Homework 8

01286233 Web Programming

Software Engineering Program,

Department of Computer Engineering,

School of Engineering, KMITL

67011352 Theepakorn Phayonrat

Code

HW8_67011352_Theepakorn.html

```html
<!DOCTYPE html>
<html>
    <head>
        <meta charset="utf-8">
        <title>Calculator</title>
        <link rel="stylesheet" href="HW8_67011352_Theepakorn.css">
    </head>
    <body>
        <table id="myTable">
            <tr>
                <td colspan= "7" style="text-align: right;">
                    <label id="result">0</label>
                </td>
            </tr>
            <tr>
                <td colspan="3" disabled>Scientific</td>
                <td id="Backspace"><</td>
                <td id="/">/</td>
                <td id="*">*</td>
                <td id="-" style="font-family: 'Courier New',
                  ↪  Courier, monospace; font-weight:bold;">-</td>
            </tr>
            <tr>
                <td id="sin" style="font-weight: bold;">sin</td>
                <td id="sqrt" style="font-weight: bold;">x</td>
                <td id="mc">mc</td>
                <td id="7">7</td>
                <td id="8">8</td>
                <td id="9">9</td>
                <td id="+" rowspan="2">+</td>
            </tr>
            <tr>
                <td id="cos" style="font-weight: bold;">cos</td>
                <td id="square" style="font-weight: bold;">x²</td>
                <td id="m+">m+</td>
                <td id="4">4</td>
                <td id="5">5</td>
```

1

```html
            <td id="6">6</td>
        </tr>
        <tr>
            <td id="tan" style="font-weight: bold;">tan</td>
            <td id="1/x" style="font-weight: bold;">1/x</td>
            <td id="m-">m-</td>
            <td id="1">1</td>
            <td id="2">2</td>
            <td id="3">3</td>
            <td id="Enter" rowspan="2">=</td>
        </tr>
        <tr>
            <td id="pi" style="font-weight: bold;"></td>
            <td id="factorial" style="font-weight:
            ↪  bold;">x!</td>
            <td id="mr">mr</td>
            <td id="0" colspan="2">0</td>
            <td id="c" style="font-weight: bold;">C</td>
        </tr>
    </table>

    <script src="HW8_67011352_Theepakorn.js"></script>
    </body>
</html>
```

HW8_67011352_Theepakorn.css

```css
body, table {
    margin: 0;
    padding: 0;
}

body {
    font-family: Arial, sans-serif;
    background-color: #f0f0f0;
    display: flex;
    justify-content: center;
    align-items: center;
    height: 100vh;
}

table {
    border-collapse: collapse;
    background-color: #fff;
    border-radius: 10px;
    box-shadow: 0 0 10px rgba(0, 0, 0, 0.2);
}

td {
    width: 50px;
    height: 50px;
    text-align: center;
    font-size: 20px;
    border: 1px solid #ccc;
    cursor: pointer;
}

#result {
    font-size: 24px;
    text-align: right;
    padding: 10px;
    border-bottom: 1px solid #ccc;
}

td[colspan="7"] {
    background-color: #f2f2f2;
```

```
}

td:hover {
    background-color: #e0e0e0;
}

td:active {
    background-color: #ccc;
}
```

