



FAST

الذى علم بالقلم. علم الانسان ما لم يعلم.

National University of Computer and Emerging Sciences

DEPARTMENT OF COMPUTER SCIENCE

Object Oriented Programming

Lab-03



OOP LAB-03

Instructor: Engr. Khuram Shahzad

Lab 03 Content

☐ **Loops**

- **Do while loop**
- **While loop**
- **For loop**

☐ **Functions**

☐ **Arrays**

Student Alerts

- ❑ **No late submissions will be entertained.**
- ❑ **All submissions should be made on Google Class Room.**
- ❑ **Emailed assignment will be marked as 0.**
- ❑ **An individual/group may be assigned a **straight-forward 0** if the submitted assessed Home work is copied/cheated from another individual/group.**
- ❑ **Please Upload PDF File including all tasks code and output respectively.**

Lab 03 Home Work (Loops)

1. Write a program in C ++ to display the pattern like right angle triangle using an asterisk.

The pattern like :

a. b.

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

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

2. Write a program in C ++ to display the pattern like right angle triangle with a number

```
1
12
123
1234
```

3. Write a program in C ++ to display the cube of the number up to given an integer.

- Example:

Input number of terms : 3

Expected Output :

Number is : 1 and cube of the 1 is :1

Number is : 2 and cube of the 2 is :8

Number is : 3 and cube of the 3 is :27

Lab 03 Home Work (Loops)

4. Write a program in C++ to make such a pattern like right angle triangle with number increased by 1

The pattern like :

```
1
2 3
4 5 6
7 8 9 10
```

5. Write a program in C ++ to make such a pattern like a pyramid with numbers increased by 1.

```
1
2 3
4 5 6
7 8 9 10
```

6. Write a C ++ program to calculate the factorial of a given number?
7. Write a program in C++ to display the pattern like a diamond.?

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

Lab 03 Home Work (Loops)

8. Write a program in C ++ to display the number in reverse order
9. Write a program in C ++ to check whether a number is a palindrome or not?
10. Write a program in C ++ to make such a pattern like a pyramid with numbers increased by 1.
11. Write a C ++ program to calculate the factorial of a given number?
12. Write a program in C++ to display the pattern like a diamond.?
13. Write a program in C ++ to convert a binary number into a decimal number using math function.
14. Write a program in C ++ to display the first n terms of Fibonacci series

- Example

Input number of terms to display : 10

Expected Output :

Here is the Fibonacci series upto to 10 terms :

0 1 1 2 3 5 8 13 21 34

Lab 03 Home Work (Functions)

1. Write a program in C++ to find the square of any number using the function?
2. Write a program in C++ to find the sum of the series $1!/1 + 2!/2 + 3!/3 + 4!/4 + 5!/5$ using the function?
3. Write a program in C++ to convert decimal number to binary number using the function?
4. Write a program in C ++ to check whether a number is a prime number or not using the function?
5. Write a program in C ++ to check armstrong and perfect numbers using the function?
6. Write a program in C ++ to print all perfect numbers in given range using the function?
 - Example
 - Input lowest search limit of perfect numbers : 1
 - Input lowest search limit of perfect numbers : 100
 - Answer: ?

THANKS

