



**National University of Computer & Emerging Sciences,  
Karachi**



**Fall-2020 - Software Engineering**

**Mid-Term Exam**

**28<sup>TH</sup> November 2020, 01:00 p.m. – 03:00 p.m.**

<b>Instructor Name</b>	Muhammad Irfan Ayub / Engr. Kariz Kamal / Rahemeen Khan / Hamza Ahmed		
<b>Course Code</b>	CL-118	<b>Course</b>	PF Lab
<b>Student ID</b>		<b>Section</b>	

Instructions:

- Return the question paper.
- Read each question completely before answering it.
- This paper includes **04 Fun Rides** for starting your journey in the World of FAST-NUCES. Have Fun and Enjoy :)
- There are **02** Pages.
- In case of any ambiguity, you may make assumption. But your assumption should not contradict any statement in the question paper.
- Each question must be done in a **separate file** named according to the question number i.e Mid\_Q1.c, Mid\_Q2.c, Mid\_Q3.c, Mid\_Q4.c.

**Time:** 120 minutes.

**Max Marks:** 20 points (5 - Points each)

**Fun Ride - 01:**

Create a function called “**bool CheckPrime(int)**”. Use this function to print the first **N** Prime Numbers.

NOTE: **N** is the user input.

**Fun Ride - 02:**

Write a function “**void Print(int)**” to print a pattern of stars ( \* ) using loops. For example: pattern with **N = 4** (Notice there is a space between stars)

```

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

**Fun Ride - 03:**

**You** are a TA for PF Lab Course. Your goal is to design a program which can help you and your teacher in entering Lab Marks. You have decided to make following functions. (**You have to decide the parameters for each function**).

- void PrintAllMarks( ?? ) -- Prints marks of all labs w.r.t to Student ID
- void SetMarks( ?? ) -- Takes Input of Marks w.r.t to student ID
- void PrintLabMax( ?? ) -- Prints Max Marks of a given lab.
- void PrintLabAvg( ?? ) -- Prints Average of a given lab.
- void PrintLabMin ( ?? ) -- Prints Min Marks of a given lab.
- void PrintStdAvg ( ?? ) -- Prints Average Marks of a Given Student

**\* All Functions above should print an error if the given lab / student id is not present.**

**NOTE:** Use 2D Array to store Marks w.r.t Student ID (as shown below - for 5 Students and 09 Labs)

Std ID	Lab 1	Lab 2	Lab 3	Lab 4	Lab 5	Lab 6	Lab 7	Lab 8	Lab 9
1111	2	1	0	2	2	1	2	2	2
2222	2	2	2	2	2	1	1	2	2
3333	1	1	1	2	2	1	2	1	2
4444	2	2	0	0	2	0	2	2	2
5555	1	0	0	2	0	2	1	2	2

\* This also shows the output of *PrintAllMarks* Function

**HINT:** Name of the array acts as a pointer hence changes are reflected everywhere.

**Fun Ride - 04:**

**Mr. Ahmed** has **N** children. Every day while returning home Mr. Ahmed distributes **M** amount of Money among children. Write a program that takes an input of **M** amount and **N** children and shows the distribution of money (In Currency -- 100,50,20,10,5,2,1) among children.

Examples:

For N=5 and M = 100 -- Each Child gets **One 20 Rupee Notes**.

For N=6 and M = 90 -- Each Child gets **One 10 Rupee Note and One 5 Rupee coin**.

For N=10 and M=999 -- Each Child gets **One 50 Rupee Note, Two 20 Rupee notes, One 5 Rupee Coin and Two 2 rupee coins**. and Mr. Ahmed have **9 Rupees left**.