Subject : 2304CS431 – Client Side Scripting using Javascript

Faculty: Prof. Chirag K. Sakhrani

Practical - 6: Working with number handling functions, operators and if condition.

1)

Program :- WAP to demonstrate number handling functions of java script. (A)

Output :-

```
//Number Handling Functions

let num = 1234.56789;

// 1. toString()

console.log("toString() examples:");
console.log("Example 1:", num.toString()); //output: '1234.56789'
console.log("Example 2:", (456).toString()); //output: '456'
console.log("Example 3:", (-123).toString()); //output: '-123'
console.log("Example 4:", (0).toString()); //output: '0'

// 2. toExponential()

console.log("toExponential() examples:");
console.log("Example 1:", num.toExponential(2)); //output: '1.23e+3'
console.log("Example 2:", (456).toExponential(1)); //output: '4.6e+2'
console.log("Example 3:", (0.00123).toExponential(3)); //output: '1.230e-3'
console.log("Example 4:", (10000).toExponential()); //output: '1e+4'

// 3. toFixed()

console.log("toFixed() examples:");
console.log("Example 1:", num.toFixed(2)); //output: '1234.57'
console.log("Example 2:", (123.456).toFixed(0)); //output: '123'
console.log("Example 3:", (0.123456).toFixed(4)); //output: '0.1235'
console.log("Example 4:", (100).toFixed(2)); //output: '100.00'

// 4. toPrecision()

console.log("toPrecision() examples:");
console.log("Example 1:", num.toPrecision(6)); //output: '1234.57'
console.log("Example 2:", (123.456).toPrecision(4)); //output: '123.5'
console.log("Example 3:", (0.00123).toPrecision(2)); //output: '0.0012'
console.log("Example 4:", (10000).toPrecision(5)); //output: '10000'

// 5. valueOf()

console.log("valueOf() examples:");
console.log("Example 1:", num.valueOf()); //output: 1234.56789
```

```
console.log("Example 2:", (456).valueOf()); //output: 456
console.log("Example 3:", (-123).valueOf()); //output: -123
console.log("Example 4:", (0).valueOf()); //output: 0

// 6. Number()

console.log("Number() examples:");
console.log("Example 1:", Number('123')); //output: 123
console.log("Example 2:", Number('123.45')); //output: 123.45
console.log("Example 3:", Number('   456   ')); //output: 456
console.log("Example 4:", Number('abc')); //output: NaN

// 7. parseFloat()

console.log("parseFloat() examples:");
console.log("Example 1:", parseFloat('123.45abc')); //output: 123.45
console.log("Example 2:", parseFloat('   456.78   ')); //output: 456.78
console.log("Example 3:", parseFloat('0.12345')); //output: 0.12345
console.log("Example 4:", parseFloat('abc123.45')); //output: NaN

// 8. parseInt()

console.log("parseInt() examples:");
console.log("Example 1:", parseInt('123.45abc')); //output: 123
console.log("Example 2:", parseInt('   456   ')); //output: 456
console.log("Example 3:", parseInt('0xF', 16)); //output: 15
console.log("Example 4:", parseInt('abc123')); //output: NaN

// 9. Number.isInteger()

console.log("Number.isInteger() examples:");
console.log("Example 1:", Number.isInteger(1234)); //output: true
console.log("Example 2:", Number.isInteger(1234.567)); //output: false
console.log("Example 3:", Number.isInteger(-100)); //output: true
console.log("Example 4:", Number.isInteger(0)); //output: true

// 10. Number.isSafeInteger()

console.log("Number.isSafeInteger() examples:");
console.log("Example 1:", Number.isSafeInteger(1234)); //output: true
console.log("Example 2:", Number.isSafeInteger(9007199254740991)); //output: true
console.log("Example 3:", Number.isSafeInteger(-9007199254740991)); //output: true
console.log("Example 4:", Number.isSafeInteger(Math.pow(2, 53))); //output: false
```

2)	
	Program :- WAP to demonstrate the use of arithmetic operators using if condition(A)

