AMERICAN INTERNATIONAL UNIVERSITY-BANGLADESH (AIUB)
Faculty of Science and Technology (FST)
Department of Computer Science (CS)
Introduction to Programming [**LAB EXAM**]

"Copy and pasting code without understanding is like chewing a gum that is already chewed by someone else."

Question 1 to 3 is Mandatory   (3 X 5 = 15)

1. Write a program in C++ to take Marks of four subjects and calculate the total percentage.
   Hint: Total = sub1marks + sub2marks + sub3marks + sub4marks
   Percentage = (Total/400) * 100
   Sample output:
   Subject 1 Mark = 80
   Subject 2 Mark = 90
   Subject 3 Mark = 78
   Subject 3 Mark = 96
   Percentage = 86

2. Write a program in C++ to take three numbers as input and find the maximum of the three numbers. Take hint from pseudo code on right side.

   Sample output:
   Enter Three Numbers:
   11
   50
   35
   Maximum Number is: 50

   ```
   1. Read 3 numbers: a, b, c;
   2. Set LargeNum = a;
   3. If b > LargeNum
          LargeNum = b;
   4. If c > LargeNum
          LargeNum = c;
   5. Print LargeNum;
   ```

3. AIUB provides Academic Scholarship and Financial aid to students. To get the scholarship or the aid students need to meet some criteria. Now write a C++ program to implement the criteria described below, take user input for CGPA, Number of grade lower than B+ and Number of course drop.

   CGPA should be ≥ 3.75 and **no grade lower than B+** and **no Course Drop**
      You are Applicable for 40% Scholarship

   CGPA should be ≥ 3.70 and **no grade lower than B+** but **1 Course Drop**
      You are Applicable for 15% Financial AID

   CGPA should be ≥ 3.70 and there is **1 or more grade lower than B+** but **2 to 3 Course Drop**
      You are Applicable for 10% Financial AID

   In any other criteria show
      You are not Applicable for Scholarship or Financial AID

   Sample output:
   CGPA: 3.78
   Number of Grade lower than B+: 0
   Number of Course Drop: 1
   You are Applicable for 15% Financial AID

4. **Write a program in C++ to Reverse an Integer Number.**

   Sample output:
   Enter an Integer Number: 1234
   Reverse of the Integer: 4321

5. **Write a program in C++ to take a numbers as input and check if it is Prime or Not Prime.**

   Sample output:
   Enter a Number to Check Prime: 37
   37 is a Prime Number

Answer any 1 from Question 6 and 7   (1 X 10 = 10)

6. **Write a program in C++ use array to take N students quiz_1[N] and quiz_2[N] marks as input. After that find the average marks from two quizzes and save results on avg_quiz[N] and show the results.**

   Sample output:
   Number of Students: 4
   Quiz-1 Marks:
   14
   25.5
   28
   10
   Quiz-2 Marks:
   20
   27
   26
   18
   Quizzes AVG: 17 26.25 27 14

7. **Write a program in C++ to take N Students Mid Term Marks as input and find the Lowest and Highest marks.**

   Sample output:
   Number of Students: 3
   87.5
   78
   94
   Lowest Mark is: 78

**************** GOOD LUCK ****************

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