Experiment No._____ *Date___/___/2020*

TITLE OF EXPERIMENT: - A Program to compare two strings using various methods.

DIVISION:_____ **BRANCH:** _____

BATCH:_____ **ROLL NO.:** _____

PERFORMED ON DATE: _____

SIGNATURE OF TEACHING STAFF:

EXPERIMENT NO. 4

Aim: Write a JavaScript program to compare two strings using various methods.

Prerequisites:

- For this **Javascript Lab**, it is assumed that you have a prior knowledge of HTML coding. It would help if you had some prior exposure to object-oriented programming concepts and a general idea on creating online applications.
- To understand this experiment, you should have the knowledge of the basic JavaScript, **JavaScript String, Javascript String toUpperCase(), JavaScript Regex, Javascript String localeCompare()**

Editor:

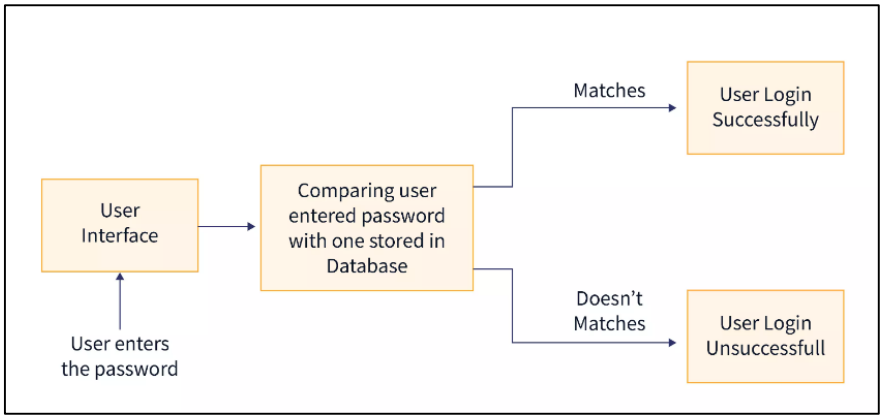
1.	NotePad
2.	Visual studio code

Theory:

Introduction:

Two strings in Javascript can be compared to check whether they are the same or not using different methods like toUpperCase(), localeCompare(), etc. We can also compare two strings in javascript using RegEx. Operators like greater than, or less than or equality operators to compare two strings.

Eg.: Imagine we are implementing login authentication for a website. In this case, we are supposed to take the username input from the user to check if the username entered is the same as the original username of the user that is stored in our database. Now the simplest way to do it is to compare the entered username with the one stored in our database; if they match, then let the user login otherwise, do not let the user login.



Now, as we know that the inputs are usually strings. Thus, we need to compare two strings in order to perform tasks like the above. Now the question is 'How do we compare two strings in Javascript?'

The following methods are used to compare two strings in javascript:

1. Using equality operators
2. Using toUpperCase()
3. Using RegEx
4. Using localeCompare()

1. Using equality operators (Case-insensitive String Comparison)

Imagine we are taking name inputs from the users and checking if that name is present in our database. In such cases, the two strings need not be strictly equal, i.e. the strings can have a different case. Such situations are known as **case-insensitive** string comparison situations. The **Equality operator** (==) is used to check if both the strings are the same. When comparing strings, case insensitivity refers to not taking into account uppercase and lowercase letters. The method **toLowerCase()** and **toUpperCase()** in javascript is used to determine case insensitive comparison of two strings in javascript.

Definition:- The javascript equality operator, which is used to compare two values on both sides and it will return the result as true or false.

Syntax

```
string1 == string2
```

Here, string1 and string2 are two strings that are being compared.

Return value

- **boolean**

The expression returns true if *string1* and *string2* are equal otherwise it returns false.

Example:

```
var stringFirst = "javascript world";
var stringSecond = "javascript world";
var res = '';

if(stringFirst == stringSecond)
{
  res = 'strings are equal';
}else
{
  res = 'strings are not equal';
}

document.write( "Output :- " + res );
```

```
Output:- strings are equal
```

Remember some points of JavaScript Equality Operator:

- If this method returns true, strings are equal.
- If this method returns false, strings are not equal

2. Using toUpperCase()

As discussed earlier, The toUpperCase() method is used to return the calling string value converted into the uppercase.

Example: Using toUpperCase()

```
// js program to perform string comparison

const string1 = 'JavaScript Program';
const string2 = 'javascript program';

// compare both strings
const result = string1.toUpperCase() === string2.toUpperCase();

if(result) {
   console.log('The strings are similar.');
} else {
   console.log('The strings are not similar.');
}
```

Output

```
The strings are similar.
```

In the above program, two strings are compared. Here,

- The toUpperCase() method converts all the string characters to uppercase.
- === is used to check if both the strings are the same.
- The if...else statement is used to display the result as per the condition.

Note: You can also use the toLowerCase() method to convert all the strings to lowercase and perform the comparison.

