PDS Lab Section 11

Lab Day 2 – December 9, 2020

For this and all future assignment submissions, the top two lines of your programs must contain the following information:

//Roll No.: <Type in your roll no.>
//Name: <Type in your name>

For example, if you roll number is 20CS10001 and your name is Aman Kumar, the first two lines of each of your programs should be as follows:
//Roll No.: 20CS10001
//Name: Aman Kumar

There are four problems in today's lab for which you have to write four different C programs. You have to give different names to your C files and upload them in Moodle. Please read the instructions given below.

1. Read a pair of integers **m** and **c** representing the coefficients of a line of the form **y = mx + c**. Read another pair of integers **a** and **b** representing the **x** and **y** coordinates of a point. Write a C program to determine whether the point lies on the line. Display your answer as either Yes or No.

   Name your C program file as LD2_1_<roll_no>.c. Here <roll_no> denotes your roll number. For example, if your roll number if 20CS10001, your file name should be LD2_**1**_20CS10001. **[5 Marks]**

2. Write a C program that reads two triplets of floating point numbers **a1,b1,r1** and **a2,b2,r2** denoting the centers and radii of two circles. Here, **a1,b1** are the x,y coordinates of the center of the first circle with radius **r1**. Similarly, a2,b2 are the x,y coordinates of the center of the second circle with radius **r2**. Determine the distance between the centers of the two circles. Display your answer as a floating point number.

   Name your C program file as LD2_**2**_<roll_no>.c. **[5 Marks]**

3. Assume that you are going to deposit a certain amount of money in bank fixed deposit. Write a C program to read two integers **a** and **b** representing the amount being deposited and the period of deposit in years, respectively. Also, read a floating point number **r** indicating the yearly interest rate in percentage. Compute and display the amount payable at the end of the deposit period assuming (a) Simple interest rate computed at the end of the complete deposit period and (b) Yearly compound interest computation.

   Name your C program file as LD2_**3**_<roll_no>.c. **[5+5 Marks]**

4. Consider a square of side length L and a circle of radius R, where L and R are integers and read as inputs from the user. Write a C program to determine whether the square can be placed inside the circle, the circle can be placed inside the square, or none can be placed inside the other. Display your answer as SQINCIR, CIRINSQ and NONE, respectively.

   Name your C program file as LD2_**4**_<roll_no>.c. **[10 Marks]**

   Submit your .c files in Moodle against the assignment submission link for Lab Day 2.