DEPARTMENT OF
COMPUTER SCIENCE & ENGINEERING

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# Report File FULL STACK


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**Semester:** 5th

**Subject Code:** 23CSP-339

**Subject Name:** Full Stack


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## Aim

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

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## 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 |

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## 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);
  }
}
```

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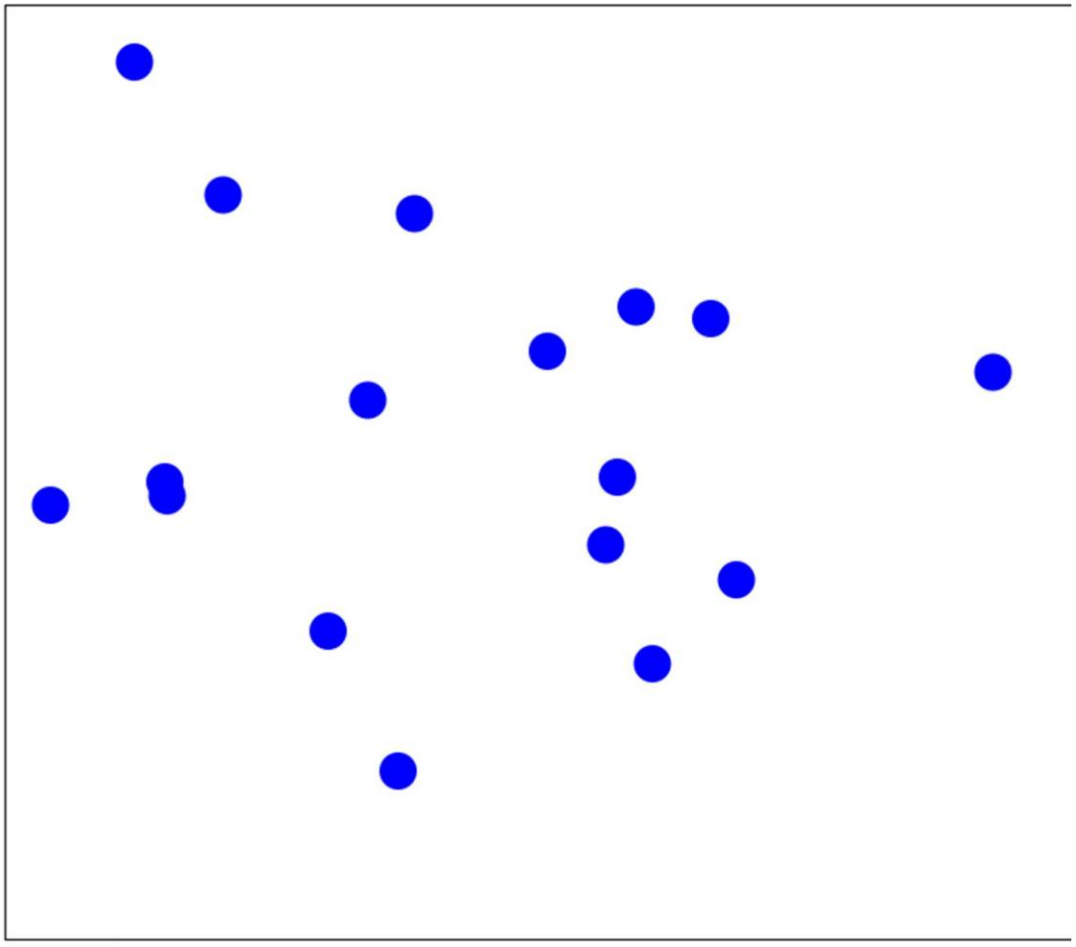
**Expected Output**

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



Undo