

PDS LAB – 2 (Section-5) Date: 16-January 2017.

Tutorial Problems

1. Write a C program to round of a floating point number to the nearest integer.
2. Write a C program to enter your name and print the same.
3. Using C program identify (i) whether the character entered through the keyboard is uppercase or lowercase and (ii) Whether the character entered through the keyboard is a special symbol or not.
4. 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.
5. Convert the decimal number 472 to hexadecimal and binary numbers.
6. Given the coordinates (x,y) of center of circle and its radius, write a program that will determine whether a point lies inside the circle.
7. Evaluate the following expressions:
 - a. $\text{Result} = 5 * b * b * x - 3 * a * y * y - 8 * b * b * x + 10 * a * y$; (assume $a = 3$, $b = 2$, $x = 5$, $y = 4$)
 - b. $\text{Result} = 10/5/2/1$;
 - c. $\text{Result} = 2 - 3 + 5 * 2 / 8 \% 3$;
 - d. $y = z = -3 \% -8 / 2 + 7$;
 - e. $a = b = c = 3 + 4$;

Assignment Problems

- 1) Write a C program to round of a floating point number to the nearest 1st and 2nd digits after a decimal point. (Ex: 10.32 -> 10.3, 10.327 ->10.33)
- 2) Write a C program to solve the quadratic equation $ax^2+bx+c=0$. The input to the program will be the coefficients (a, b and c), and output will be the roots of the quadratic polynomial.
- 3) Write C program to determine the day of the given date. Consider the reference as today's date (16 January 2017) and day (Monday). Assume that the user provide the date through keyboard as 8-digit number in "ddmmyyyy" format. The program has to print the given date and the corresponding day in the following format: Day of **16 January 2017** is **Monday**. The program should compute the day for both future and past dates.
- 4) Write a C program that reads x-y coordinates of three points A(x1; y1), B(x2; y2) and C(x3; y3). Check (i) whether they forms a triangle or not? (ii) whether the triangle is isosceles / equilateral / scalene? and (iii) whether the triangle is right angled? Print the inputs and outputs.
- 5) Write a C program to determine the equation of a perpendicular bi-sector (PBS) for the straight line AB. Assume that AB is not a horizontal line (y coordinates of A and B are not same). The program accepts the (x,y) coordinates of A and B, and it print the length of the line AB, slope of the line AB, mid-point of AB, slope of the PBS and equation of PBS.