Course Name:	**Programming in C**	**Semester:**	**II**
Date of Performance:	**15-01-2025**	**DIV/ Batch No:**	**c2-2**
Student Name:	**Ashwera Hasan**	**Roll No:**	**16010124107**

Experiment No: 1
Title: Working with data types and operators

Aim and Objective of the Experiment:

Write a program in C to demonstrate the use of data types and operators

COs to be achieved:

CO1: Understand the concepts of data types and operators

Theory:

Area and Circumference of Circle. Ask the user to enter the value of the radius of a circle. Put the values in the formula for finding the area of a circle and the circumference of a circle and print the outcome for area of a circle and the circumference of a circle.

Input of the distance between two cities in kilometers and converting them into meters, centimeters, feet, and inches.
Ex- If there are two cities "Gwalior" and "Delhi", their distance is 500 kilometers, after converting the distance from a kilometer, the distance value will be: 500000 meters, 1640420 feet, 19685050 inches, and 50000000 centimeters.

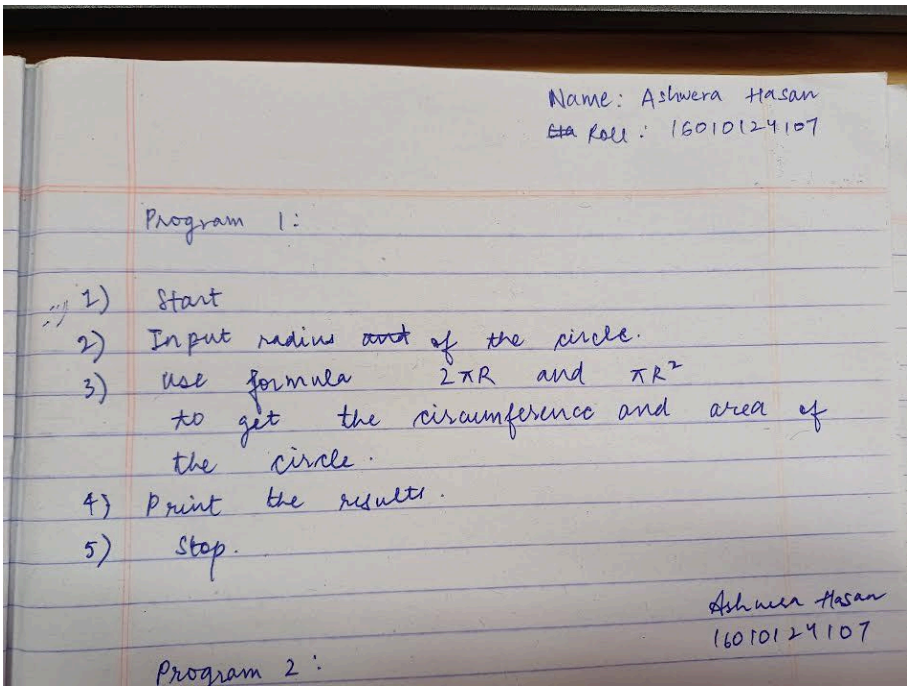
Problem Statements:

