United International University
Department of CSE
CSE 1112: Structured Programming Language Lab
Final Examination | Summer 2022 | Set (0900-1130)
Time: 1 Hour | Full Marks: 25

Class ID: **Name:**

Q1 HIGHEST CGPA **[10]**

Declare a structure of students with three variables (name, id, and cgpa). Now take the input of two students and print the information of that student who has the higher cgpa.

Sample Input	**Sample Output**
3 Shakib Al Hasan 101 3.5 Tamim Iqbal 102 2.7 Akib Zaman 203 3.1	Shakib Al Hasan 101 3.5

Q2 THE MAGICIAN MODRIC **[15]**

Base 6 Conversion: 5	**Prime Checker: 5**	**Use of Recursion and Call by Reference: 3**	**Perfect Output: 2**

Magician Modric is visiting the town again. This time he has told all of his followers to guess a number and He has decided to give them a Mega reward based on any of the following constraints:

1. If the Number is converted into a base of 6 and the sum of the digits of that converted number is divisible by 5.
2. If the count of Prime Numbers is between 0 to the sum of the first and last digit of the given number is more than 4.

Write a Program to assist Modric automating this Process by creating the following functions:

- **`int convBase (int num)`: This must be a recursive function to find out the conversion into Base 6.**
- **`int primeChecker (int* a, int* b)`: Count the Prime numbers between two range and return the value.**

You may write more functions if required apart from these two.

Input: Take a Number from the user

Output: Print **YES** if He/She will receive the Mega Modric Reward. Else Print **NO**

Ser	Input	Output	Explanation
1	103	NO	Condition 1 Check: ● 103 to Base (6) = 251 ● Sum of the Digits = 2+5+1 = 8 ● 8 is not Divisible by 5 Decision: False Condition 2 Check: ● First Digit = 1 ● Last Digit =3 ● Sum = 1+3 =4 ● Prime Numbers between 0 to 4: 2,3. So Only 2 numbers ● 2 is not more than 4 Decision: False Both False Thus Print NO
2	35	YES	Condition 1 Check: ● 21 to Base (6) = 55 ● Sum of the Digits = 5+5 = 10 ● 10 is Divisible by 5 Decision: True Condition 2 Check: ● First Digit = 3 ● Last Digit =5 ● Sum = 3+5=8 ● Prime Numbers between 0 to 4: 2,3,5,7. So 4 numbers ● 4 is not more than 4 Decision: False At least one of the conditions is TRUE Thus Print YES