



DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

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Report File FULL STACK

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Section/Group: 23AIT-KRG-G2

Semester: 5th

Subject Code: 23CSP-339

Subject Name: Full Stack

Aim

To create an interactive SVG-based drawing tool using DOM and mouse event handling in JavaScript.

Objectives

- Create an SVG drawing area in HTML
 - Handle mouse events to draw shapes (e.g., circles)
 - Allow dynamic drawing using createElementNS()
 - Implement optional color selection and undo functionality
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Hardware/Software Requirements

Category Requirements

Hardware i3+ CPU, 4GB RAM, 1920x1080 display

Software VS Code, Chrome/Firefox, Live Server

About the Experiment

Concepts Covered:

- SVG elements in HTML
- Event handling (mousedown, mousemove, mouseup)
- Creating SVG elements dynamically with createElementNS
- Coordinate tracking and shape rendering
- Undo stack implementation

Real-world Applications:

- Drawing tools in design apps like Adobe Illustrator or Figma
 - Vector-based user input on web platforms
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Code Implementation

◆ HTML

```
<svg id="canvas" width="500" height="400" style="border:1px solid black;"></svg>
<button onclick="undo()">Undo</button>
```

◆ JavaScript

```
const svg = document.getElementById('canvas');
let drawings = [];
```

```
svg.addEventListener('mousedown', (e) => {
  const circle = document.createElementNS('http://www.w3.org/2000/svg', 'circle');
  circle.setAttribute('cx', e.offsetX);
  circle.setAttribute('cy', e.offsetY);
  circle.setAttribute('r', '8');
  circle.setAttribute('fill', 'blue');
  svg.appendChild(circle);
  drawings.push(circle);
});
```

```
function undo() {
  const last = drawings.pop();
  if (last) {
    svg.removeChild(last);
  }
}
```

Expected Output

- A blank SVG canvas
- User clicks to draw circles at mouse positions
- Circles appear dynamically
- Undo button removes the last drawn circle

Undo