Institute of Computer Technology

B. Tech. Computer Science and Engineering

Semester: IV

Sub: Front End Technologies

Course Code: 2CSE410

Practical Definition: To learn about control structure like (if condition, if-else condition, nested if-else condition, else-if ladder condition, and switch case condition using JavaScript).

Q. 1. Make an appropriate program using JavaScript, where you have to find the addition, subtraction, multiplication, and division of any random two number.

Note:1: Perform this program by using direct and indirect value initialization process in variable

Code:-

```
// Direct Initialization

  var a=50;
  var b=2;
  console.log("Addition:",a+b);
  console.log("Subtraction:",a-b);
  console.log("Multiplication:",a*b);
  console.log("Division:",a/b);
  console.log("Modulo:",a%b);
```

Output:-

Output

```
Addition: 52
Subtraction: 48
Multiplication: 100
Division: 25
Modulo: 0
```

//Indirect Initialization

```
var num1,num2;
var sum=0,mul=0,sub=0,div=0;
num1=parseInt(prompt("Enter The Number 1:"));
num2=parseInt(prompt("Enter The Number 2:"));
sum=num1+num2;
console.log(sum);
sub=num1-num2;
console.log(sub);
mul=num1*num2;
console.log(mul);
div=num1/num2;
console.log(div);
```

Output:-

Output

```
Enter The Number 1:10
Enter The Number 2:13
23
-3
130
0.7692307692307693
```

Note:2: Perform this program by using switch case condition also.

Code:-

```
//Using Switch case
var num1, num2, operation;
num1 = parseInt(prompt("Enter The Number 1:"));
num2 = parseInt(prompt("Enter The Number 2:"));

operation = prompt("Enter operation: add, subtract, multiply,
divide:-");

switch (operation) {
   case "add":
      console.log("Sum: " + (num1 + num2));
```

```
      break;
    case "subtract":
      console.log("Subtraction: " + (num1 - num2));
      break;
    case "multiply":
      console.log("Multiplication: " + (num1 * num2));
      break;
    case "divide":
      if (num2 !== 0) {
        console.log("Division: " + (num1 / num2));
      } else {
        console.log("Error: Division by zero is not allowed");
      }
      break;
    default:
      console.log("Invalid operation");
}
```

Output:-

```
Output

Enter The Number 1:10
Enter The Number 2:5
Enter operation: add, subtract, multiply, divide:-divide
Division: 2
```

Q.2. Write an appropriate program in JavaScript, where you have to read any random three number from user. Find out highest one number among given three user inputted number.

Code:-

```
//Greater Than Three Number
var num1=0,num2=0,num3=0;
num1=parseInt(prompt("Enter the number 1:"));
num2=parseInt(prompt("Enter the number 2:"));
num3=parseInt(prompt("Enter the number 3:"));

if(num1>num2 && num1>num3){
   console.log("Number 1 is Greatest:"+num1);
}
else if(num2>num1 && num2>num3){
   console.log("Number 2 is Greatest:"+num2);
}
else{
   console.log("Number 3  is Greatest:"+num3);
}
```

Output:-

```
Enter the number 1:10
Enter the number 2:15
Enter the number 3:5
Number 2 is Greatest:15
```

Q.3. Write an appropriate program in JavaScript, where you have to read any random three number from user. Find out lowest one number among given three user inputted number by using ternary operator.

Code:-

```
var num1 = parseInt(prompt("Enter the number 1:"));
var num2 = parseInt(prompt("Enter the number 2:"));
var num3 = parseInt(prompt("Enter the number 3:"));

var smallest = (num1 < num2 && num1 < num3) ? num1 : (num2 < num1 && num2 < num3) ? num2 : num3;
console.log("The smallest number is: " + smallest);
```

Output:-

```
Output

Enter the number 1:10
Enter the number 2:12
Enter the number 3:3
The smallest number is: 3
```

Q.4. Demonstrate one program in JS, where you have to accept basic salary from user, and as per the
basic salary you have to find hra, da, gross salary, pf, and net salary as per the following percentage.

