

(CL1002) Programming Fundamentals Lab

Lab 9 Task:

- Before doing the task, I recommend you all to go through the lab manual. It will make it easy for you all to understand this.
- Copied task will be awarded **zero** marks.
- Upload only a MS word and PDF file including all tasks source code and its output (screen shot).
- You have to copy the source code in your word file. Don't take the screen shot of source code.
- Use the following format for naming the word file Rollno_name (21P-1234_zain).
- Comments your Code Properly

1. Write a python program that prints the following patterns separately one below the other. Use nested for loop to generate the patterns.

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

2. Write a Python function to construct the following pattern, using a for loop. User should enter a symbol e.g *, ^, @, - etc, and your function should a pattern like this of that symbol

Sample Output:

Enter symbol #

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

Enter symbol *

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

3. Write a program that prompts the user for information for three students. For each student prompt for the student ID and three quiz grades. Use a nested loop, where the inner loop prompts for the three quiz grades. Print the student's name and average – formatted to two decimal places. View the sample output as a guide.

Sample Output:

```
Enter the name of student 1: Ali
Enter Score 1: 78
Enter Score 2: 90
Enter Score 3: 91
Name: Ali
Average: 86.33
Enter the name of student 2: Hamza
Enter Score 1: 70
Enter Score 2: 75
Enter Score 3: 93
Name: Hamza
Average: 79.33
Enter the name of student 3: Zain
Enter Score 1: 55
Enter Score 2: 76
Enter Score 3: 80
Name: Zain
Average: 70.33
```

Additional Task (Not Graded)

4. Write a Python function to construct the following pattern, using a for loop. User should enter a symbol e.g *,^,@,- etc, the number of rows and your function should a pattern like this of that symbol.

Sample Output:

```
Enter the number of rows 5
Enter symbol $
```

```
  $
 $$$
$$$$$
$$$$$$$
$$$$$$$$$
$$$$$$$$$$
```

```
Enter the number of rows 7
Enter symbol @
```

```
  @
  @@@
 @@@@
@@@@@
@@@@@@
@@@@@@@
@@@@@@@@
@@@@@@@@@
@@@@@@@@@
@@@@@@@@@
@@@@@@@@@
```