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- JAVASCRIPT PRACTISE 2.1
- HTML CODE

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Live Character Counter</title>
  <link rel="stylesheet" href="stylejs1.1.css">
</head>
<body>
  <h2>Live Character Counter</h2>
```

<textarea id="textInput" placeholder="Type something..."></textarea>

Characters: 0

<script src="scrpit1.1.js"></script>

</body>

</html>

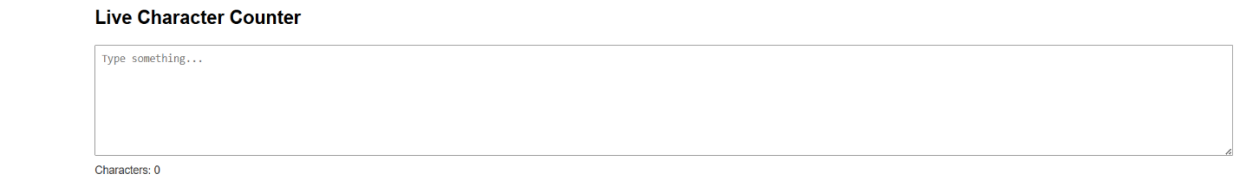
- CSS CODE

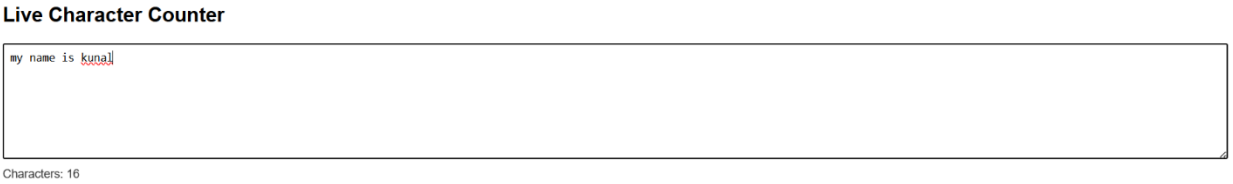
```css
body {
    font-family: Arial, sans-serif;
    margin: 40px;
  }

  textarea {
    width: 100%;
    height: 120px;
    padding: 8px;
    font-size: 14px;
  }

  .counter {
    margin-top: 6px;
    font-size: 14px;
    color: #333;
  }
```

- JAVASCRIPT CODE

```javascript
const textarea = document.getElementById("textInput");
const counter = document.getElementById("charCount");

textarea.addEventListener("input", () => {
  counter.textContent = textarea.value.length;
});
```

- OUTPUT





➢ JAVASCRIPT PRACTISE 2

- HTML CODE

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Dynamic Product Filter</title>
  <link rel="stylesheet" href="styles1.2.css">
</head>
<body>
  <h2>Dynamic Product Filter</h2>

  <label for="categoryFilter">Filter by Category:</label>
  <select id="categoryFilter">
    <option value="all">All</option>
    <option value="shoes">Shoes</option>
    <option value="shirts">Shirts</option>
    <option value="gadgets">Gadgets</option>
  </select>

  <div id="productList" class="product-list">
    <div class="product" data-category="shoes">Running Shoes</div>
```

```
    <div class="product" data-category="shirts">Casual Shirt</div>
 <div class="product" data-category="gadgets">Smartphone</div>
    <div class="product" data-category="shoes">Formal Shoes</div>
    <div class="product" data-category="shirts">T-Shirt</div>
    <div class="product" data-category="gadgets">Headphones</div>
  </div>

  <script src="script1.2.js"></script>
</body>
</html>
```

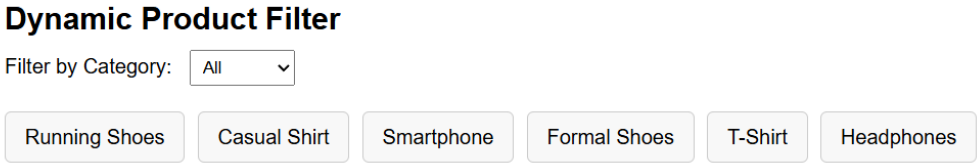
- CSS CODE

```
body {
  font-family: Arial, sans-serif;
  margin: 40px;
}

h2 {
  margin-bottom: 10px;
}

label {
  margin-right: 10px;
}

select {
  padding: 5px;
  margin-bottom: 20px;
}

.product-list {
  display: flex;
  flex-wrap: wrap;
  gap: 10px;
}

.product {
  padding: 10px 15px;
  border: 1px solid #ccc;
  border-radius: 5px;
  background: #f8f8f8;
}
```

- JAVASCRIPT CODE

```
const filterDropdown = document.getElementById("categoryFilter");
const products = document.querySelectorAll(".product");

filterDropdown.addEventListener("change", () => {
const selectedCategory = filterDropdown.value;

  products.forEach(product => {
 const productCategory = product.getAttribute("data-category");

    if (selectedCategory === "all" || productCategory ===
selectedCategory) {
      product.style.display = "block";
    } else {
      product.style.display = "none";
    }
  });
});
```

