESEN Women's 3-in-1 Snowboard Jacket",
"price": 56.99,
"description": "Note: Jackets are made...",
"category": "women's clothing",
"image": "https://fakestoreapi.com/img/51Y5NI-I5jL._AC_UX679_.jpg"
},
{
"id": 16,
```

```
"title": "Lock and Love Women's Removable Hooded Faux Leather Moto Jacket",
"price": 29.95,
"description": "Faux leather material...",
"category": "women's clothing",
"image": "https://fakestoreapi.com/img/81XH0e8fefL._AC_UY879_.jpg"
},
{
"id": 17,
"title": "Rain Jacket Women Windbreaker",
"price": 39.99,
"description": "Lightweight, waterproof...",
"category": "women's clothing",
"image": "https://fakestoreapi.com/img/71HblAHs5xL._AC_UY879_-2.jpg"
},
{
"id": 18,
"title": "MBJ Women's Solid Short Sleeve Boat Neck",
"price": 9.85,
"description": "95% RAYON 5% SPANDEX...",
"category": "women's clothing",
"image": "https://fakestoreapi.com/img/71z3kpMAYsL._AC_UY879_.jpg"
},
{
"id": 19,
"title": "Opna Women's Short Sleeve Moisture",
"price": 7.95,
"description": "100% Polyester...",
"category": "women's clothing",
"image": "https://fakestoreapi.com/img/51eg55uWmdL._AC_UX679_.jpg"
},
{
"id": 20,
```

```
"title": "DANVOUY Womens T Shirt Casual Cotton Short",  
"price": 12.99,  
"description": "95%Cotton, 5%Spandex...",  
"category": "women's clothing",  
"image": "https://fakestoreapi.com/img/61pHAEJ4NML._AC_UX679_.jpg"  
}  
]  

```

## Output:

**Product Browser**  
Displaying live data from Fake Store API

Search products... All Categories Sort: None

| Item  | Description | Price          | Category |
|---|-------------|----------------|----------|
| Fjallraven - Foldsack No. 1 Backpack, Fits 15 Laptops | \$109.95    | men's clothing |          |
| Mens Casual Premium Slim Fit T-Shirts                 | \$22.30     | men's clothing |          |
| Mens Cotton Jacket                                    | \$55.99     | men's clothing |          |
| Mens Casual Slim Fit                                  | \$15.99     | men's clothing |          |

**Product Browser**  
Displaying live data from Fake Store API

Search products... electronics Price: Low → High

| Item   | Description | Price       | Category |
|--|-------------|-------------|----------|
| WD 2TB Elements Portable External Hard Drive - USB 3.0                       | \$64.00     | electronics |          |
| SanDisk SSD PLUS 1TB Internal SSD - SATA III 6 Gb/s                          | \$109.00    | electronics |          |
| Silicon Power 256GB SSD 3D NAND A55 SLC Cache Performance Boost SATA III 2.5 | \$109.00    | electronics |          |
| WD 4TB Gaming Drive Works with Playstation 4 Portable External Hard Drive    | \$114.00    | electronics |          |