

LAB-4

Objective:

To make you familiar with *if-else* statements and *do-while* loop.

Assignment:

Write a program to print the sum of even numbers, sum of numbers ending with 3, and sum of numbers ending with 5, in the range x and y (inclusive), using *do-while* loop and *if-else* statements. Here, x and y are user inputs where $-1 < x < y < 1000$.

Sample output:

```
enter the upper bound, should be less than 1000 and greater than 0: 1
enter the lower bound, should be less than the upper bound and greater than 0: 100
Input Invalid
Please enter the values again.
enter the upper bound, should be less than 1000 and greater than 0: -1
enter the lower bound, should be less than the upper bound and greater than 0: -1
Input Invalid
Please enter the values again.
enter the upper bound, should be less than 1000 and greater than 0: 1001
enter the lower bound, should be less than the upper bound and greater than 0: 1
Input Invalid
Please enter the values again.
enter the upper bound, should be less than 1000 and greater than 0: 100
enter the lower bound, should be less than the upper bound and greater than 0: 1
The sum of numbers ending with a 3 in the range 1 to 100 is 480
The sum of numbers ending with a 5 in the range 1 to 100 is 500
The sum of even numbers in the range 1 to 100 is 2550
```

Logical outline of the program:

```
#include<iostream>

using namespace std;

int main()
{
    //Declaration of constants if any
    //Declaration of variables
    do{
        //take user inputs
    }while(condition)
    do{
        if(<condition>)
            statement1
        else if(<condition>)
            statement 2
        else if(<condition>)
            statement3
    }while(<condition>);
    //print the output to the console
    return 0;
}
```

Syntax for do-while loop:

<http://classes.mst.edu/compsci1570/sentinelloops.htm>

Grading Rubric:

- Properly formatted code header with Name, User name, Section, Instructor, Date, Assignment number and purpose (15 points)
- Proper declaration variables and constants with descriptive names (20 points)
- Proper use of do-while loops and if-else statements (20 points)
- Proper logic while calculating the sums (15 points)
- Comments, indentation and spaces between each line of code (10 points)
- Take the same inputs as in the sample output (20 point)

Hints to calculate the sums:

- First, initialize `sum_end3`, `sum_end5` and `even_sum` to 0.
- declare loop control variable and initialize it to x.
- Using the do-while loop run the lcv from x to y.
- In every iteration, you will check whether the lcv variable is even, ending with 3 or ending with 5
 - If `even(x%2==0)`, add to `even_sum`
 - If it is ending with 3(`x%10==3`), add to `sum_end3`
 - If it is ending with 5, add to `sum_end5`

Note:

If (your cpp file is not found in my drop box by the end of class)

```
grade_For_That_Assignment=0;
```