- OUTPUT



Dynamic Product Filter

Filter by Category: Shoes

Running Shoes

Formal Shoes

Dynamic Product Filter

Filter by Category: Shirts

Casual Shirt

T-Shirt

➢ JAVASCRIPT PRACTISE 3

- HTML CODE

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8" />
  <meta name="viewport" content="width=device-width, initial-scale=1.0"/>
  <title>Interactive SVG Drawing Tool</title>
  <link rel="stylesheet" href="styles1.3.css"/>
</head>
<body>
  <header>
    <h1>Interactive SVG Drawing Tool (SVG + Mouse Events)</h1>
    <div class="toolbar">
      <label>
        Shape:
        <select id="shapeSelect">
          <option value="line">Line</option>
          <option value="rect">Rectangle</option>
          <option value="ellipse">Ellipse</option>
        </select>
      </label>

      <label>
        Stroke:
        <input type="color" id="strokeColor" value="#2d6cdf" />
      </label>

      <label>
        Width:
        <input type="number" id="strokeWidth" min="1" max="20" value="2"
/>
   </label>

      <label class="fill-toggle">
        Fill:
        <input type="color" id="fillColor" value="#000000" />
        <input type="checkbox" id="fillEnable" />
        <span>enable</span>
      </label>

      <button id="clearBtn" type="button">Clear Canvas</button>
    </div>
```

```
  </header>

  <main>
    <div class="canvas-wrap">
      <!-- SVG drawing area -->
      <svg id="drawingArea" width="900" height="520" viewBox="0 0 900 520"
tabindex="0" aria-label="SVG drawing canvas">
        <!-- Optional background grid -->
        <defs>
          <pattern id="grid" width="20" height="20"
patternUnits="userSpaceOnUse">
          <path d="M 20 0 L 0 0 0 20" fill="none" stroke="rgba(0,0,0,.08)"
stroke-width="1"/>
          </pattern>
        </defs>
        <rect x="0" y="0" width="100%" height="100%" fill="url(#grid)"/>
        <!-- All shapes will be appended into this group -->
        <g id="shapesLayer"></g>
      </svg>
    </div>
    <p class="hint">
      Tip: Choose a shape, then click and drag on the canvas to draw.
Release to finish. Repeat to draw multiple shapes.
    </p>
  </main>

  <script src="script1.3.js"></script>
</body>
</html>
```

- CSS CODE

```
* { box-sizing: border-box; }

body {
  margin: 0;
  font-family: system-ui, -apple-system, Segoe UI, Roboto, Arial, sans-
serif;
  color: #1f2937;
  background: #f7fafc;
}

header {
  background: #ffffff;
  border-bottom: 1px solid #e5e7eb;
  padding: 16px 20px;
```

```
  }

  h1 {
    margin: 0 0 10px 0;
    font-size: 18px;
    font-weight: 600;
  }

  .toolbar {
    display: flex;
    flex-wrap: wrap;
    gap: 12px;
    align-items: center;
  }

  .toolbar label {
    display: inline-flex;
    align-items: center;
    gap: 8px;
    font-size: 14px;
  }

  .fill-toggle {
    display: inline-flex;
  align-items: center;
    gap: 6px;
}

  button {
    appearance: none;
    border: 1px solid #cbd5e1;
    background: #fff;
    padding: 8px 12px;
    border-radius: 8px;
    cursor: pointer;
    font-size: 14px;
  }
  button:hover { background: #f1f5f9; }

  main {
    padding: 18px 20px 28px;
  }

  .canvas-wrap {
    background: #ffffff;
```

```
  border: 1px solid #e5e7eb;
  border-radius: 12px;
  padding: 10px;
  overflow: auto;
  box-shadow: 0 2px 10px rgba(0,0,0,.04);
}

svg#drawingArea {
  display: block;
  border-radius: 8px;
  outline: none;
  background: #fff;
}


svg#drawingArea.drawing { cursor: crosshair; }

.hint {
  color: #6b7280;
  font-size: 13px;
  margin-top: 10px;
}
```

- JAVASCRIPT CODE

```
const svg = document.getElementById("drawingArea");
const layer = document.getElementById("shapesLayer");

const shapeSelect  =
document.getElementById("shapeSelect");
const strokeColor  =
document.getElementById("strokeColor");
const strokeWidth  =
document.getElementById("strokeWidth");
const fillColor    =
document.getElementById("fillColor");
```