3. JS String Comparison Using RegEx

Example: JS String Comparison Using RegEx

```
// program to perform string comparison

const string1 = 'JavaScript Program';
const string2 = 'javascript program';

// create regex
const pattern = new RegExp(string1, "gi");

// compare the stings
const result = pattern.test(string2)

if(result) {
   console.log('The strings are similar.');
} else {
   console.log('The strings are not similar.');
}
```

Output

```
The strings are similar.
```

In the above program, the RegEx is used with the test() method to perform case insensitive string comparison. In the RegEx pattern, "g" syntax denotes **global** and "gi" syntax denotes **case insensitive** comparisons.

4. localeCompare() Method

You can use the localeCompare() Method of javascript to compare two strings in javascript.

Definition:-The javascript localeCompare() method is used to on a string object for comparing two strings. This method returns a number that tells whether the string comes before, after, or is equal to the compareString in sort order.

Syntax:-

string.localeCompare(compareString);

Note:- this method will return 0, -1 or 1. This method does case-sensitive comparing.

Remember some points of localeCompare() method

- -1 if the string is sorted before the *compareString*
- 0 if the two strings are equal
- 1 if the string is sorted after the *compareString*, two strings are not equal

```
var stringFirst = "javascript world";
var stringSecond = "javascript world";

var res = stringFirst.localeCompare(stringSecond);
document.write( "Output :- " + res + "<br>");

var stringThird = "javascript world";
var stringFourth = "javascript";

var res1 = stringThird.localeCompare(stringFourth);
document.write( "Output :- " + res1 );
```

Result of the above code is:

```
Output :- 0
Output :- 1
```

Example: Using localeCompare()

```
// program to perform case insensitive string comparison
```

```
const string1 = 'JavaScript Program';
const string2 = 'javascript program';

const result = string1.localeCompare(string2, undefined, { sensitivity: 'base' });

if(result == 0) {
   console.log('The strings are similar.');
} else {
   console.log('The strings are not similar.');
}
```

Output

```
The strings are similar.
```

In the above program, the localeCompare() method is used to perform case insensitive string comparison. The localeCompare() method returns a number that indicates whether a reference string comes before, or after, or is the same as the given string. Here, { sensitivity: 'base' } treats **A** and **a** as the same.

Program:

a. Using equality operators

```
<html>
<head>
<title> program to perform string comparison </title>
</head>
<body>
<script type="text/javascript">
var stringFirst = "javascript world";
var stringSecond = "javascript world";
var res = '';


if(stringFirst == stringSecond)
{
```

```
  res = 'strings are equal';
}else
{
  res = 'strings are not equal';
}
 document.write( "Output :- " + res );
</script>
</body>
</html>
```

Output

```
Output:-  strings are equal
```

b. Using toUpperCase()

```
<html>
<head>
<title> program to perform string comparison </title>
</head>
<body>
<script type="text/javascript">
const string1 = 'Are you like JavaScript Program';
const string2 = 'javascript program';

// compare both strings
const result = string1.toUpperCase() === string2.toUpperCase();

if(result) {
    console.log('The strings are similar.');
} else {
    console.log('The strings are not similar.');
}
</script>
```

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

Output

```
The strings are not similar.
```

c. JS String Comparison Using RegEx

```
<html>
<head>
<title> program to perform string comparison </title>
</head>
<body>
<script type="text/javascript">
const string1 = 'JavaScript Program';
const string2 = 'javascript program';

// create regex
const pattern = new RegExp(string1, "gi");

// compare the stings
const result = pattern.test(string2)



if(result) {
    console.log('The strings are similar.');
} else {
    console.log('The strings are not similar.');
}
</script>
</body>
</html>
```

Output

```
The strings are similar.
```

d. localeCompare() Method

```
<html>
<head>
<title> program to perform case insensitive string comparison </title>
</head>
<body>
<script type="text/javascript">
const string1 = 'This is the JavaScript Program';
const string2 = 'this is the javascript program';

const result = string1.localeCompare(string2, undefined, { sensitivity: 'base' });

if(result == 0) {
   console.log('The strings are similar.');
} else {
   console.log('The strings are not similar.');
}

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

Output

```
The strings are similar.
```

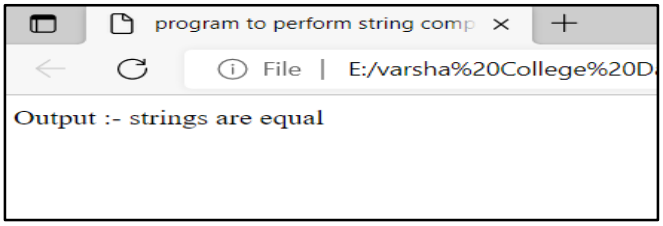
Screenshot's of Output:

a. Using equality operators

expt4a - Notepad

File Edit Format View Help

```
<html>
<head>
<title> program to perform string comparison </title>
</head>
<body>
<script type="text/javascript">

var stringFirst = "javascript world";
var stringSecond = "javascript world";
var res = '';

if(stringFirst == stringSecond)
{
  res = 'strings are equal';
}else
{
  res = 'strings are not equal';
}

document.write( "Output :- " + res );