HW8_67011352_Theepakorn.js

```javascript
let result;
let reset = true;
let operatorPressed = false;
let text = "0";
let numbers = ["0"];
let operator = "";
let memory = 0;

document.addEventListener("DOMContentLoaded", () => {
    result = document.getElementById("result");
});

document.addEventListener("keypress", (event) => {
    const key = String.fromCharCode(event.charCode);

    if (key >= "0" && key <= "9") {
        if (operatorPressed) {
            numbers.push("");
            text = "";
            operatorPressed = false;
        }

        if (reset) {
            text = key;
            reset = false;
        } else {
            text += key;
        }
        numbers[numbers.length - 1] = text;
    } else if (key == "+" || key == "-" || key == "*" || key ==
    ↪   "/") {
        if (numbers.length == 2) {
            calculate();
        }
        operatorPressed = true;
        operator = key;
    } else if (key == "<") {
        text = text.slice(0, -1);
        if (text == "") {
```

```
            if (numbers.length > 1) {
                numbers.pop();
                operatorPressed = false;
                operator = "";
                text = numbers[numbers.length - 1];
            } else {
                text = "0";
                reset = true;
            }
        }
        numbers[numbers.length - 1] = text;

    } else if (key == "=") {
        calculate();
    } else if (key == "c") {
        reset = true;
        operatorPressed = false;
        text = "0";
        numbers = ["0"];
        operator = "";
    }

    result.innerHTML = text;
})

function calculate() {
    if (numbers.length == 2) {
        let ans;
        const b = parseFloat(numbers.pop());
        const a = parseFloat(numbers.pop());
        switch (operator) {
            case "+":
                ans = a + b;
                break;
            case "-":
                ans = a - b;
                break;
            case "*":
                ans = a * b;
                break;
            case "/":
```

```javascript
                ans = a / b;
                break;
        }
        numbers = [ans];
        text = "" + ans;
        operatorPressed = false;
        operator = "";
    }
}

document.getElementById("sin").addEventListener("click", () => {
    let num = parseFloat(text);
    num = Math.sin(num);
    text = num.toFixed(2);
    numbers[numbers.length - 1] = text;
    result.innerHTML = text;
});
document.getElementById("cos").addEventListener("click", () => {
    let num = parseFloat(text);
    num = Math.cos(num);
    text = num.toFixed(2);
    numbers[numbers.length - 1] = text;
    result.innerHTML = text;
});
document.getElementById("tan").addEventListener("click", () => {
    let num = parseFloat(text);
    num = Math.tan(num);
    text = num.toFixed(2);
    numbers[numbers.length - 1] = text;
    result.innerHTML = text;
});
document.getElementById("pi").addEventListener("click", () => {
    text = Math.PI.toFixed(2);
    numbers[numbers.length - 1] = text;
    result.innerHTML = text;
});
document.getElementById("sqrt").addEventListener("click", () => {
    let num = parseFloat(text);
    num = Math.sqrt(num);
    text = num.toFixed(2);
    numbers[numbers.length - 1] = text;
```

```javascript
        result.innerHTML = text;
});
document.getElementById("square").addEventListener("click", () => {
    let num = parseFloat(text);
    num = Math.pow(num, 2);
    text = num.toFixed(2);
    numbers[numbers.length - 1] = text;
    result.innerHTML = text;
});
document.getElementById("1/x").addEventListener("click", () => {
    let num = parseFloat(text);
    num = 1.0 / num;
    text = num.toFixed(2);
    numbers[numbers.length - 1] = text;
    result.innerHTML = text;
});
document.getElementById("factorial").addEventListener("click", ()
   ↪  => {
    let num = parseFloat(text);
    if (num - Math.floor(num) == 0.0) {
        num = factorial(num);
        text = "" + num;
        numbers[numbers.length - 1] = text;
        result.innerHTML = text;
    }
});

function factorial(n) {
    if (n < 2) return 1;
    return n * (factorial(n - 1));
}

document.getElementById("mc").addEventListener("click", () => {
    memory = 0;
});
document.getElementById("m+").addEventListener("click", () => {
    memory += parseFloat(text);
});
document.getElementById("m-").addEventListener("click", () => {
    let num = parseFloat(text);
    num -= memory;
```
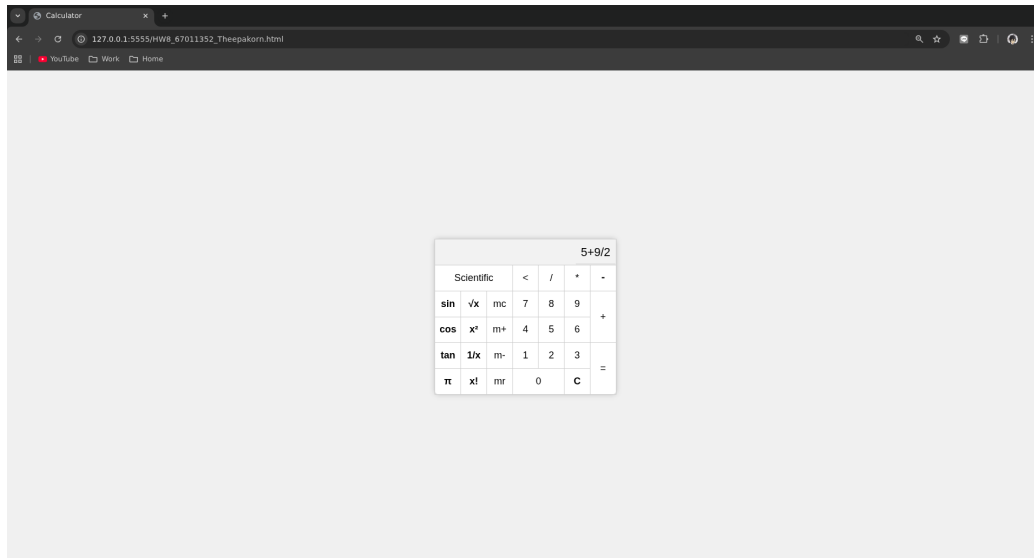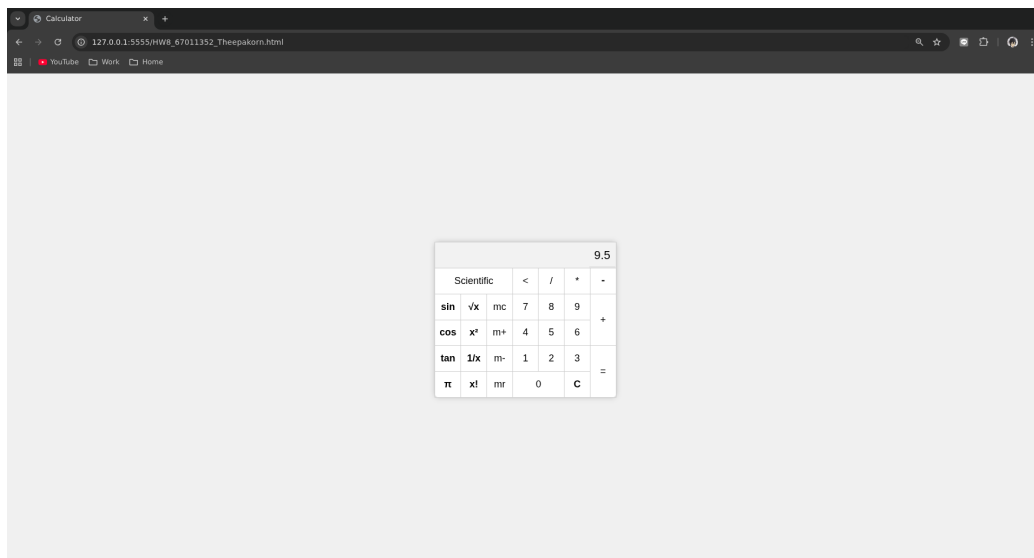
```javascript
    memory = num;
});
document.getElementById("mr").addEventListener("click", () => {
    text = "" + memory;
    numbers[numbers.length - 1] = text;
    result.innerHTML = text;
});
```
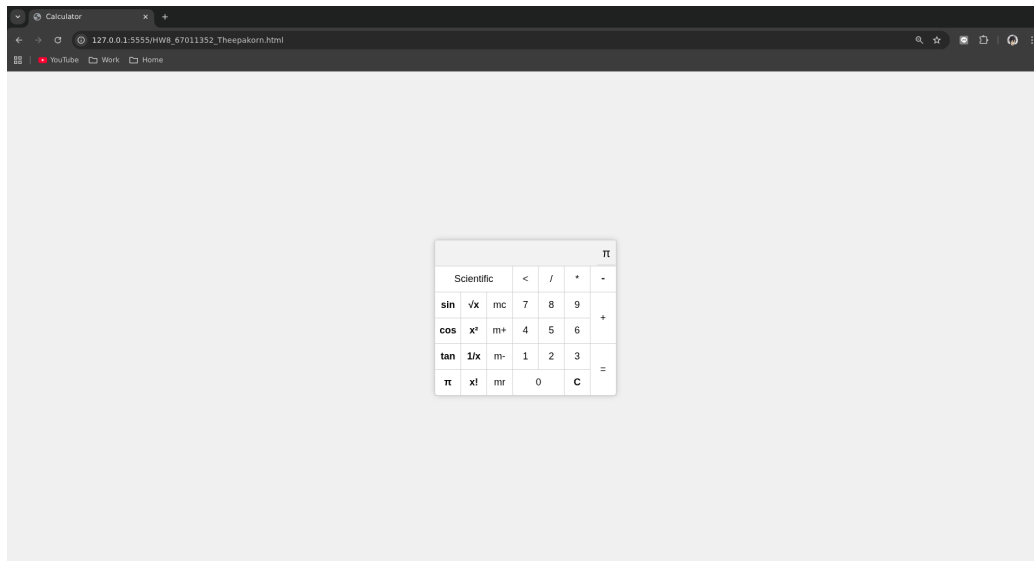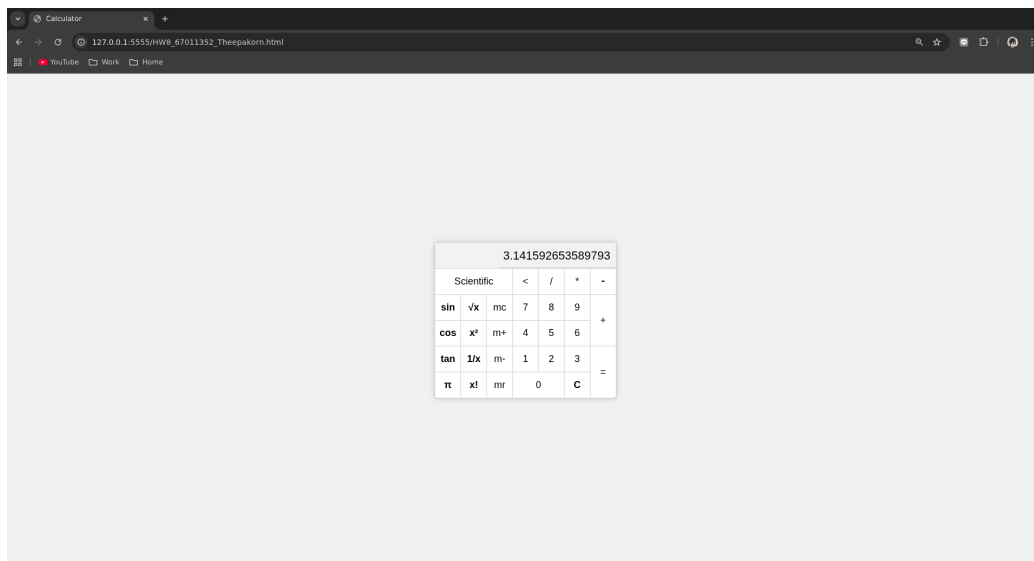
Result