```
const fillEnable   =
document.getElementById("fillEnable");
const clearBtn     =
document.getElementById("clearBtn");

let isDrawing = false;
let start = { x: 0, y: 0 };
let currentEl = null;
const SVG_NS = "http://www.w3.org/2000/svg";

function getSvgPoint(evt) {
  const rect = svg.getBoundingClientRect();
  return {
    x: evt.clientX - rect.left,
    y: evt.clientY - rect.top
  };
}

function styleElement(el) {
  el.setAttribute("stroke", strokeColor.value);
  el.setAttribute("stroke-width", strokeWidth.value);
  el.setAttribute("vector-effect", "non-scaling-
stroke");
  if (fillEnable.checked) {
    el.setAttribute("fill", fillColor.value);
    el.setAttribute("fill-opacity", 0.2);
  } else {
    el.setAttribute("fill", "none");
  }
}

svg.addEventListener("mousedown", (evt) => {

  isDrawing = true;
```

```
  svg.classList.add("drawing");
  start = getSvgPoint(evt);

  const type = shapeSelect.value;

  if (type === "line") {
    currentEl = document.createElementNS(SVG_NS,
"line");
    currentEl.setAttribute("x1", start.x);
    currentEl.setAttribute("y1", start.y);
    currentEl.setAttribute("x2", start.x);
    currentEl.setAttribute("y2", start.y);
  } else if (type === "rect") {
    currentEl = document.createElementNS(SVG_NS,
"rect");
    currentEl.setAttribute("x", start.x);
    currentEl.setAttribute("y", start.y);
    currentEl.setAttribute("width", 0);
    currentEl.setAttribute("height", 0);
  } else if (type === "ellipse") {
    currentEl = document.createElementNS(SVG_NS,
"ellipse");
    currentEl.setAttribute("cx", start.x);
    currentEl.setAttribute("cy", start.y);
    currentEl.setAttribute("rx", 0);
    currentEl.setAttribute("ry", 0);
  }

  styleElement(currentEl);
  layer.appendChild(currentEl);
});

svg.addEventListener("mousemove", (evt) => {
  if (!isDrawing || !currentEl) return;
```

```
  const pos = getSvgPoint(evt);
  const type = shapeSelect.value;

  if (type === "line") {
    currentEl.setAttribute("x2", pos.x);
    currentEl.setAttribute("y2", pos.y);
  } else if (type === "rect") {
    const x = Math.min(pos.x, start.x);
    const y = Math.min(pos.y, start.y);
    const w = Math.abs(pos.x - start.x);
    const h = Math.abs(pos.y - start.y);
    currentEl.setAttribute("x", x);
    currentEl.setAttribute("y", y);
    currentEl.setAttribute("width", w);
    currentEl.setAttribute("height", h);
  } else if (type === "ellipse") {
    const rx = Math.abs(pos.x - start.x) / 2;
    const ry = Math.abs(pos.y - start.y) / 2;
    const cx = (pos.x + start.x) / 2;
    const cy = (pos.y + start.y) / 2;
    currentEl.setAttribute("cx", cx);
    currentEl.setAttribute("cy", cy);
    currentEl.setAttribute("rx", rx);
    currentEl.setAttribute("ry", ry);
  }
});

function endDrawing() {
  if (!isDrawing) return;
  isDrawing = false;
  svg.classList.remove("drawing");
```

```
  if (currentEl) {
    const tag = currentEl.tagName;
    let tooSmall = false;

    if (tag === "line") {
      const x1 = +currentEl.getAttribute("x1");
      const y1 = +currentEl.getAttribute("y1");
      const x2 = +currentEl.getAttribute("x2");
      const y2 = +currentEl.getAttribute("y2");
      const len = Math.hypot(x2 - x1, y2 - y1);
      tooSmall = len < 2;
    } else if (tag === "rect") {
      const w = +currentEl.getAttribute("width");
      const h = +currentEl.getAttribute("height");
      tooSmall = w < 2 || h < 2;
    } else if (tag === "ellipse") {
      const rx = +currentEl.getAttribute("rx");
      const ry = +currentEl.getAttribute("ry");
      tooSmall = rx < 1 || ry < 1;
    }

    if (tooSmall) currentEl.remove();
  }

  currentEl = null;
}

svg.addEventListener("mouseup", endDrawing);
svg.addEventListener("mouseleave", endDrawing);

clearBtn.addEventListener("click", () => {
  while (layer.firstChild)
layer.removeChild(layer.firstChild);
});
```

```
svg.addEventListener("touchstart", (e) => {
  e.preventDefault();
  const t = e.touches[0];
  svg.dispatchEvent(new MouseEvent("mousedown", {
clientX: t.clientX, clientY: t.clientY }));
}, { passive: false });

svg.addEventListener("touchmove", (e) => {
  e.preventDefault();
  const t = e.touches[0];
  svg.dispatchEvent(new MouseEvent("mousemove", {
clientX: t.clientX, clientY: t.clientY }));
}, { passive: false });

svg.addEventListener("touchend", (e) => {
  e.preventDefault();
  svg.dispatchEvent(new MouseEvent("mouseup"));
}, { passive: false });
```

- OUTPUT

Interactive SVG Drawing Tool (SVG + Mouse Events)

Shape: Line Stroke: Width: 2 Fill: enable Clear Canvas