

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 = searchBox.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
searchBox.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/71YXzeOusIL._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": "jewelery",
  "image": "https://fakestoreapi.com/img/71pWzhdJNwL._AC_UL640_.jpg"
},
{
  "id": 6,
  "title": "Solid Gold Petite Micropave ",
  "price": 168,
  "description": "Satisfaction Guaranteed...",
  "category": "jewelery",
  "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": "jewelery",
  "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

All Categories


Sort: None



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

electronics


Price: Low → High



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