TP 2543 : Labsheet (Java script)

This topic will be covering the following topics.

- **Output text**
  - How to output data on browser using document.write()
  - How to change HTML content of an HTML element using innerHTML
  - How to output data in an alert box using window.alert()
  - How to uotput data in console using console.log
- **User input**
  - How to use prompt() popup
  - How to take input from user using propmt()
- **Use variables.**
  - How to use integers.
  - How to use strings.
  - How to concat string and integers.
- **Arithmetic Operators**
  - How to use numbers.
  - How to use airthmetic operators on different variables.

Ex. #1:

Write a javascript code to print Hello World !! on your browse on button click. Use document.write(), innerHTML, window.alert() and console.log.

Expected Outcome:

Hello World !!

Hello World !!

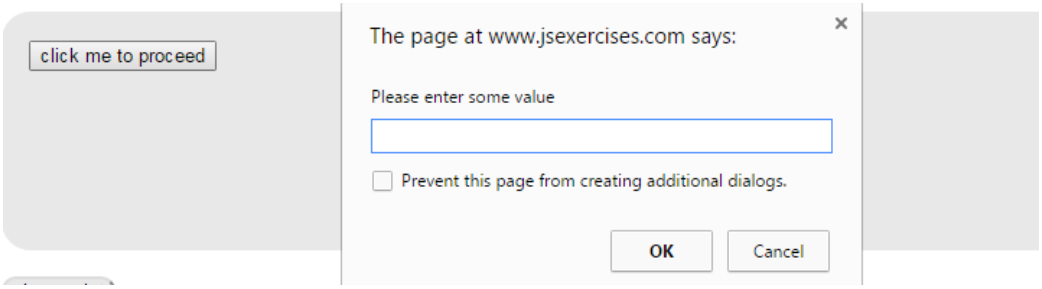
Script

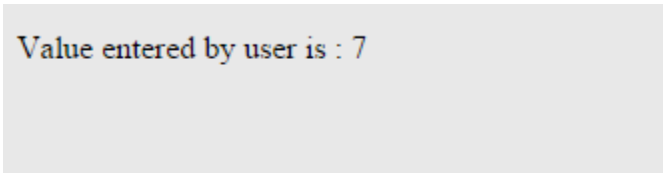
```
1
2     <!DOCTYPE html>
3     <html>
4     <body>
5     <p id='text'></p>
6     <script>
7     document.write('Hello World !!');
8     document.getElementById('text').innerHTML='Hello World !!';
9     console.log('Hello WOrld !!'); /*Activate the browser console with F12,
10    and select "Console" in the menu to see output string.  */
11    alert('Hello World !!');
12    </script>
13    </body>
14    </html>
15
```

Ex. #2:

Write a script that works on onclick() event to take input from user and display user input on browser using document.write(). Use prompt() to take user input.

Expected Outcome:





Script

```
1
2     <!DOCTYPE html>
3     <html>
4     <head>
5     <script>
6     function userInput(){
7     var input=prompt("Please enter some value");
8     document.write("Value entered by user is : "+input);
9     }
10    </script>
11    </head>
12    <body>
13    <input type="button" value="click me to proceed" onclick="return userInput();">
14    </body>
15    </html>
```

Ex. #3:

Take three variables firstName,lastName and age. Store a person's first name(say Michael) in firstName , his/her last name(say Clarke) in lastName and his/her age(say 35) in age. Then print a statement stating "This is Michael Clarke. He is 35 years old."

Expected Outcome:

This is Michael Clarke. He is 35Years old.

Script

```
1     <!DOCTYPE html>
2     <html>
3     <body>
4     <p id='text'></p>
5     <script>
6     var firstName="Michael";
7     var lastName="Clarke";
8     var age=35;
9     document.getElementById('text').innerHTML="This is "+firstName+" "+lastName+"\
      . He is "+age+"Years old.";
      </script>
```

```
10  </body>
11  </html>
12
13
14
```

Ex. #4:

Take two variables tempInCel and tempInFar. Say temperature of any place is given in degree celsius(say 30 degree), store this temperature in tempInCel.Now convert this temperature in fahrenheit and store the result in tempInFar.Temperature in Fahrenheit=(Temperature in celsius * 9\5)+32. Then print temperature in degree celsius and temperature in Fahrenheit both.

Expected Outcome:

Temp in celsius = 30. Temp in fahrenheit = 86

Script

```
1
2   <!DOCTYPE html>
3   <html>
4   <body>
5   <p id='text'></p>
6   <script>
7   var tempInCel = 30;
8   var tempInFar = (tempInCel * 9/5)+32;
9   document.getElementById("text").innerHTML="Temp in celsius = "+tempInCel+".\
     Temp in fahrenheit = "+tempInFar;
10  </script>
11  </body>
12  </html>
13
```

In any language control structures are very important.They are used for decision making.

Ex. #5: Simple If-Else

We will have two situations to choose from.Simple decision making will be done using simple if-else.

Ex.#6: Ladder If-Else

We will have more than two situations to choose from and we will use ladder if-else for decision making

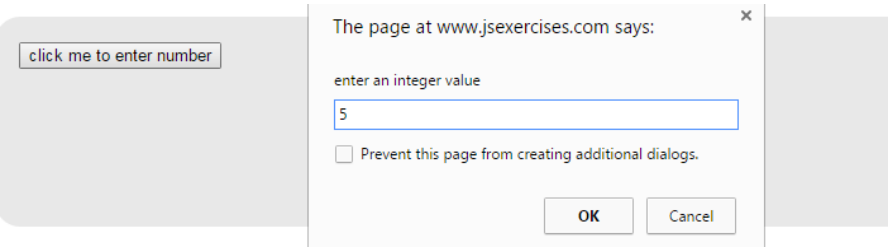
Ex. #7 & #8: Switch.

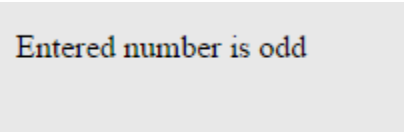
We will have two or more situations to choose from. But in this exercise we will use switch case in place of ladder if-else to make the decision.

Ex. #5:

For this jsexercise write a javascript function that takes integer input from user and in return displays whether the input is even number or odd.

Expected Outcome:





Script

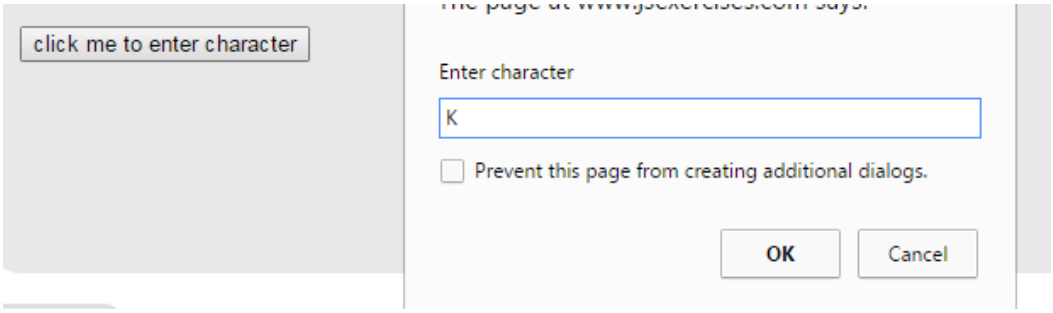
```
<!DOCTYPE html>
<html>
<head>
<script>
function evenOdd(){
var number= prompt("enter an integer value");
if(number % 2 ==0)
document.write("Entered number is even");
else{
document.write("Entered number is odd");
}
}
</script>
</head>
<body>
<input type="button" value="click me to enter number" onclick="return evenOdd();">
</body>
</html>
```

Ex. #6:

Any character is entered through the keyboard, write a program to determine whether the character entered is a capital letter, a small case letter, a digit or a special symbol. The following table shows the range of ASCII values for various characters.

Characters	ASCII value
A-Z	65-90
a-z	97-122
0-9	48-57
special characters	0-47,58-64,91-96,123-127

Expected Outcome:



Entered value is capital character

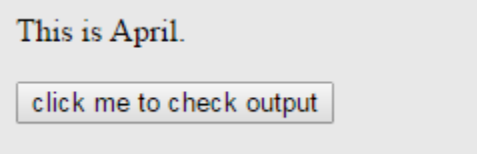
Script

```
<!DOCTYPE html>
<html>
<head>
<script>
function asciiValue(){
var character=prompt("Enter character");
if(character.charCodeAt(0) >=65 && character.charCodeAt(0) <=90)
{document.write("Entered value is capital character");}
else if(character.charCodeAt(0) >= 97 && character.charCodeAt(0) <=122)
{document.write("Entered value is small character");}
else if(character.charCodeAt(0) >=48 && character.charCodeAt(0) <=57)
{document.write("Entered value is a digit");}
else
{document.write("Entered value is a special character");}
}
</script>
</head>
<body>
<input type="button" value="click me to enter character" onclick="return asciiValue()
</body>
</html>
```

Ex. #7:

Say 1 denotes january, 2 denotes february 3 denotes march and so on.Based on this write a function which will take an integer from 1 to 12 as parameter value.Based on this integer tell which month does it denotes.

Expected Outcome:



Script

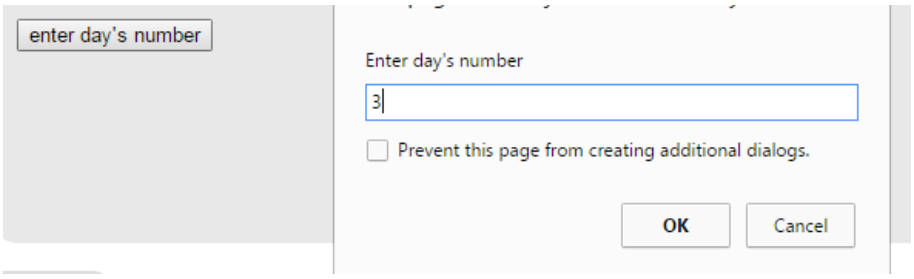
```
<!DOCTYPE html>
<html>
<head>
<script>
function checkMonth(month){
var ele=document.getElementById('text');
if(ele !== null){
switch(month){
case 1:
ele.innerHTML="This is January.";
break;
case 2:
ele.innerHTML="This is February.";
break;
case 3:
ele.innerHTML="This is March.";
break;
case 4:
ele.innerHTML="This is April.";
break;
case 5:
ele.innerHTML="This is May.";
break;
case 6:
ele.innerHTML="This is June.";
break;
case 7:
ele.innerHTML="This is July.";
break;
case 8:
ele.innerHTML="This is August.";
break;
```

```
case 9:
ele.innerHTML="This is September.";
break;
case 10:
ele.innerHTML="This is October.";
break;
case 11:
ele.innerHTML="This is November.";
break;
case 12:
ele.innerHTML="This is December.";
break;
}
}
}
</script>
</head>
<body>
<p id='text'></p>
<input type="button" onclick="return checkMonth(4)" value="click me to check output">
</body>
</html>
```

Ex. #8:

Say we denote weekdays by number and 1 denotes Monday, 2 denotes Tuesday and so on. Now write a script that will take day in number as user input and will show which day that number belongs to.

Expected Outcome:



Its Wednesday

Script

```
<!DOCTYPE html>
<html>
<head>
<script>
function fine(){
var days=prompt("Enter day's number");
days=parseInt(days);
switch(days){
case 1:
document.write("Its Monday");
break;
case 2:
document.write("Its Tuesday");
break;
case 3:
document.write("Its Wednesday");
break;
case 4:
document.write("Its Thursday");
break;
case 5:
document.write("Its Friday");
break;
case 6:
document.write("Its Saturday");
break;
case 7:
document.write("Its Sunday");
default:
document.write("Invalid Input");
}
}
</script>
</head>
<body>
<input type="button" value="enter day's number" onclick="return fine();">
</body>
</html>
```

When we need to use same portion of code repeatedly we use loops. In this section we will do jsexercises on while,do while and for loops.

Ex. #9: While loop

While loop checks a condition everytime, before executing the code inside the loop.The variable that is used for looping is initialized befor the loop.

Ex.#10: Do-While loop

The code inside the loop is executed once before the loop condition is checked.So whether the loop condition satisfies or not the code inside the do-while loop is executed atleast once.

Ex. #11: For loop.

In case of for loop the variable that is used for looping is initialized in the for loop itself.So loop-variable initialization,condition checking and variable increment or decrement are done altogether in case of for loop.

Ex. #12: Nested For loop.

Loop inside another loop is called nested loop.

Ex. #9:

Write a function that will take two parameters named minValue and maxValue(say minValue=20 & maxValue=30) and write integer values between minValue and maxValue on screen using while loop.

Expected Outcome:

```
20
21
22
23
24
25
26
27
```

number 20-30

Script

```
<!DOCTYPE html>
<html>
<head>
<script>
function count(minValue,maxValue){
while(minValue <= maxValue){
document.write(minValue);
document.write("<br>");
minValue++;
}
}
</script>
</head>
<body>
<input type="button" onclick="return count(20,30)" value="click me to check output">
</body>
</html>
```

Ex. #10:

Write a script that will display all odd numbers between 1 to 100 on a button click.

Expected Outcome:

```
1
3
5
7
9
11
13
15
```
All odd number between 1-100 will be display

Script

```
<!DOCTYPE html>
<html>
<head>
<script>
function oddNumbers(){
var i=1;
do{
if(i%2 != 0){
document.write(i+"<br>");
}
i++;
}while(i < 100);
}
</script>
</head>
<body>
<input type="button" value="click me to check answer" onclick="return oddNumbers();">
</body>
</html>
```

Ex. #11:

Write a function that will take an integer as parameter(say 5) and print the multiplication table of that number entered by the user. The table should get displayed in the following form.
5 * 1 = 5
5 * 2 = 10

Expected Outcome:

5 * 1 = 5
5 * 2 = 10
5 * 3 = 15
5 * 4 = 20
5 * 5 = 25
5 * 6 = 30
5 * 7 = 35
5 * 8 = 40

Script

```
<!DOCTYPE html>
<html>
<head>
<script>
function table(number){
var i;
for(i=1;i<=10;i++){
document.write(number+" * "+i+" = "+number*i);
document.write("<br>");
}
}
</script>
</head>
<body>
<input type="button" onclick="return table(5)" value="click me to check output">
</body>
</html>
```

Ex. #12:

Write a program to produce the following output:

```
    1
  2 3
 4 5 6
7 8 9 10
```

Expected Outcome:

```
    1
  2 3
 4 5 6
7 8 9 10
```

Script

```
1
2
3   <!DOCTYPE html>
4   <html>
5   <head>
6   <script>
7   function genPattern(){
8   var i,j,k;
9   k=1;
10  for(i=1;i<=4;i++){
11  for(j=i;j<4;j++){
12  document.write(" "+" ");
13  }
14  for(j=1;j<=i;j++){
15  document.write(k+" "+" ");
16  k++;
17  }
18  document.write("<br>");
19  }
20  }
21  </script>
22  </head>
23  <body>
24  <input type="button" onclick="return genPattern()" value="click me to check output">
25  </body>
    </html>
```