Output :-

```
const num1 = parseFloat(prompt("Enter the first number:"));
const num2 = parseFloat(prompt("Enter the second number:"));
const operator = prompt("Enter the operator (+, -, *, /):");

let result = 0;

if (operator === '+') {
  result = num1 + num2;
}
else if (operator === '-') {
  result = num1 - num2;
}
else if (operator === '*') {
  result = num1 * num2;
}
else if (operator === '/') {
  if (num2 !== 0) {
    result = num1 / num2;
  } else {
    result = 'Error: Division by zero';
  }
}
else {
  result = 'Invalid operator';
}

console.log(`The result of ${num1} ${operator} ${num2} is: ${result}.`);
```

3)

Program:- WAP to create calculator using switch case. (A)

Output :-

```
const num1 = parseFloat(prompt("Enter First Number:"));
const num2 = parseFloat(prompt("Enter Second Number:"));
const operator = prompt("Enter operation (+, -, *, /) =");

switch(operator){

   case '+':
      console.log("Ans:",num1+num2);
      break;

   case '-':
      console.loge("Ans:",num1-num2);
      break;
```

```
    case '*':
      console.log("Ans:",num1*num2);
      break;

    case '/':
      console.log("Ans:",num1/num2);
      break;

    default:
      console.log("Error!");

}
```

4)

Program:- WAP to display result of a student whether he/she pass or fail the exam. (Criteria is >39 marks is all 5 subjects.) Also display the grade of the student. (Criteria >90 then grade „A", >80 then „B", >70 then „C", >60 then „D", >40 then „E", <40 then „F").(B)

Output:-

Approach 1 :-

```
const sub1 = parseInt(prompt("Enter First Subject Marks:"));
const sub2 = parseInt(prompt("Enter Second Subject Marks:"));
const sub3 = parseInt(prompt("Enter Third Subject Marks:"));
const sub4 = parseInt(prompt("Enter Fourth Subject Marks:"));
const sub5 = parseInt(prompt("Enter Fifth Subject Marks:"));

// Check if the student has more than 39 marks in each subject to pass
if (sub1 > 39 && sub2 > 39 && sub3 > 39 && sub4 > 39 && sub5 > 39) {
  const result = ((sub1 + sub2 + sub3 + sub4 + sub5) / 500) * 100;

  if (result > 90) {
    console.log("Student Passed With A grade.");
  }
 else if (result > 80) {
    console.log("Student Passed With B grade.");
  }
 else if (result > 70) {
    console.log("Student Passed With C grade.");
  }
 else if (result > 60) {
    console.log("Student Passed With D grade.");
  }
else if (result > 40) {
    console.log("Student Passed With E grade."); }
```

```
else {
   console.log("Student Failed.");
  }
}
else {
  console.log("Student Failed.");
}
```

Approach 2 :-

```
const sub1 = parseInt(prompt("Enter First Subject Marks:"));
const sub2 = parseInt(prompt("Enter Second Subject Marks:"));
const sub3 = parseInt(prompt("Enter Third Subject Marks:"));
const sub4 = parseInt(prompt("Enter Fourth Subject Marks:"));
const sub5 = parseInt(prompt("Enter Fifth Subject Marks:"));

const result = ((sub1+sub2+sub3+sub4+sub5)/500)*100;

if(result>90){
   console.log("Student Passed With A grade.");
}

else if(result<=90 && result >80){
   console.log("Student Passed With B grade.");

}

else if(result<=80 && result >70){
   console.log("Student Passed With C grade.");

}

else if(result<=70 && result >60){
   console.log("Student Passed With D grade.");

}

else if(result<=60 && result >=40){
   console.log("Student Passed With E grade.");

}

else if(result<40){
   console.log("Student Failed.");
}
```

5)	
	Program:- WAP to swap values of 2 variables without using 3rd variable. (B)
	Output:- **let x = 5;** **let y = 10;** **console.log(`Before swap: x = ${x}, y = ${y}`);** **Approach 1:-** **//basic operation on x and y.** **x = x + y;** **y = x - y;** **x = x - y;** **console.log(`After swap: x = ${x}, y = ${y}`);** **Approach 2:-** **// using xor (bitwise operator)** **let a = 5;** **let b = 10;** **console.log(`Before swap: x = ${a}, y = ${b}`);** **a = a ^ b;** **b = a^ b;** **a = a ^ b;** **console.log(`After swap: x = ${a}, y = ${b}`);**