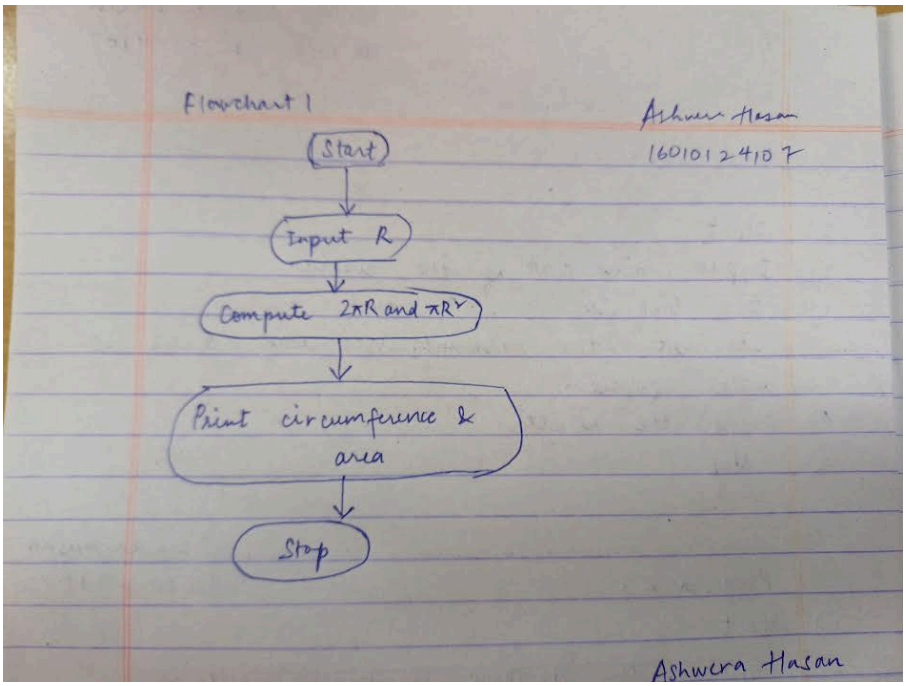
Write a program for the following

1. Compute the area and circumference of a circle.
2. Read the distance between two cities in KM and print that distance in meters, feet, inches, and centimeters.

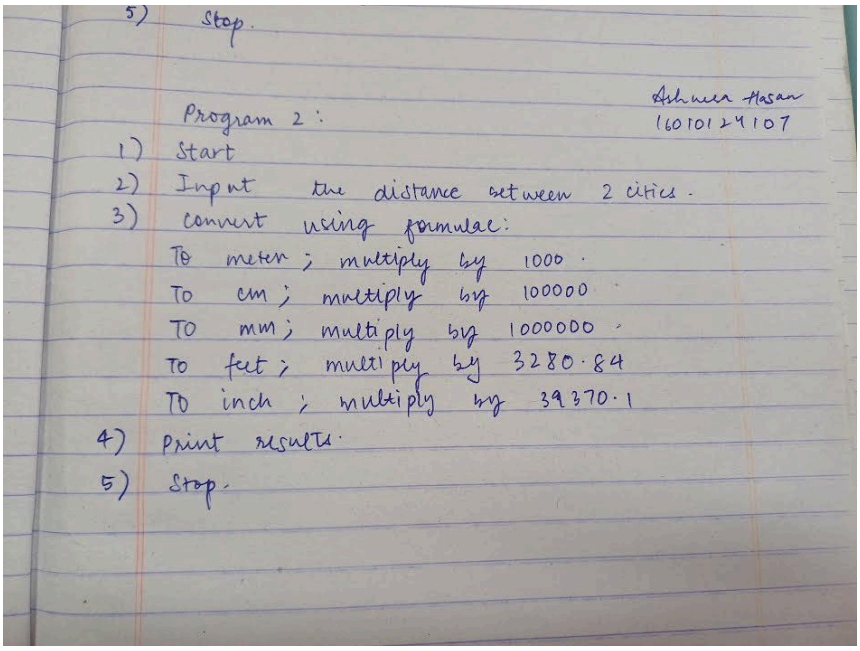
Algorithm And Flowchart:

1.





2.


