

Government College University, Lahore

Department of Computer Science

Programming Fundamentals (Spring 2019)

Lab – 05

Week (01-04-2019 – 05-04-2019)

Submission Deadline 10-04-2019 (Wednesday) 11:59 PM

Startup (01) (Understand nested loop with value of x & y)

Type the following program in your editor and observe the results

```
#include <iostream>

using namespace std;

main() {

    int x,y;

    for(x=0;x<5;x++){
        for(y=1;y<=5;y++){
            cout<<x<<y;
        }
        Cout<<endl;
    }
}
```

Task-01

Write a program to print following pattern.

*

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Task-02

Write a program to print following pattern.

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Task-03

Write a program to print following pattern.

**

*

Task-04

Write a program to print following pattern.

*

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Task-05

Write a program to print following pattern.

1

222

33333

4444444

555555555

Task-06

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

Task-08

Write a program to compute $\sin x$ for given x . The user should supply x and a positive integer n . We compute the sine of x using the series and the computation should use all terms in the series up through the term involving x^n

$$\sin x = x - x^3/3! + x^5/5! - x^7/7! + x^9/9! + \dots$$

Task-09

Write a program to compute the cosine of x . The user should supply x and a positive integer n . We compute the cosine of x using the series and the computation should use all terms in the series up through the term involving x^n

$$\cos x = 1 - x^2/2! + x^4/4! - x^6/6! + \dots$$

Submission Instructions

- Store File as Lab-05-Task-01.cpp (Task Number will change with each task)
- Write Observation File for your lab task and store as readme.docx
- All .cpp files and .docx file must be compresses as YOUR_ROLL_NUMBER-Lab-05.zip
- Only submit one zip file

***** BEST OF LUCK *****