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



b. Using toUpperCase()

expt4b - Notepad

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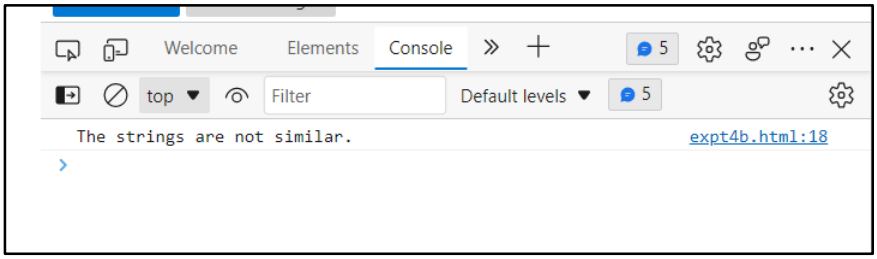
```
<html>
<head>
<title> program to perform string comparison </title>
</head>
<body>
<script type="text/javascript">


const string1 = 'Are you like JavaScript Program';
const string2 = 'javascript program';

// compare both strings
const result = string1.toUpperCase() === string2.toUpperCase();

if(result) {
    console.log('The strings are similar.');
} else {
    console.log('The strings are not similar.');
}



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



c. JS String Comparison Using RegEx

expt4c - Notepad

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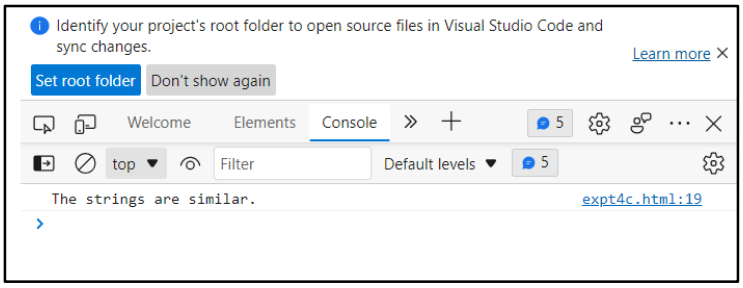
```
<html>
<head>
<title> program to perform string comparison </title>
</head>
<body>
<script type="text/javascript">


const string1 = 'JavaScript Program';
const string2 = 'javascript program';

// create regex
const pattern = new RegExp(string1, "gi");

// compare the stings
const result = pattern.test(string2)

if(result) {
    console.log('The strings are similar.');
} else {
    console.log('The strings are not similar.');
}



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



d. localeCompare() Method

expt4d - Notepad

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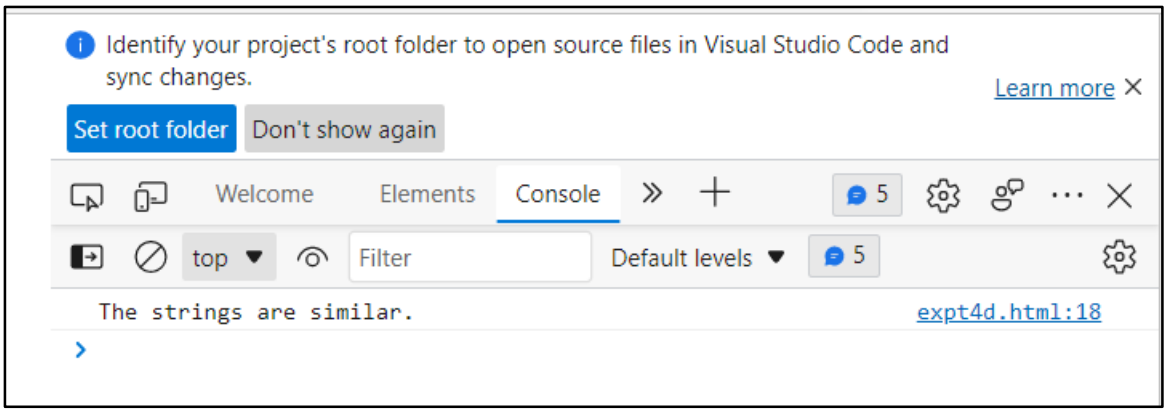
```
<html>
<head>
<title> program to perform case insensitive string comparison </title>
</head>

<body>

<script type="text/javascript">



const string1 = 'This is the JavaScript Program';
const string2 = 'this is the javascript program';

const result = string1.localeCompare(string2, undefined, { sensitivity:
'base' });

if(result == 0) {
    console.log('The strings are similar.');
} else {
    console.log('The strings are not similar.');
}



</script>

</body>
</html>
```


Identify your project's root folder to open source files in Visual Studio Code and sync changes.
Learn more
Set root folder
Don't show again
Welcome
Elements
Console
5
top
Filter
Default levels
5
The strings are similar.
expt4d.html:18

Conclusion: