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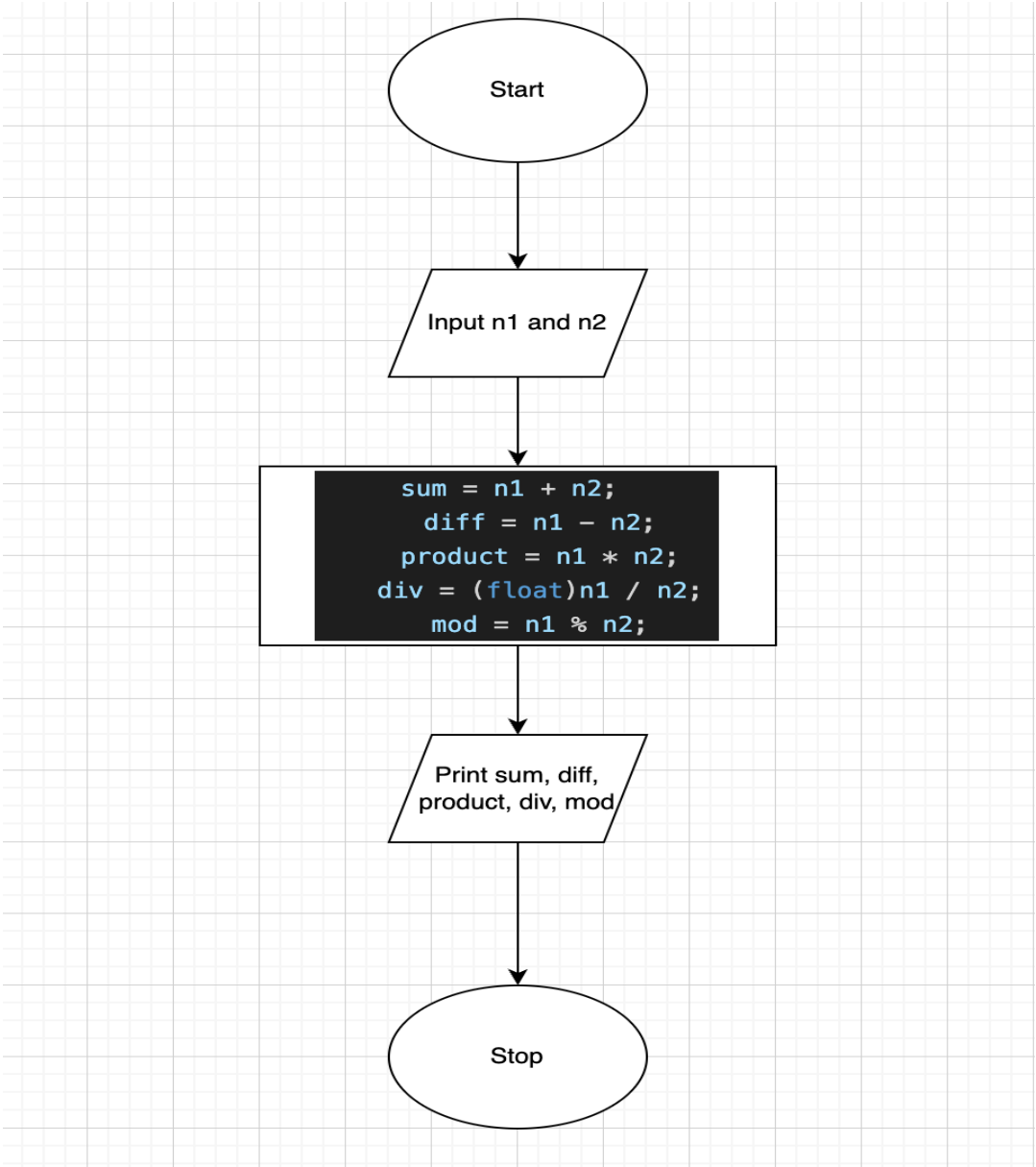
Experiment No.	1

AIM:	Use the formatted input/output statements, operators and expressions of C language.
Program 1	
PROBLEM STATEMENT:	`// Write a C program to input 2 numbers. Perform addition, subtraction, multiplication, division and modulus and display output.`
ALGORITHM:	Step 1: Input numbers n1 and n2. Step 2: Calculate the sum of n1 and n2. Step 3: Calculate the difference between n1 and n2. Step 4: Calculate the product of n1 and n2. Step 5: Divide n1 by n2. Step 6: Calculate the modulus of n1 and n2. Step 7: Print sum. Step 8: Print difference. Step 9: Print product. Step 10: Print quotient. Step 11: Print modulus.

