National University of Computer and Emerging Sciences, Lahore Campus

	Lab No. 09			
	Course Name:	**Programming Fundamentals**	**Course Code:**	
	Program:	**BS(DS)**	**Semester:**	**Fall 2021**
	Duration:	**3 hours**	**Total Points:**	**10 + 40 + 50**
	Lab Date:	**Saturday, November 27, 2021**	**Weight**	**4%**
	Section:	**BDS-1B**	**Page(s):**	

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

Topics Covered: Functions, Arrays, Nested Loop

Programming Fundamentals
CS188 Lab Manual

Course Instructor	Mr. Waqas Manzoor
Lab Instructor(s)	Raja Muzammil
	Mr. Muhammad Waqas
Section	BDS-1B1 & B2
Semester	FALL 2021

FAST School of Computing Department of Computer Science FAST-NU, Lahore, Pakistan

Name **Roll No.** **Signature**

Instructions

- For each problem, your filename should be “q Number-rollno”.cpp. e.g For Problem 1, create “q1-l21-1234.cpp and create one zip folder for all files.
- Internet is not allowed during the exam.
- Discussion and sharing of anything will lead strictly to a plagiarism case.
- You can only use the internet for submission.
- Submit the zip folder on Google classroom.
- Good Luck.

Problems

Write C++ Code for the following problems.

Problem# 1

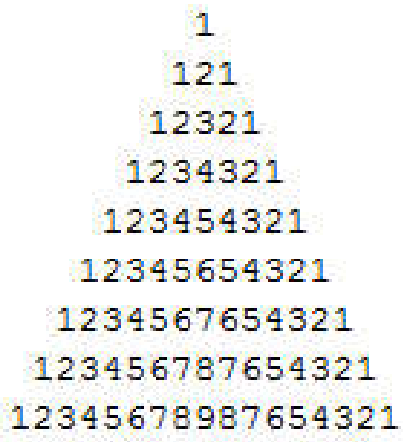
Write a function ***PrintPattern(int size)*** that prints the triangular palindrome for the given size.

Note: you should call that function in main to print the pattern**:**

```
int  size;
cout<<"Enter Size:"<<endl;
cin>>size;
PrintPattern(size);
```

Output:

For size 9, that pattern should print like this:



Problem# 2

Write a function **FindNumbers*(int arr[], int size, int sum, int multiplication)*** that finds two numbers in 1D-array that have the given sum and multiplication.

Note: you should call that function in main**:**

```
int arr [10] = {1,5,6,7,8,9,4,11,12, 3};
int sum = 9;
int multiplication = 18;

FindNumbers(arr, 10, sum, multiplication);
```

Output:

```
Numbers are 6, 3. Their sum is 9 and multiplication is 18.
```
