CSC107 2.0 Computer Programming - Laboratory I
Lab sheet 11

Practice the use of a **while** loop.

1. Complete the below code to print the sum of 10 numbers. Hint : use variables *i* and *sum*

```
int ……;
while (.....) {
        ……;
        ……;
}
printf("sum is %d " ,.....);
```

2. What is the output of the following code? Explain the reason.

```
int x = 80000000;
  while (x > 0)
    x++;
 printf("x is %d", x);
```

3. Write a simple C program to print the odd numbers from 1 to 50. Then modify the program to ensure that only the even numbers from 1 to 50 are printed.

4. Find the greatest common divisor of two integers n1 and n2 is as follows: First find d to be the minimum of n1 and n2, then check whether d, d-1, d-2, ..., 2, or 1 is a divisor for both n1 and n2 in this order. The first such common divisor is the greatest common divisor for n1 and n2. Write a program that prompts the user to enter two positive integers and displays the gcd.

5. Write a program that reads an unspecified number of integers, determines how many positive and negative values have been read, and computes the total and average of the input values (not counting zeros). Your program ends with the input 0. Display the average as a floating-point number.

6. Use a while loop to find the largest integer n such that n^3 is less than 12,000.

Practice the use of do -while loop.

7. What will be the output of the C program?

```
#include<stdio.h>
int main()
{
```

```
    int i = 4, j = 7;
    do
        printf("Loop\n");
    while(++i < --j);
    return 0;
}
```

8. Identify and state the nature of this loop; then correct it.

```
#include <stdio.h>
int main ()
{
 char ch = 'A';
 do
        {
         printf ("%c", ch);
         ch++;
        }
 while (ch > 0);
 return 0;
}
```

9. Create a program that asks the user to enter a positive integer and then uses a do-while loop to print the multiplication table of that number up to 10.

10. Generates five random subtraction questions. Display the correct count as shown below.

```
What is 14 + 2? 16
Correct!
What is 13 + 11? 12
Incorrect. The correct answer is 24
What is 9 + 11? 20
Correct!
What is 2 + 13? 15
Correct!
What is 10 + 2? 12
Correct!
You answered 4 questions correctly.
```

11. You have just started a sales job in a department store. Your pay consists of a base salary and a commission. The base salary is Rs 50,000. The scheme shown below is used to determine the commission rate.

Sales Amount	Commission Rate
Rs 0.01–Rs 50,000	8 percent
Rs50,000.01–Rs 100,000	10 percent
Rs100,000.01 and above	12 percent

Note that this is a graduation rate. The rate for the first Rs 50,000 is at 8%, the next Rs 50,000 is at 10%, and the rest is at 12%. If the sales amount is 250,000, the commission is 50,000 * 8% + 50,000 * 10% + 150,000 * 12% = Rs 27 000.

Your goal is to earn Rs 300,000 a year. Write a program that finds the minimum sales you have to generate in order to make Rs 300,000.

End