

National University of Computer and Emerging Sciences



Programming Fundamentals CS188 Laboratory Manual

Course Instructor

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Section


BDS-1B1 & B2

Semester

FALL 2021

FAST School of Computing
Department of Software
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**National University of Computer and Emerging Sciences,
Lahore Campus**

	Lab No 5		
	Course Name:	Programming Fundamentals	Course Code:
	Program:	BS(DS)	Semester:
	Duration:	3 hours	Total Points:
	Lab Date:	Saturday, October 23, 2021	Weight
	Section:	BDS-1B	Page(s):

Instruction/Notes: Cheating during the lab will result in negative marks

Topics Covered: For Loop

Submission Instructions:

1. Save all .cpp files according to the following naming convention
{ROLLNO}_{ACTIVITYNO}_{TASKNO}.cpp **FOR EXAMPLE.** 21L-XXXX_A01_P01.cpp, 21L-XXXX_A01_P02.cpp, 21L-XXXX_A02_P01.cpp
2. Now create a new folder according to the following naming convention
{ROLLNO}_{LABNO} e.g. 21L-XXXX_L02
3. Move all of your .cpp files to this newly created directory and compress it into a single file.
4. Submit this compressed file on Google Classroom.
5. You will get 10 Bonus point if you will follow these instructions correctly

Activity No 1

Problem No 1:

Use these code segments within a loop to create programs that can print the following patterns

<p>Filled Square of height H</p> <p>The value of H will be given by the user</p>	<p>Sample output for H = 8</p> <pre>* *</pre>
<p>Hollow Square of height H</p> <p>The value of H will be given by the user</p>	<p>Sample output for H = 6</p> <pre>* * * * * * * * * * * * * * * * * *</pre>

<p>Filled Square of height H</p> <p>The value of H will be given by the user</p>	<p>Sample output for H = 8</p> <pre> * * * * * * * * * * * * * * * *</pre>
<p>Hollow Triangle of height H</p> <p>The value of H will be given by the user</p>	<p>Sample output for H = 8</p> <pre> * * * * * * * * * * * * * * * * * * * * * * *</pre>

Activity No 2.

Problem No 1:

Write a program that print the following format:

For Example:

If the input is n=5, the program must print

```
1 1
12 21
123 321
1234 4321
123454321
```

Problem No 2:

Write a program that print the following format:

Enter outer loop:3

Enter inner loop:5

```
5 1 4 2 3 3 2 4 1 5
5 1 4 2 3 3 2 4 1 5
5 1 4 2 3 3 2 4 1 5
```

Activity No 3.

Write a program that takes a number from user and tells the frequency of each digit in that number.

Input	Output
Enter a number: 675343071	Frequency of 0= 1 Frequency of 1= 1 Frequency of 2= 0 Frequency of 3= 2 Frequency of 4 =1 Frequency of 5 =1 Frequency of 6=1 Frequency of 7 =2 Frequency of 8 =0 Frequency of 9 =0