5) Stop.
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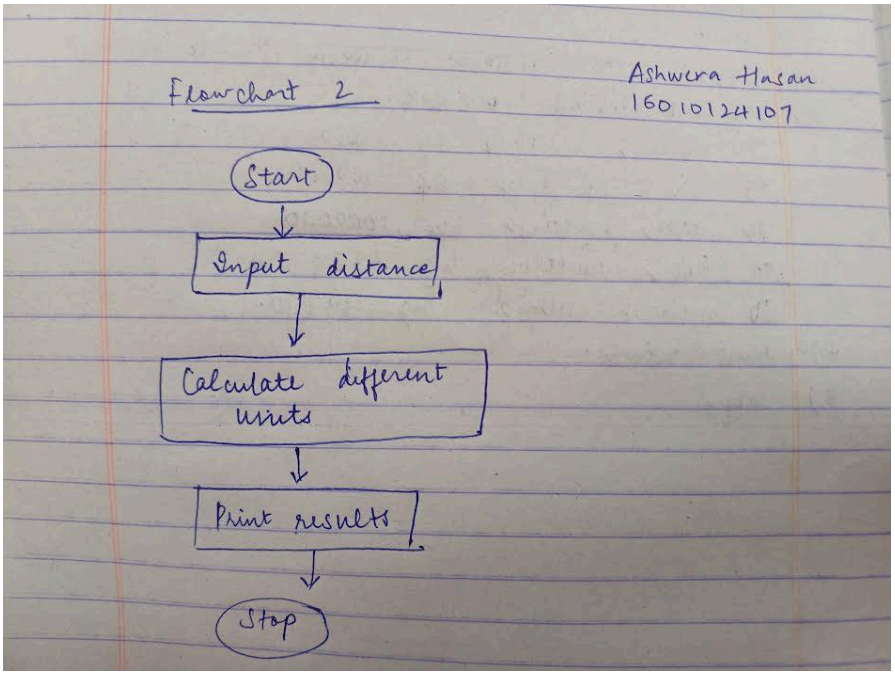
160101124107
Program 2:
1) Start
2) Input the distance between 2 cities.
3) convert using formulae:
To meter; multiply by 1000.
To cm; multiply by 100000
To mm; multiply by 1000000.
To feet; multiply by 3280.84
To inch; multiply by 39370.1
4) Print results.
5) Stop.


Flowchart 2
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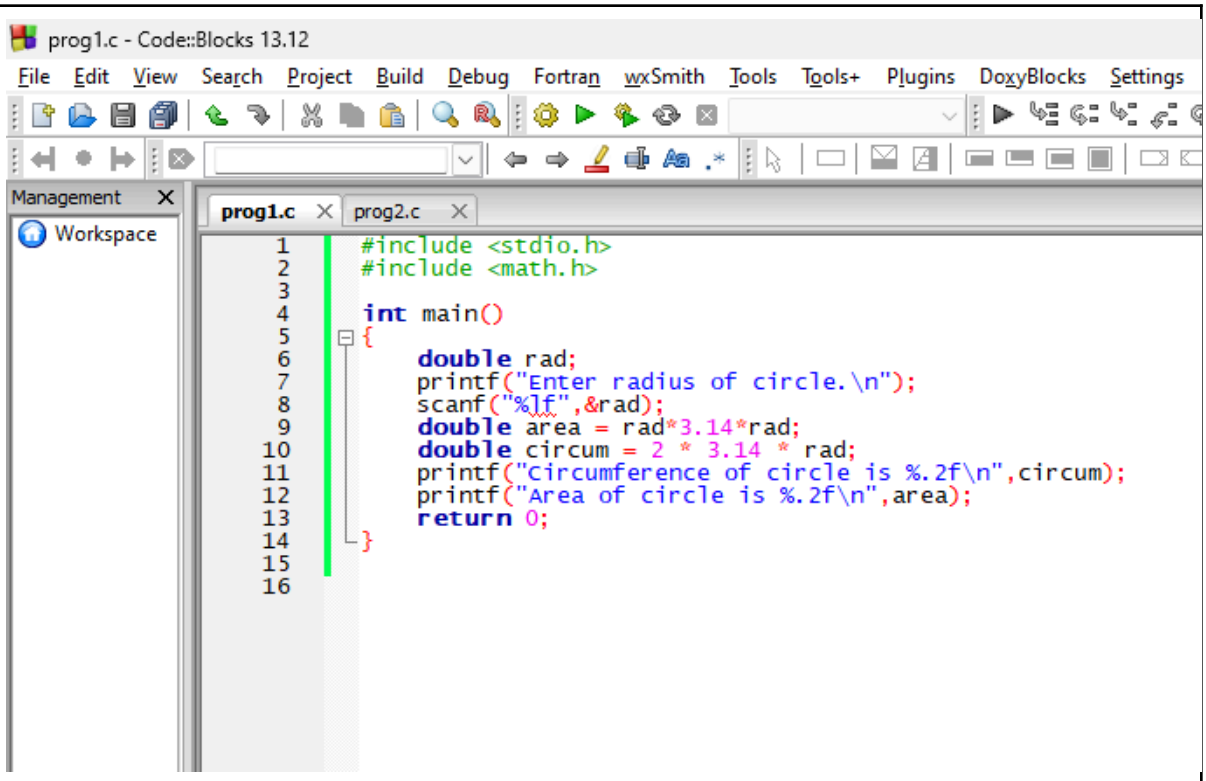
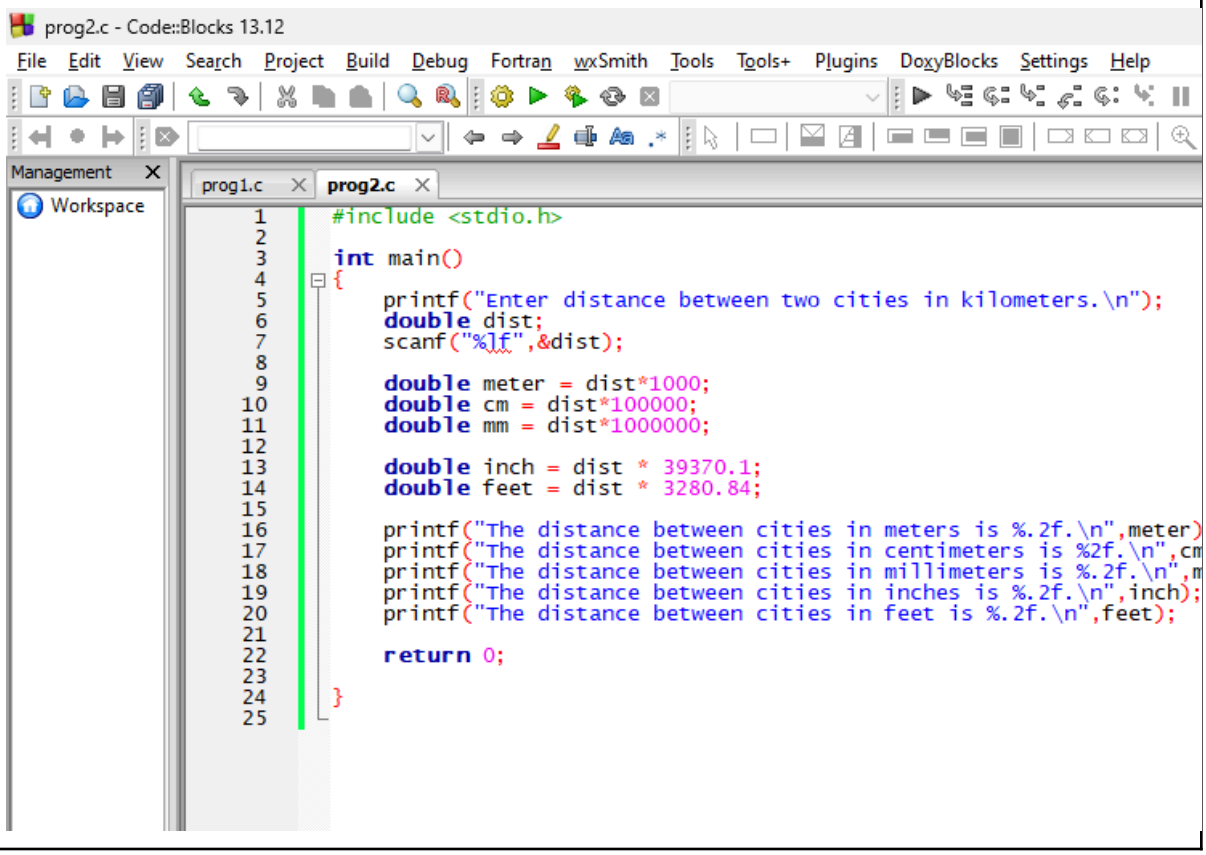
Start
Input distance
Calculate different units
Print results
Stop

Code :

1.

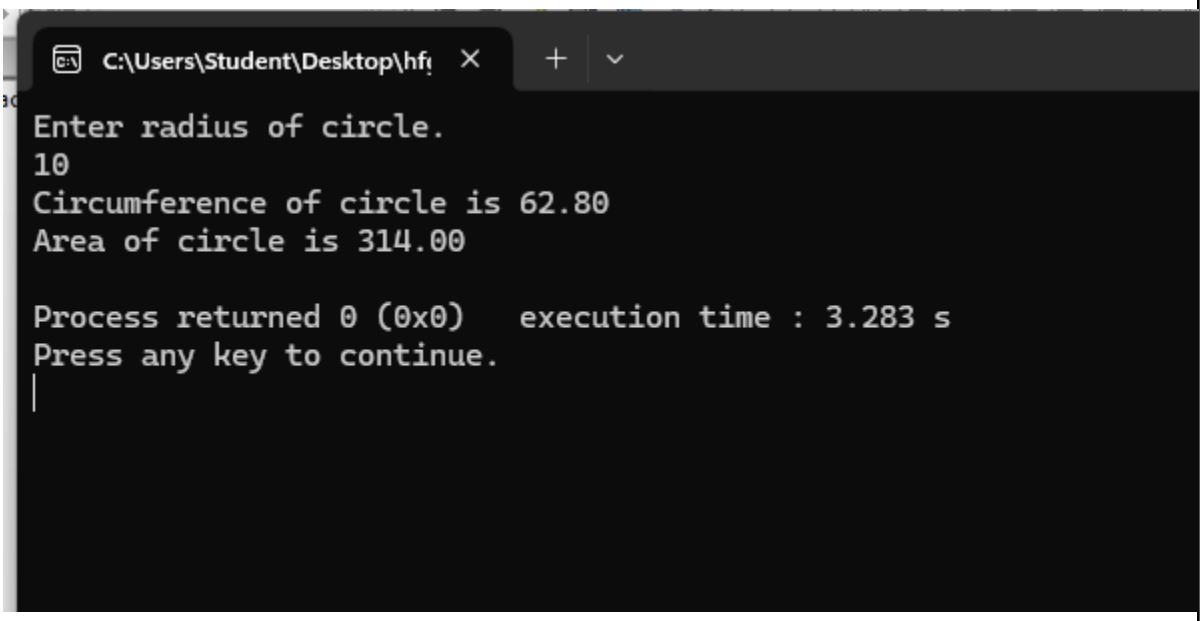

prog1.c - Code::Blocks 13.12
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings
Management
Workspace
prog1.c
prog2.c
#include <stdio.h>
#include <math.h>
int main()
{
double rad;
printf("Enter radius of circle.\n");
scanf("%lf",&rad);
double area = rad*3.14*rad;
double circum = 2 * 3.14 * rad;
printf("Circumference of circle is %.2f\n",circum);
printf("Area of circle is %.2f\n",area);
return 0;
}

2.

