EAST WEST UNIVERSITY
Department of Computer Science and Engineering
B.Sc. in Computer Science and Engineering Program
Lab 1, Summer 2024 Semester

Course:	**CSE 110 Object Oriented Programming**
Instructor:	**Sadia Nur Amin, Lecturer, CSE Department**
Full Marks:	**TBA**
Time:	**2.5 Hours**

1.	A school has following rules for grading system: a. Below 25 - F b. 25 to 45 - E c. 45 to 50 - D d. 50 to 60 - C e. 60 to 80 - B f. Above 80 - A Ask user to enter marks and print the corresponding grade.
2.	Write a Java program to check whether a triangle is Equilateral, Isosceles or Scalene. Test Data: 50 50 60 Expected Output: This is an isosceles triangle.
3.	Write a Java program to calculate the factorial of a given number. Test Data : Input the number : 5 *Expected Output* : The Factorial of 5 is: 120
4.	Armstrong Number An Armstrong number is a positive m-digit number that is equal to the sum of the mth powers of their digits. It is also known as pluperfect, or Plus Perfect, or Narcissistic number. It is an OEIS sequence A005188. Let's understand it through an example. Armstrong Number Example 1: 11 = 1 2: 21 = 2 3: 31 = 3 153: 13 + 53 + 33 = 1 + 125+ 27 = 153 125: 13 + 23 + 53 = 1 + 8 + 125 = 134 (Not an Armstrong Number) 1634: 14 + 64 + 34 + 44 = 1 + 1296 + 81 + 256 = 1643

	Similarly, we can check other number also. The first few Armstrong numbers between 0 to 999 are 1, 2, 3, 4, 5, 6, 7, 8, 9, 153, 370, 371, 407. Some other Armstrong numbers are 1634, 8208, 9474, 54748, 92727, 93084, 548834, 1741725, 4210818, 9800817, 9926315, 24678050, 24678051, 88593477, 146511208, 472335975, 534494836, 912985153, 4679307774, 32164049650, 32164049651. Write a Java program to find a number is Armstrong or not.
5.	Write a Java program to print the area and perimeter of a rectangle. Test Data: Width = 5.5 Height = 8.5 Expected Output Area is 5.6 * 8.5 = 47.60 Perimeter is 2 * (5.6 + 8.5) = 28.20
6	Write a Java program to swap two variables without using third variable.
7.	Write a Java program to compute the sum of the first 100 prime numbers. Sample Output: Sum of the first 100 prime numbers: 24133