NATIONAL TEXTILE UNIVERSITY
Department of Computer Science
<u>Lab # 5:</u> Programming Fundamentals (COC-1071)

Basic Information			
Registration#		Name	
Total Marks		Marks Obtained	
Tools:	Dev-C++ 5.4.1		
Objectives	1. **do-while** Loops 2. Nested Loops	3. Functions 4.	
Note	Solve the following problems using the concepts we have covered so far		

Sentinel Controlled Loops and Do-While Loops

1. Input the marks of ten students and display their average. Use **do-while**
2. Input the gender of 10 students in the form of 'm, M' or 'f, F'. Force user to enter on m,M, f, F. Display how many students are male and female. Use **do-while** and **for** loop
3. **Modify the two number calculator problem of previous lab using while loop in a way that user press e for exit: Solve the two integer calculator problem for operators (*,-, +, /,%) using both switch**
4. Ask user to enter an integer number of any size and display its reverse
5. Display largest integer and smallest among the several integers entered by the user. Uses Y OR y as sentinel value
6. In Fibonacci series next number is calculated by adding previous two numbers. **0, 1, 1, 2, 3, 5, 8, 13…** Ask the user to enter the bound and show Fibonacci numbers up to that bound. For example if user enters 60 then your program will show. **0, 1, 1, 2, 3, 5, 8, 13, 21, 35, 56**

Nested Loops

7. Try following shapes in separate programs and then try them in one program:

```
*          *****      *****          *
**         ****       ****          **
***        ***        ***          ***
****       **         **          ****
*****      *          *          *****
```

```
####
#
##
```

8. Take five integers (between 1-20) from user and print "# "according to the input as:
    Please enter five integers between 1 to 20: 3 4 1 2 0
    ###

9. Display the following pattern using the nested loops:

```
1
2   4
3   6   9
4   8   12  16
5   10  15  20  25
```

Function without arguments:

10. Implement three function which displays 20 *, $, and @. Call these functions inside your program
11. Write a function which input 5 numbers and display minimum and maximum
12. Write a function which calculate average of five integer after input from user
13. Write a function which uses a nested loop and display triangle of # of size 10 but only display odd rows
14. Write a function which input a number and finds whether it is even OR odd
15. Implement a function named TenSpace which on call displays ten spaces on console
16. Write a function, which prints a triangle of 10 asterisks. Use this function in main five times
17. A company wants to send a four digit number in encrypted form on a network. Write functions with name **encrypt** and **decrypt**. The function encrypts input a four digit number and then swaps the first and third; second and fourth digits. The function decrypted input a four digit number and decrypt number in its original form. Force the user to only enter a four digit number.