

CSCI 165 (FLEX) Lab#9

Usually, a lab is made available on Wednesday, and due by Friday midnight of the same week.

JavaScript enhances user experience by adding interactivity to the web pages. The objective of this lab is to learn how to use “loop” to execute the same block of code a specified number of times when a specified condition is true. The 3 common types of loop are covered; they are “**for**” loop, “**while**” loop, and “**do..while**” loop. In this lab, you will create a JavaScript function that calculates the sum of some consecutive integers using the 3 types of loop.

Requirements:

Step 1: Download the work file

Download the **index.html** from the course website. In this lab, you only need to modify index.html. **Note: Since there is only one file, you don’t have to zip it when submitting your work. Don’t change the file name of “index.html”.**

Step 2: Learn the program

Look at the following scenario to have some ideas of the programming logic of the JavaScript function.

Design a JavaScript function that calculates the sum of all consecutive integers for a given range

Loop Demo by [Student Name] [Student ID]

Calculate the SUM of all integers between 1 and inclusively

User enters 5 and then clicks the “Click Me!” button

Loop Demo by [Student Name] [Student ID]

Calculate the SUM of all integers between 1 and inclusively

For Loop demo: 1 + 2 + 3 + 4 + 5= 15

while Loop demo: 1 + 2 + 3 + 4 + 5= 15

do..while Loop demo: 1 + 2 + 3 + 4 + 5= 15

Design the JavaScript program logic

The program takes an integer (e.g. 5 in the above example) as an input, and outputs the sum of all integers between 1 and the 5 (i.e., the input).

```
1 <!DOCTYPE html>
2 <html>
3 <head>
4 <!-- JavaScript Lab (Loops) -->
5 <!-- written by [Student Name] [Student ID] -->
6 <title>JavaScript Loops</title>
7 <script>
8 function demoLoop () {
9     var num = parseInt (document.getElementById("number").value);
10    var sum=0;
11    var count=0;
12    var message= "1";
13    for (count=2; count<=num; count++)
14        message = message + " " + count;
15
16    for (count=1; count<=num; count++)
17        sum = sum + count;
18    document.getElementById("displayAnswer_1").innerHTML =
19        "For Loop demo: " + message + "= " + sum;
20
21    count=1;
22    sum=0;
23    while (count<=num) {
24        sum = sum + count;
25        count++;
26    }
27    document.getElementById("displayAnswer_2").innerHTML =
28        "while Loop demo: " + message + "= " + sum;
29
30    count=1;
31    sum=0;
32    do {
33        sum = sum + count;
34        count++;
35    } while (count<=num)
36
37    document.getElementById("displayAnswer_3").innerHTML =
38        "do..while Loop demo: " + message + "= " + sum;
39 }
40 </script>
41 </head>
42
43 <body>
44 <h2>Loop Demo by [Student Name] [Student ID]</h2>
```

Line#5. Replace these with your student information.

Learn the program logic using a "for" loop

Learn the program logic using a "while" loop

Learn the program logic using a "do..while" loop

The code for the body part of the page is provided in the given index.html template file.

Line#5. Replace these with your student information.

Step 4: Save the index.html

Step 5: Launch (i.e., Run) the Web page using a browser

- Test the page to make sure its programming logic is written correctly. Fix any error.

Step 6: Submit the index.html (DON'T change the file name)

Since you have only one file (index.html), upload this html file (without zipping it) to the submission link "Lab#9_Desc_Submission" on the Moodle course website.

Assessment

The following penalties will be applied when assessing your work. Penalty will also be applied to overall quality of work. *(Note: assessment on quality is subject to the decision of the instructor)*

Web page/site do not display anything on the browser (i.e., there are error in your code, fix them before submitting you work)	-100% The most common mistake is "spelling error". Since the source code of the program is given, a request of sending your work to instructor before deadline and checking your code will not be accepted. Please use the features provided by the IDE, go through the program line by line, word by word and you can fix the error.
Requirements not fulfilled	Up to -100%; it depends on the % of requirements completed
Incorrect file name(s)	-5% per incorrect name (e.g., index.html.html, index(1).html, etc. are incorrect)
Unorganized code, improper code formatting,	Up to -30% (use Tab key instead of "a number of spaces" to make indentation, i.e., when you need to move a code statement to the right with indentation)

More scenarios (for references):

Loop Demo by [Student Name] [Student ID]

Calculate the SUM of all integers between 1 and inclusively

For Loop demo: $1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9 + 10 = 55$

while Loop demo: $1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9 + 10 = 55$

do..while Loop demo: $1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9 + 10 = 55$

Loop Demo by [Student Name] [Student ID]

Calculate the SUM of all integers between 1 and inclusively

For Loop demo: $1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9 + 10 + 11 + 12 + 13 + 14 + 15 + 16 + 17 + 18 + 19 + 20 = 210$

while Loop demo: $1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9 + 10 + 11 + 12 + 13 + 14 + 15 + 16 + 17 + 18 + 19 + 20 = 210$

do..while Loop demo: $1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9 + 10 + 11 + 12 + 13 + 14 + 15 + 16 + 17 + 18 + 19 + 20 = 210$