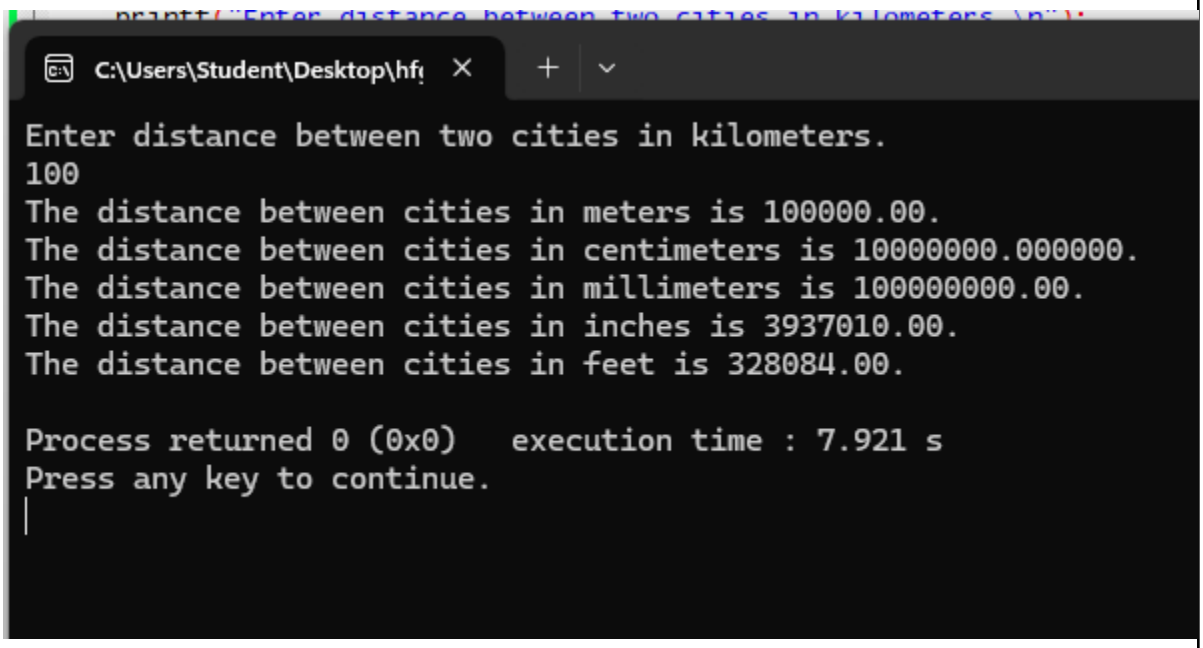

prog2.c - Code::Blocks 13.12
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help
Management
Workspace
prog1.c
prog2.c
#include <stdio.h>
int main()
{
printf("Enter distance between two cities in kilometers.\n");
double dist;
scanf("%lf",&dist);
double meter = dist*1000;
double cm = dist*100000;
double mm = dist*1000000;
double inch = dist * 39370.1;
double feet = dist * 3280.84;
printf("The distance between cities in meters is %.2f.\n",meter)
printf("The distance between cities in centimeters is %2f.\n",cm
printf("The distance between cities in millimeters is %.2f.\n",m
printf("The distance between cities in inches is %.2f.\n",inch);
printf("The distance between cities in feet is %.2f.\n",feet);
return 0;
}

Output:

1.



2.



Post Lab Subjective/Objective type Questions:

1. What are the basic data types in C?
   The basic data types in C include int, long, double, float, bool, and char.
2. Write a table for Operator Precedence and Associativity

Operator	Precedence	Associativity
*,%,/	1	Left to right
+,-	2	Left to right
<< , >>	3	Left to right
Relational <,>,<=,>=	4	Left to right
Bitwise &,^,|	5	Left to right
= Assignment	6	Right to left
+= , -= , *= , \=	7	Right to left

There are many more operators with different associativity. The highest precedence is given to parentheses, followed by multiplication, modulus, and division, followed by different operators as shown.

Conclusion:

We learnt the input and output syntax of C and how to calculate using different operators in C. This session was successful in equipping us with the basic syntax in C and how to work with different data types and operators as per the requirement.

Signature of faculty in charge with Date: