**SCS2208 RAPID APPLICATION DEVELOPMENT**

JavaScript lab sheet 02

**Name:** Nethsara Sandeepa Elvitigala

**Index No:** 20000482

**Reg No:** 2020/CS/048

CSS files aren't included because of huge size, this repository: - contains all the answer files with HTML,JS and CSS.

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# Question 1

## HTML

<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta http-equiv="X-UA-Compatible" content="IE=edge">

    <meta name="viewport" content="width=device-width, initial-scale=1.0">

    <link rel="stylesheet" href="./style.css">

    <title>RAD JS Lab sheet Basic JS part 2 question 1</title>

</head>

<body>

    <form class="form">

        <div class="form-input">

            <label for="name">Name:</label>

            <input type="text" name="name" id="name" placeholder="Insert a name">

        </div>

        <div class="form-input">

            <label for="hometown">Hometown:</label>

            <input type="text" name="hometown" id="hometown" placeholder="Insert hometown">

        </div>

        <button type="submit" class="form-btn">Submit</button>

    </form>

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

</body>

</html>

## JS

const addressForm = document.**querySelector**('.form');

addressForm.**addEventListener**('submit', (*event*) => {

    event.**preventDefault**();

    const formData = new **FormData**(addressForm);

    const address = {

        name: formData.**get**('name'),

        hometown: formData.**get**('hometown'),

    };

**alert**(`Name: ${address.name}\nHometown: ${address.hometown}`);

})

# Question 2

## HTML

<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta http-equiv="X-UA-Compatible" content="IE=edge">

    <meta name="viewport" content="width=device-width, initial-scale=1.0">

    <link rel="stylesheet" href="./style.css">

    <title>RAD JS Lab sheet Basic JS part 2 question 2</title>

</head>

<body>

    <div class="time-wrapper">

        <p class="current-time"></p>

        <p class="remaining-time"></p>

    </div>

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

</body>

</html>

## JavaScript

const currentTime = document.**querySelector**(".current-time");

const remainingTime = document.**querySelector**(".remaining-time");

function **getCurrentTimeWithSuffix**(*hours*, *minutes*) {

  minutes = minutes < 10 ? "0" + minutes : minutes;

  const suffix = hours >= 12 ? "PM" : "AM";

  return `Now the time is ${hours}.${minutes} ${suffix}`;

}

function **getRemainingTimeText**(*hour*, *minutes*) {

  let remainingHours;

  if (minutes === 0) {

    remainingHours = 24 - hour;

  } else {

    remainingHours = 23 - hour;

  }

  let remainingMinutes;

  if (minutes !== 0) {

    remainingMinutes = 60 - minutes;

  }

  return `Remains ${remainingHours} hours${

    remainingMinutes ? " and " + remainingMinutes + " minutes" : " "

  } more...`;

}

**setInterval**(() => {

  const date = new **Date**();

  const minutes = date.**getMinutes**();

  const hours = date.**getHours**();

  currentTime.innerText = **getCurrentTimeWithSuffix**(hours, minutes);

  remainingTime.innerText = **getRemainingTimeText**(hours, minutes);

}, 60000);

# Question 2

## HTML

<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta http-equiv="X-UA-Compatible" content="IE=edge">

    <meta name="viewport" content="width=device-width, initial-scale=1.0">

    <link rel="stylesheet" href="./style.css">

    <title>RAD JS Lab sheet Basic JS part 2 question 3</title>

</head>

<body>

    <form class="form">

        <div class="form-input">

            <label for="name">Name:</label>

            <input type="text" name="name" id="name" placeholder="Insert name" required>

        </div>

        <div class="form-input">

            <label for="birthday">Birthday:</label>

            <input type="date" name="birthday" id="birthday" placeholder="Insert birthday" required>

        </div>

        <button type="submit" class="form-btn">Submit</button>

    </form>

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

</body>

</html>

## JavaScript

const birthdayForm = document.**querySelector**('.form');

const **getAge** = (*birthdate*)  => new **Date**().**getFullYear**() - new **Date**(birthdate).**getFullYear**();

birthdayForm.**addEventListener**('submit', (*event*) => {

    event.**preventDefault**();

    const formData = new **FormData**(birthdayForm);

    const birthday = {

        name: formData.**get**('name'),

        date: formData.**get**('birthday'),

    };

**alert**(`Name: ${birthday.name}\nAge: ${**getAge**(birthday.date)}`);

})

# Question 4

## HTML

<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta http-equiv="X-UA-Compatible" content="IE=edge">

    <meta name="viewport" content="width=device-width, initial-scale=1.0">

    <link rel="stylesheet" href="./style.css">

    <title>RAD JS Lab sheet Basic JS part 2 question 4</title>

</head>

<body>

    <form class="form">

        <div class="form-input">

            <label for="width">Width:</label>

            <input type="number" step="0.01" min="0" name="width" id="width" placeholder="Enter width of the rectangle" required>

        </div>

        <div class="form-input">

            <label for="height">Height:</label>

            <input type="number" step="0.01" min="0" name="height" id="height" placeholder="Enter height of the rectangle" required>

        </div>

        <p class="form-text">

            Enter width, hight to calculate area

        </p>

        <button type="submit" class="form-btn">Calculate</button>

    </form>

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

</body>

</html>

## JavaScript

const areaForm = document.**querySelector**('.form');

const areaText = document.**querySelector**('.form .form-text');

areaForm.**addEventListener**('submit', (*event*) => {

    event.**preventDefault**();

    const formData = new **FormData**(areaForm);

    const height = **Number**(formData.**get**('height'))

    const width = **Number**(formData.**get**('width'))

    areaText.innerHTML = `Area of the rectangle is ${width \* height}cm<sup>2</sup>`;

})

# Question 5

## HTML

<!DOCTYPE html>

<html lang="en">

  <head>

    <meta charset="UTF-8" />

    <meta http-equiv="X-UA-Compatible" content="IE=edge" />

    <meta name="viewport" content="width=device-width, initial-scale=1.0" />

    <link rel="stylesheet" href="./style.css" />

    <title>RAD JS Lab sheet Basic JS part 2 question 5</title>

  </head>

  <body>

    <div class="container">

        <h1 class="action">Purchase your item</h1>

        <div class="card">

            <header class="card-header">Free trial</header>

            <div class="card-body">

              <ul>

                <li>help you to design</li>

                <li>provide security</li>

                <li>manage your plans</li>

              </ul>

            </div>

            <footer class="card-footer">

              <button class="btn" id="try-now">Try it now</button>

            </footer>

          </div>

    </div>

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

  </body>

</html>

## JavaScript

const tryNowButton = document.**getElementById**("try-now");

tryNowButton.**addEventListener**("click", function () {

  tryNowButton.classList.**add**('bg-blue')

**setTimeout**(function () {

    tryNowButton.classList.**remove**('bg-blue')

  }, 1000)

});

# Question 6

## HTML

<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta http-equiv="X-UA-Compatible" content="IE=edge">

    <meta name="viewport" content="width=device-width, initial-scale=1.0">

    <link rel="stylesheet" href="./style.css">

    <title>RAD JS Lab sheet Basic JS part 2 question 6</title>

</head>

<body>

    <form class="form">

        <div class="form-input">

            <label for="squared">Number:</label>

            <input type="number" step="0.01" min="0" name="squared" id="squared" placeholder="Enter the number" required>

        </div>

        <button type="submit" class="form-btn">Find root</button>

    </form>

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

</body>

</html>

## JavaScript

const squaredForm = document.**querySelector**('.form');

squaredForm.**addEventListener**('submit', (*event*) => {

    event.**preventDefault**();

    const formData = new **FormData**(squaredForm);

    const squared = **Number**(formData.**get**('squared'));

**alert**(`Square root of ${squared} = ${Math.**sqrt**(squared)}`);

})

# Question 7

## HTML

<!DOCTYPE html>

<html lang="en">

  <head>

    <meta charset="UTF-8" />

    <meta http-equiv="X-UA-Compatible" content="IE=edge" />

    <meta name="viewport" content="width=device-width, initial-scale=1.0" />

    <link rel="stylesheet" href="./style.css" />

    <title>RAD JS Lab sheet Basic JS part 2 question 7</title>

  </head>

  <body>

    <div class="container">

      <h1 class="action">Available Hotel Packages</h1>

      <form class="card">

        <div class="card-body">

          <div class="form-check-input">

            <input

              class="package-check"

              type="checkbox"

              name="wedding-package"

              id="wedding-package"

            />

            <label for="wedding-package">Wedding Package</label>

          </div>

          <div class="form-check-input">

            <input

              class="package-check"

              type="checkbox"

              name="birthday-package"

              id="birthday-package"

            />

            <label for="birthday-package">Birthday Package</label>

          </div>

          <div class="form-check-input">

            <input

              class="package-check"

              type="checkbox"

              name="normal-function-package"

              id="normal-function-package"

            />

            <label for="normal-function-package">Normal Function Package</label>

          </div>

          <div class="form-check-input">

            <input

              class="package-check"

              type="checkbox"

              name="day-out-package"

              id="day-out-package"

            />

            <label for="day-out-package">Day out Package</label>

          </div>

        </div>

        <footer class="card-footer">

          <button type="submit" class="btn" id="try-now">Submit</button>

        </footer>

      </form>

    </div>

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

  </body>

</html>

## JavaScript

const packageCheckBoxes = document.**querySelectorAll**(".package-check");

function **disableAllExceptOne**(*enabled*) {

  packageCheckBoxes.**forEach**((*box*) => {

    if (box !== enabled) {

      box.disabled = true;

      box.parentElement.classList.**add**('disabled')

    }

  });

}

function **enableAll**() {

  packageCheckBoxes.**forEach**((*checkBox*) => {

    checkBox.disabled = false;

    checkBox.parentElement.classList.**remove**('disabled')

  });

}

packageCheckBoxes.**forEach**((*checkBox*) => {

  checkBox.**addEventListener**("change", (*e*) => {

    if (checkBox.checked) {

**disableAllExceptOne**(checkBox);

    } else {

**enableAll**()

    }

  });

});

# Question 8

## HTML

<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta http-equiv="X-UA-Compatible" content="IE=edge">

    <meta name="viewport" content="width=device-width, initial-scale=1.0">

    <link rel="stylesheet" href="./style.css">

    <title>RAD JS Lab sheet Basic JS part 2 question 8</title>

</head>

<body>

    <h1 style="text-align: center;">On mouse out, answer would be calculated</h1>

    <form class="form">

        <div class="form-input">

            <label for="amount">Insert the amount:</label>

            <input type="number" step="0.1" min="0" name="amount" id="amount" placeholder="Enter the amount" required>

        </div>

        <p id="twenty-percent"></p>

        <p id="total"></p>

    </form>

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

</body>

</html>

## JavaScript

const form = document.**querySelector**('.form');

const amountElement = document.**getElementById**('amount')

const percentElement = document.**getElementById**('twenty-percent')

const totalElement = document.**getElementById**('total')

form.**addEventListener**('mouseout', () => {

    let value = +amountElement.value

    if(**isNaN**(value)) {

        value = 0

    }

    const percentage = 0.2 \* value

    const total = value + percentage

    percentElement.innerText = `20% of value: ${percentage}`

    totalElement.innerText = `Total: ${value}+${percentage} = ${total}`

})

# Question 9

## HTML

<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta http-equiv="X-UA-Compatible" content="IE=edge">

    <meta name="viewport" content="width=device-width, initial-scale=1.0">

    <link rel="stylesheet" href="./style.css">

    <title>RAD JS Lab sheet Basic JS part 2 question 9</title>

</head>

<body>

    <form class="form">

        <div class="form-input">

            <label for="subject">Subject:</label>

            <input type="text"name="subject" id="subject" placeholder="Enter subject" required>

        </div>

        <div class="form-input">

            <label for="marks">Marks:</label>

            <input type="number" step="1" min="0" max="100" name="marks" id="marks" placeholder="Enter marks" required>

        </div>

        <button type="submit" class="form-btn">Results</button>

        <p class="form-text">

            Enter subject, marks to see if you're failed or not

        </p>

    </form>

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

</body>

</html>

## JavaScript

const marksForm = document.**querySelector**('.form');

const marksText = document.**querySelector**('.form .form-text');

const subjectInput = document.**getElementById**('subject')

const marksInput = document.**getElementById**('marks')

subjectInput.**addEventListener**('input', () => {

    marksInput.placeholder = `Enter marks for ${subjectInput.value}`

})

marksForm.**addEventListener**('submit', (*event*) => {

    event.**preventDefault**();

    const formData = new **FormData**(marksForm);

    const subject = formData.**get**('subject')

    const marks = **Number**(formData.**get**('marks'))

    marksText.innerHTML = marks < 30 ? `Sorry, You have to work hard for ${subject} subject` : `Congrats! You've passed the test.`;

})

# Question 10

## HTML

<!DOCTYPE html>

<html lang="en">

  <head>

    <meta charset="UTF-8" />

    <meta http-equiv="X-UA-Compatible" content="IE=edge" />

    <meta name="viewport" content="width=device-width, initial-scale=1.0" />

    <link rel="stylesheet" href="./style.css" />

    <title>RAD JS Lab sheet Basic JS part 2 question 10</title>

  </head>

  <body>

    <div class="container">

      <div class="card">

        <header class="card-header">Calculator<sub>by Nethsara</sub></header>

        <div class="card-body">

          <div class="calculator">

            <input class="input"/>

            <button class="operator operator--add">+</button>

            <button class="operator operator--sub">-</button>

            <button class="operator operator--mul">x</button>

            <button class="operator operator--div">/</button>

            <button class="number number--7">7</button>

            <button class="number number--8">8</button>

            <button class="number number--9">9</button>

            <button class="number number--4">4</button>

            <button class="number number--5">5</button>

            <button class="number number--6">6</button>

            <button class="number number--1">1</button>

            <button class="number number--2">2</button>

            <button class="number number--3">3</button>

            <button class="number number--0">0</button>

            <button class="number number--dot">.</button>

            <button class="number number--AC">AC</button>

            <button class="equal">=</button>

          </div>

        </div>

      </div>

    </div>

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

  </body>

</html>

## JavaScript

*//setting up calculator object to handle all elements and methods*

const calculator = {

  numberButtons: (() => {

    const buttons = [];

    for (let index = 0; index < 10; index++) {

      buttons.**push**({

        el: document.**querySelector**(`.number.number--${index}`),

        number: index,

      });

    }

    return buttons;

  })(),

  operatorButtons: (() => {

    const operators = [];

    for (const op of ["add", "sub", "mul", "div"]) {

      operators.**push**({

        el: document.**querySelector**(`.operator.operator--${op}`),

        operator: op,

      });

    }

    return operators;

  })(),

  equalButton: document.**querySelector**(".equal"),

  acButton: document.**querySelector**(".number.number--AC"),

  dot: document.**querySelector**(".number.number--dot"),

  input: document.**querySelector**("input"),

  allowedChars: ["0", "1", "2", "3", "4", "5", "6", "7", "8", "9", "-", "."],

  currentValue: null,

  currentOperator: null,

};

*//preventing any characters except those in allowedChards to be entered*

calculator.input.**addEventListener**("keypress", (*e*) => {

  if (!calculator.allowedChars.**includes**(e.key)) {

    e.**preventDefault**();

    return false;

  }

});

*//make it so that digits can be entered at any caret position*

calculator.numberButtons.**forEach**((*btn*) => {

  btn.el.**addEventListener**("click", () => {

    let currentValue = calculator.input.value;

    const caretPosition = calculator.input.selectionStart;

    currentValue =

      currentValue.**slice**(0, caretPosition) +

      btn.number +

      currentValue.**slice**(caretPosition, currentValue.length);

    calculator.input.value = currentValue;

    calculator.input.**focus**();

    calculator.input.**setSelectionRange**(caretPosition + 1, caretPosition + 1);

  });

});

*//enable dot button*

calculator.dot.**addEventListener**("click", () => {

  let currentValue = calculator.input.value;

  const caretPosition = calculator.input.selectionStart;

  currentValue =

    currentValue.**slice**(0, caretPosition) +

    "." +

    currentValue.**slice**(caretPosition, currentValue.length);

  calculator.input.value = currentValue;

  calculator.input.**focus**();

  calculator.input.**setSelectionRange**(caretPosition + 1, caretPosition + 1);

});

*//managing operator buttons*

calculator.operatorButtons.**forEach**((*btn*) => {

  btn.el.**addEventListener**("click", () => {

    if (calculator.input.value == "") {

      calculator.currentOperator = btn.operator;

      console.**log**({ ...calculator });

    } else {

      if (calculator.currentValue && calculator.currentOperator) {

        const answer = **operate**(

**Number**(calculator.currentValue),

**Number**(calculator.input.value),

          calculator.currentOperator

        );

        calculator.currentValue = answer;

        calculator.currentOperator = btn.operator;

        calculator.input.value = "";

        console.**log**({ ...calculator });

      } else {

        calculator.currentValue = **Number**(calculator.input.value);

        calculator.currentOperator = btn.operator;

        calculator.input.value = "";

      }

    }

  });

});

*// when AC clicked, reset everything*

calculator.acButton.**addEventListener**("click", () => {

  calculator.input.value = "";

  calculator.input.**focus**();

  calculator.currentOperator = null;

  calculator.currentValue = null;

  calculator.currentValue2 = null;

});

*//get answer and display when = is clicked*

calculator.equalButton.**addEventListener**("click", () => {

  if (calculator.currentValue && calculator.currentOperator) {

    const answer = **operate**(

**Number**(calculator.currentValue),

**Number**(calculator.input.value),

      calculator.currentOperator

    );

    calculator.currentValue = answer;

    calculator.currentOperator = null;

    calculator.input.value = answer;

    console.**log**({ ...calculator });

  } else {

    calculator.currentValue = **Number**(calculator.input.value);

    calculator.currentOperator = null;

    calculator.input.value = "";

  }

});

*// manage calculations*

function **operate**(*val1*, *val2*, *op*) {

  switch (op) {

    case "add":

      return val1 + val2;

    case "sub":

      return val1 - val2;

    case "mul":

      return val1 \* val2;

    case "div":

      return val1 / val2;

  }

}