Branching Problem

Problem: Absolute value

Write a program to find the absolute value of a number entered through the keyboard.

Sample Input	Sample Output
52	52
-31	31

Problem: Parity Check

Write a C program to test whether a number is odd or even.

Sample Input	Sample Output
15	odd
20	even
34	even

Problem: Leap Year

Write a C program that takes a year as input and prints whether it is leap year or not. Note that, the input will only be positive number (>0).

Sample Input	Sample Output
1993	Not a leap year
1990	Not a leap year
2000	Leap year
2016	Leap year
1900	Not a leap year

Problem: Grading

Write a program to determine the grade based on an input number. The grades chart is given below:

Marks Obtained	Grade
80 or above	A+
75 - 79	A

70 - 74	A-
65 - 69	B+
60 - 64	B
0 - 59	D

Sample Input	**Sample Output**
85	A+
65	B+
10	D

Problem: Minimum

Write a program that takes three numbers as input and prints the smallest of these numbers. Note that, the output presentation format is not important, which means you can print -2.500000 instead of -2.5 for the second sample input given below.

Sample Input	**Sample Output**
10 30 20	10
10.5 30 -2.5	-2.5

Problem: Older person

Write a C program that takes as input the date of birth of two persons and prints whether the first person is older than the second one.

Sample Input	**Sample Output**
15/06/1999 25/05/1993	Person2 is older.
14/06/1999 15/06/1999	Person1 is older.
15/06/1999 15/06/1999	Same age.

Problem: Quadrant

Write a C program which takes the coordinates of a two dimensional point as input and determines its corresponding quadrant among the four quadrants of the two dimensional space. Note that, no input lying on the axes (X-axis/Y-axis) will be given.

Sample Input	**Sample Output**
10 10	First Quadrant
-10 10	Second Quadrant

Problem: Decimal to octal

Suppose, you need to write a decimal to octal converter. Write a C program that will take an integer input (the value of the input will be non-negative and less than 512) from a user. Consider this number as the decimal one. Then, your program will convert the number into its octal form which will be saved in to a variable. Finally, the program will print this value.

Sample Input	**Sample Output**
511	777
60	74
5	5

Problem: Extract Digit

Write a C program that will take an integer number (the number will be non-negative and less than 1000) as input and print the digits of the number.

Constraint: You have to solve the problem using the topics that you have learnt in the theory class/sessional class.

Sample Input	**Sample Output**
105	1 0 5
75	7 5
5	5

Problem: Triangle formation

Write a C program that will take three integer numbers as input from user.

Consider these integer numbers as the length of three arms of a triangle. Determine whether it is possible to build a triangle using these arms. Print “Yes” is possible and print “No” if not possible.

Sample Input	Sample Output
2 4 7	Yes
1 1 1	Yes
1 2 5	No

Problem: Point In Circle

Given the coordinates (x,y) of center of a circle and its radius, write a program that will determine whether a point lies inside the circle, on the circle or outside the circle. The input will contain 5 integers. The first two integers correspond to the x and y coordinates of the center of the circle. The third integer is the radius of the circle. And the final two integers represent the x and y coordinate of the point.

Sample Input	Sample Output
0 0 10 4 4	Inside the circle.
0 0 10 0 10	On the circle.
5 5 5 0 0	Outside the circle.

Problem: Count Consonant

Suppose, you will be given two lowercase alphabets. These alphabets will be either vowels or consonants. Your task is to write a C program which will determine how many consonants are there in the given alphabets.

Sample Input	Sample Output
ab	1
ai	0
bc	2

Problem: Closest Integer

Write a C program that takes a real number and prints the ceil, round, floor value of the real number. The real number can be both positive and negative. **Constraint:** You can't use any predefined function i.e ceil(), round(), floor().

Sample Input	Sample Output
2.7	2 3 3
13.3	13 13 14
-4.7	-5 -5 -4