da= 10% of basic salary
hra=20% of basic salary
gross salary=basic salary+da+hra
pf=5 % of gross salary.
net salary= gross salary – pf

Code:-

```
var salary = 0.00;
```

```
var da = 0.00, hra = 0.00, gross = 0.00, pf = 0.00, net = 0.00;

salary = parseFloat(prompt("Enter The Salary:"));

da = salary * 0.10;
hra = salary * 0.20;
gross = salary + da + hra;
pf = gross * 0.05;
net = gross - pf;

console.log("DA:", da);
console.log("HRA:", hra);
console.log("Gross Salary:", gross);
console.log("PF:", pf);
console.log("Net Salary:", net);
```

Output:-

```
Output

Enter The Salary:50000
DA: 5000
HRA: 10000
Gross Salary: 65000
PF: 3250
Net Salary: 61750
```

Note: Perform this program by using form design also, where you have to read basic salary from user in form text box, and all other

calculation should be display on respective text field on button click
event.

Code(form.html):-

```
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Basic Salary Calculation</title>
  <link rel="stylesheet" href="style.css">
</head>
<body>
  <h1>Basic Salary Calculation</h1>
  <form>
    <label for="salary">Salary:</label>
    <input type="number" id="salary" name="Salary"><br><br>

    <label for="da">DA:</label>
    <input type="number" id="da" name="DA"><br><br>

    <label for="hra">HRA:</label>
    <input type="number" id="hra" name="HRA"><br><br>

    <button onclick="performOperation()">Submit</button><br><br>

    <input type="text" id="grossSalary" readonly placeholder="Gross Of Basic
Salary">
    <input type="text" id="PFsalary" readonly placeholder="PF Of Salary">
    <input type="text" id="NetSalary" readonly placeholder="Net Of Salary">

    <script src="app.js"></script>
  </form>
```

```
</body>
</html>
```

Style.css

```
/* Basic reset */
* {
  margin: 0;
  padding: 0;
  box-sizing: border-box;
}

body {
  font-family: Arial, sans-serif;
  background-color: #f4f4f9;
  color: #333;
  padding: 20px;
}

h1 {
  text-align: center;
  margin-bottom: 20px;
  font-size: 24px;
  color: #5a5a5a;
}

form {
  background-color: #fff;
  padding: 20px;
  border-radius: 8px;
  box-shadow: 0 4px 6px rgba(0, 0, 0, 0.1);
  max-width: 400px;
  margin: 0 auto;
}
```

```
label {
    font-size: 16px;
    margin-bottom: 5px;
    display: inline-block;
}

input[type="number"], input[type="text"] {
    width: 100%;
    padding: 8px;
    margin-bottom: 15px;
    border: 1px solid #ddd;
    border-radius: 4px;
    font-size: 16px;
}

button {
    background-color: #4CAF50;
    color: white;
    border: none;
    padding: 10px 15px;
    border-radius: 4px;
    font-size: 16px;
    cursor: pointer;
    width: 100%;
}

button:hover {
    background-color: #45a049;
}

input[readonly] {
    background-color: #f0f0f0;
    cursor: not-allowed;
}
```

```
input[type="text"] {
   font-weight: bold;
   color: #2d2d2d;
}
```

Script.js

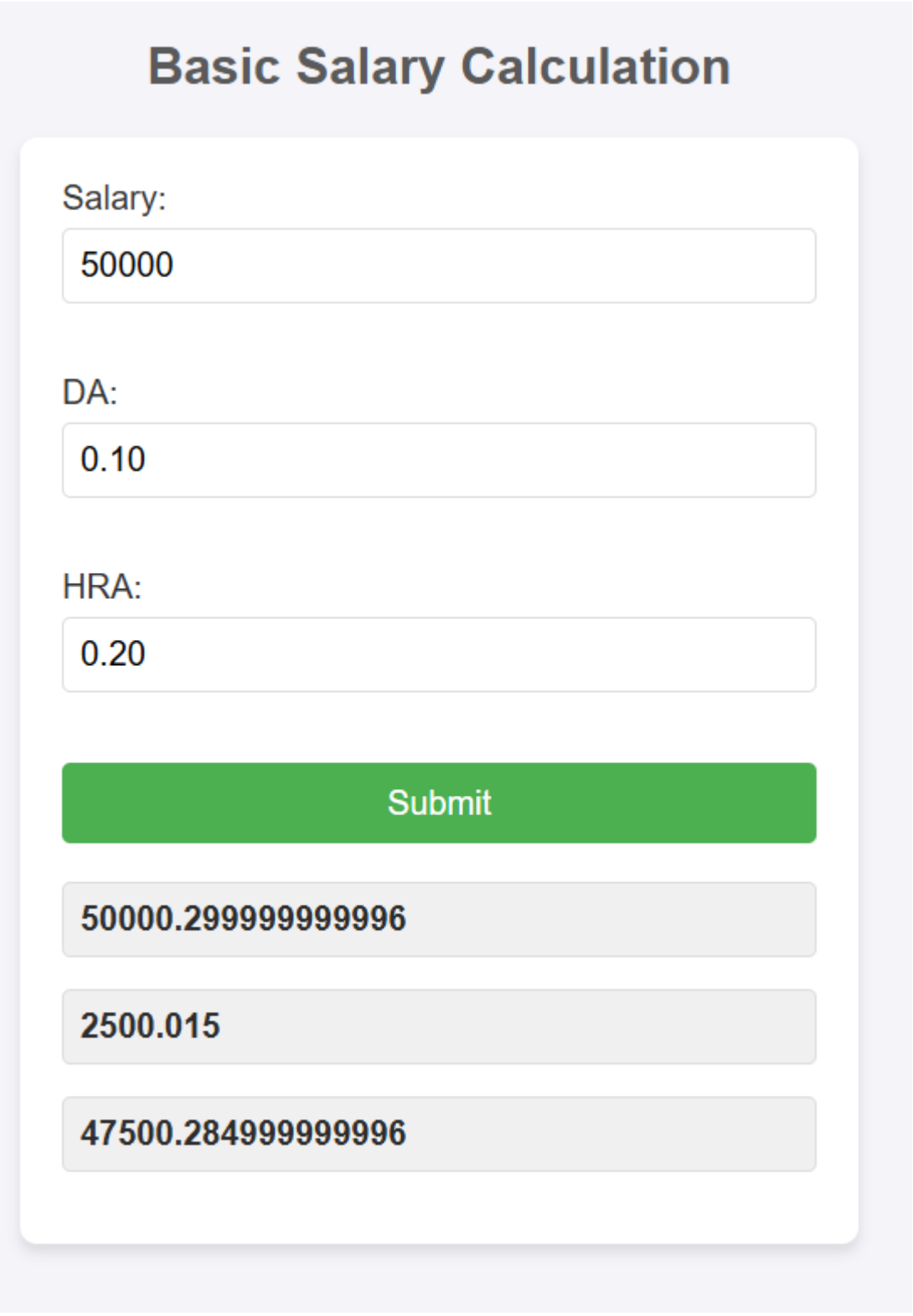
```
function performOperation(){
   let BS = document.getElementById('salary').value;
   let DAA = document.getElementById('da').value;
   let HRAA = document.getElementById('hra').value;

   let BasicSalary = parseFloat(BS);
   let DA = parseFloat(DAA);
   let HRA = parseFloat(HRAA);

   var pf=0.00,gross=0.00,net=0.00;
   gross = BasicSalary + DA + HRA;
   pf = gross * 0.05;
   net = gross - pf;

   document.getElementById('grossSalary').value = gross;
   document.getElementById('PFsalary').value = pf;
   document.getElementById('NetSalary').value = net;
}
```

Output:-



Q.5. Demonstrate an appropriate program in JS, where you have to accept basic salary from user, and find net salary as per the following given condition.

1. if basic salary is >0 and < =5000
da= 10% of basic salary
hra=15% of basic salary
gs=basic + da+ hra
pf=5% of gross salary
net salary=gs-pf;
2. if basic salary is >5000 and < =50000
da= 15% of basic salary
hra=20% of basic salary
gs=basic + da+ hra
pf=10% of gross salary
net salary=gs-pf;

3. if basic salary is >50000 and < =100000
da= 20% of basic salary
hra=25% of basic salary
gs=basic + da+ hra
pf=15% of gross salary
net salary=gs-pf;

else
message " Company not provide basic salary more than 100000.

Code:-

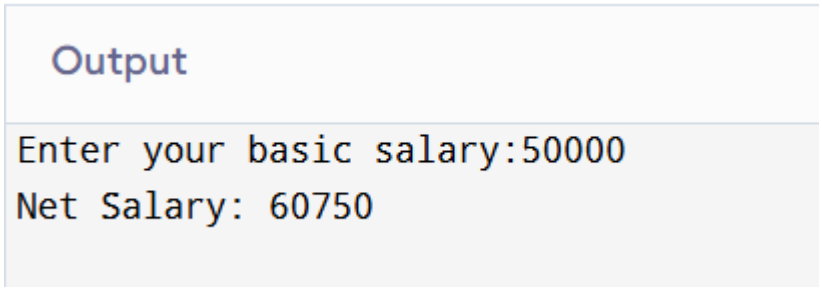
```
var basicSalary = parseFloat(prompt("Enter your basic salary:"));
var da, hra, gs, pf, netSalary;

if (basicSalary > 0 && basicSalary <= 5000) {
   da = 0.10 * basicSalary;
   hra = 0.15 * basicSalary;
   gs = basicSalary + da + hra;
   pf = 0.05 * gs;
   netSalary = gs - pf;
} else if (basicSalary > 5000 && basicSalary <= 50000) {
```

```
    da = 0.15 * basicSalary;
    hra = 0.20 * basicSalary;
    gs = basicSalary + da + hra;
    pf = 0.10 * gs;
    netSalary = gs - pf;
} else if (basicSalary > 50000 && basicSalary <= 100000) {
    da = 0.20 * basicSalary;
    hra = 0.25 * basicSalary;
    gs = basicSalary + da + hra;
    pf = 0.15 * gs;
    netSalary = gs - pf;
} else {
    console.log("Company does not provide basic salary more than 100000.");
}

if (basicSalary > 0 && basicSalary <= 100000) {
    console.log("Net Salary: " + netSalary);
}
```

Output:-



Q.6. Demonstrate one program in JavaScript, where you have to read principal amount, rate of interest and numbers of year from user in text box, and accordingly you have to calculate simple and compound interest and have to display calculated value in text box respectively on button click event.
[Note: Perform this program using Console + window and form control like level, textbox, button,
etc.]

Code:-

```
<!DOCTYPE html>
<html>
<head>
  <title>Interest Calculator</title>
  <script>
    function calculateInterest() {
      var principal = parseFloat(document.getElementById("principal").value);
      var rate = parseFloat(document.getElementById("rate").value);
      var years = parseInt(document.getElementById("years").value);

      if (isNaN(principal) || isNaN(rate) || isNaN(years) || principal <= 0 ||
rate <= 0 || years <= 0) {
        alert("Please enter valid inputs.");
        return;
      }

      var simpleInterest = (principal * rate * years) / 100;
      var compoundInterest = principal * Math.pow((1 + rate / 100), years) -
principal;

      console.log("Simple Interest: " + simpleInterest);
      console.log("Compound Interest: " + compoundInterest);
      alert("Simple Interest: " + simpleInterest + "\nCompound Interest: " +
compoundInterest);

      document.getElementById("si").value = simpleInterest.toFixed(2);
      document.getElementById("ci").value = compoundInterest.toFixed(2);
    }
  </script>
</head>
<body>
  <label>Principal Amount:</label> <input type="text" id="principal"><br>
  <label>Rate of Interest (%):</label> <input type="text" id="rate"><br>
```

```
    <label>Number of Years:</label> <input type="text" id="years"><br>
    <button onclick="calculateInterest()">Calculate</button><br>
    <label>Simple Interest:</label> <input type="text" id="si" readonly><br>
    <label>Compound Interest:</label> <input type="text" id="ci" readonly><br>
</body>
</html>
```

Output:-