Order of Operation Input
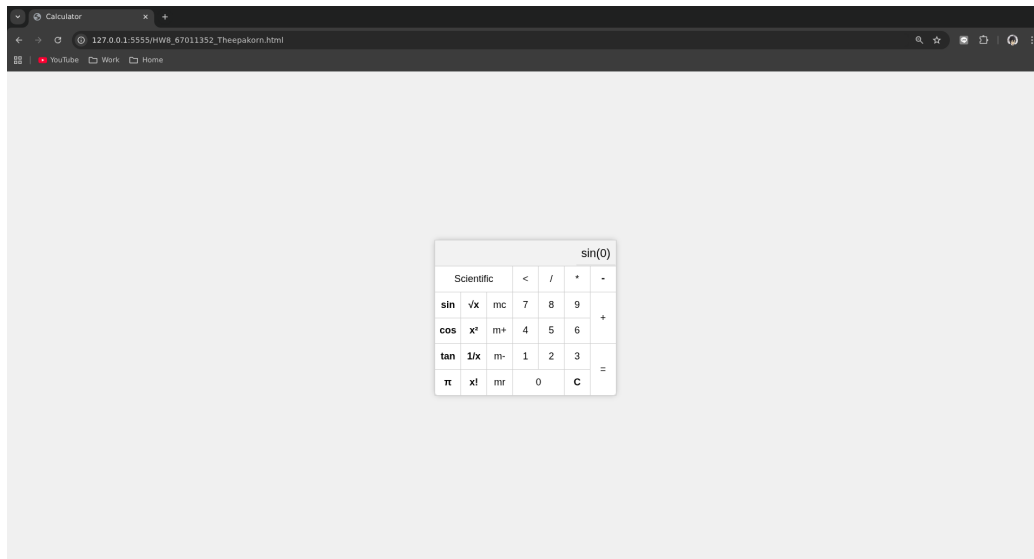

Order of Operation Output

π Input

π Output

Trigonometry Function Input

Trigonometry Function Output