Assignment – 4

Index .html

```html
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>Advanced Calculator</title>
<style>
  .title {
  text-align: center;
  color: white;
  margin-bottom: 20px;
  font-size: 26px;
  letter-spacing: 1px;
}
* {
  margin: 0;
  padding: 0;
  box-sizing: border-box;
  font-family: "Segoe UI", sans-serif;
}
body {
  height: 100vh;
  display: flex;
  justify-content: center;
  align-items: center;
  background: linear-gradient(135deg, #5f72bd, #9b23ea);
}
/* Calculator Container */
.calculator {
  <h2 class="title">Simple Calculator</h2>
  width: 450px;
  padding: 30px;
  border-radius: 25px;
  background: rgba(255, 255, 255, 0.12);
  backdrop-filter: blur(20px);
  box-shadow: 0 25px 50px rgba(0, 0, 0, 0.35);
  animation: fadeIn 0.6s ease-in-out;
```

```css
}
/* Animation */
@keyframes fadeIn {
    from { opacity: 0; transform: scale(0.9); }
    to { opacity: 1; transform: scale(1); }
}
/* Display */
.display {
    height: 80px;
    background: #111;
    color: #00ffd5;
    font-size: 28px;
    text-align: right;
    padding: 20px;
    border-radius: 15px;
    margin-bottom: 25px;
    overflow-x: auto;
}
/* Buttons Grid */
.buttons {
    display: grid;
    grid-template-columns: repeat(4, 1fr);
    gap: 15px;
}
/* General Button */
button {
    padding: 20px;
    font-size: 20px;
    border-radius: 15px;
    border: none;
    cursor: pointer;
    transition: all 0.2s ease;
    background: rgba(255,255,255,0.2);
    color: white;
}
/* Hover */
button:hover {
    transform: translateY(-3px);
    background: rgba(255,255,255,0.35);
}
/* Click */
```

```css
button:active {
  transform: scale(0.95);
}
/* Special Buttons */
.operator {
  background: #ff6b6b;
}
.equal {
  background: #00e676;
  color: black;
  grid-column: span 2;
}
.clear {
  background: #ff3d3d;
}
.delete {
  background: #ffa502;
}
/* Responsive */
@media (max-width: 500px) {
  .calculator {
    width: 95%;
  }
}
</style>
</head>
<body>
<div class="calculator">
  <h2 class="title">Simple Calculator</h2>
  <div id="display" class="display">0</div>
  <div class="buttons">
    <button class="clear" onclick="clearDisplay()">C</button>
    <button class="delete" onclick="deleteLast()">DEL</button>
    <button class="operator" onclick="append('/')">÷</button>
    <button class="operator" onclick="append('*')">×</button>
    <button onclick="append('7')">7</button>
    <button onclick="append('8')">8</button>
    <button onclick="append('9')">9</button>
    <button class="operator" onclick="append('-')">−</button>
    <button onclick="append('4')">4</button>
    <button onclick="append('5')">5</button>
```

```html
    <button onclick="append('6')">6</button>
    <button class="operator" onclick="append('+')">+</button>
    <button onclick="append('1')">1</button>
    <button onclick="append('2')">2</button>
    <button onclick="append('3')">3</button>
    <button onclick="append('.')">.</button>
    <button onclick="append('0')">0</button>
    <button class="equal" onclick="calculate()">=</button>
  </div>
</div>
<script>
let display = document.getElementById("display");
/* Append values */
function append(value) {
  if (display.innerText === "0") {
    display.innerText = value;
  } else {
    display.innerText += value;
  }
}
/* Clear */
function clearDisplay() {
  display.innerText = "0";
}
/* Delete */
function deleteLast() {
  display.innerText = display.innerText.slice(0, -1);
  if (display.innerText === "") {
    display.innerText = "0";
  }
}
/* Calculate */
function calculate() {
  try {
    let expression = display.innerText;
    // Validation: only numbers and operators allowed
    if (!/^[0-9+\-*/.]+$/.test(expression)) {
      alert("Invalid Input!");
      return;
    }
    let result = eval(expression);
```

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      if (!isFinite(result)) {
        alert("Cannot divide by zero!");
        return;
      }
      display.innerText = result;
    } catch {
      alert("Invalid Calculation!");
    }
}
/* Keyboard Support */
document.addEventListener("keydown", function(event) {
  if ((event.key >= "0" && event.key <= "9") ||
    ["+", "-", "*", "/", "."].includes(event.key)) {
    append(event.key);
  }
  else if (event.key === "Enter") {
    calculate();
  }
  else if (event.key === "Backspace") {
    deleteLast();
  }
  else if (event.key === "Escape") {
    clearDisplay();
  }
});
</script>
</body>
</html>
```

--Output: