

University of Engineering and Management, Kolkata

Theory Class Assignment-1, Second Semester-2024

Course Name: Programming for Problem Solving Laboratory

SPS

1. Write a program to find the absolute value of a number entered through the keyboard.
2. If cost price and selling price of an item are input through the keyboard, write a program to determine whether the seller has made profit or incurred loss. Also determine how much profit he made or loss he incurred.
3. Given three points **(x1, y1)**, **(x2, y2)** and **(x3, y3)**, write a program to check if all the three points fall on one straight line.
4. If the ages of Ram, Shyam and Ajay are input through the keyboard, write a program to determine the youngest of the three.

5. If the three sides of a triangle are entered through the keyboard, write a program to check whether the triangle is isosceles, equilateral, scalene or right-angled triangle.
6. Any character is entered through the keyboard, write a program to determine whether the character entered is a capital letter, a small case letter, a digit or a special symbol. The following table shows the range of ASCII values for various characters:

Characters ASCII Values

A – Z 65 – 90

a – z 97 – 122

0 – 9 48 – 57

special symbols 0 - 47, 58 - 64, 91 - 96, 123 - 127

7. Write a program to print all the ASCII values and their equivalent characters using a while loop. The ASCII values vary from 0 to 255.
8. Two numbers are entered through the keyboard. Write a program to find the value of one number raised to the power of another.
9. When interest compounds **q** times per year at an annual rate of **r** % for **n** years, the principal **p** compounds to an amount **a** as per the following formula
$$a = p (1 + r / q)^{nq}$$

Write a program to read 10 sets of **p**, **r**, **n** & **q** and calculate the corresponding **as**.