FLOWCHART:



PROGRAM:

```c
#include <stdio.h>

int main()
{
    int n1, n2;
    float sum, diff, product, div, mod;

    printf("Input any two numbers separated by comma : ");
    scanf("%d,%d", &n1, &n2);

    sum = n1 + n2;
    diff = n1 - n2;
```

```
    product = n1 * n2;
    div = (float)n1 / n2;
    mod = n1 % n2;

    printf("Sum = %f\n", sum);
    printf("Difference = %f\n", diff);
    printf("Product = %f\n", product);
    printf("Quotient = %f\n", div);
    printf("Modulus = %f\n", mod);

    return 0;
}
```

RESULT: Input any two numbers separated by comma : 6,2
Sum = 8.000000
Difference = 4.000000
Product = 12.000000
Quotient = 3.000000
Modulus = 0.000000

Program 2

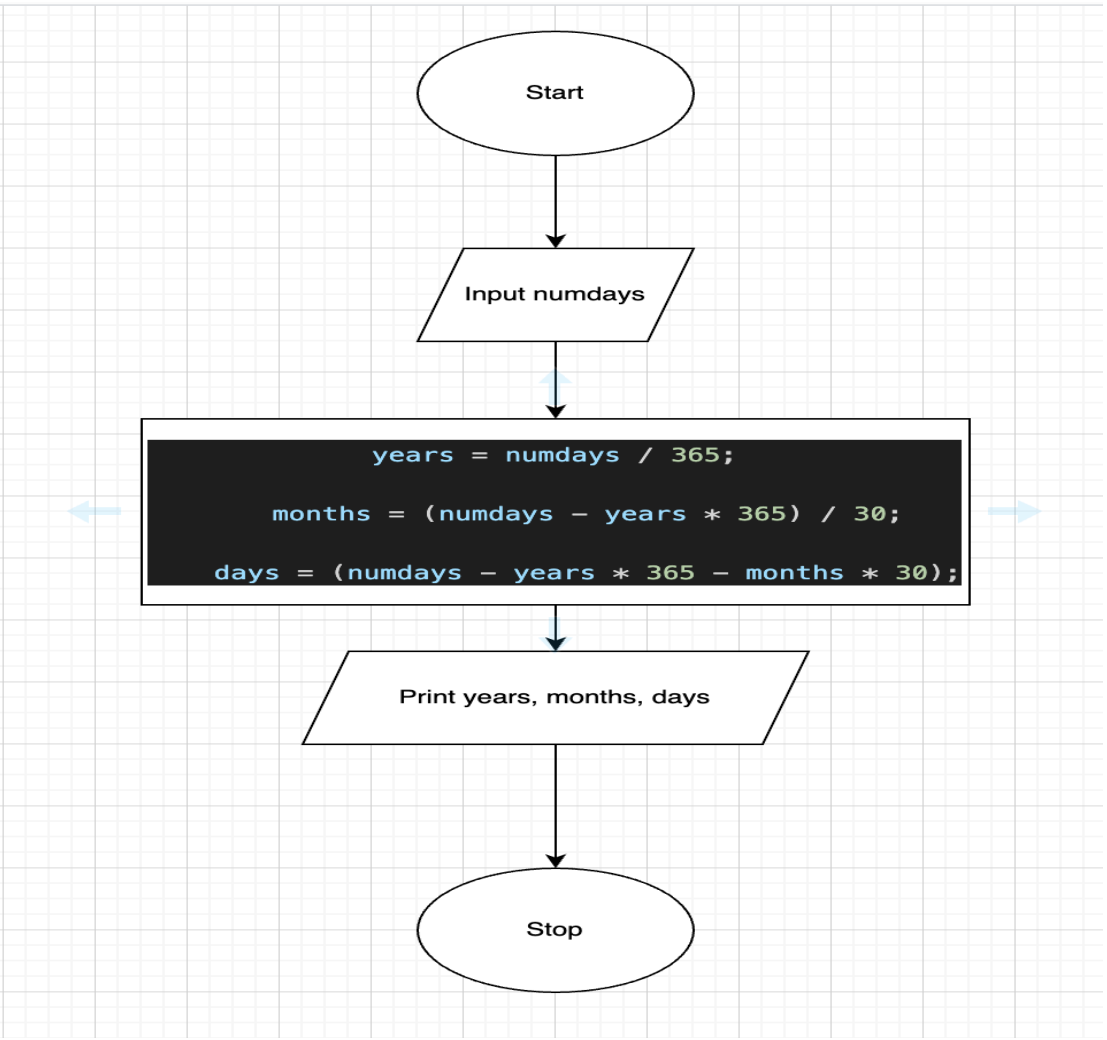
PROBLEM STATEMENT:

```
// Write a C program to convert days into year, month and days.
```

ALGORITHM:

Step 1: Input the total number of days as numdays
Step 2: Calculate the number of years by dividing numdays by 365.
Step 3: Calculate the number of months by subtracting year days from numdays and divide the total by 30.
Step 4: Calculate the number of days by subtracting year days and month days from numdays.
Step 5: Print years.
Step 6: Print months.
Step 7: Print days.

FLOWCHART:



PROGRAM:

```c
#include<stdio.h>

int main()
{
    int numdays, years, months, days;

    printf("Number of days = ");
    scanf("%d", &numdays);

    years = numdays / 365;

    months = (numdays - years * 365) / 30;

    days = (numdays - years * 365 - months * 30);

    printf("Years = %d", years);
    printf("\tMonths = %d", months);
```

```
    printf("\tDays = %d\n", days);

    return 0;
}
```

RESULT:
Number of days = 1001
Years = 2 Months = 9 Days = 1

Program 3

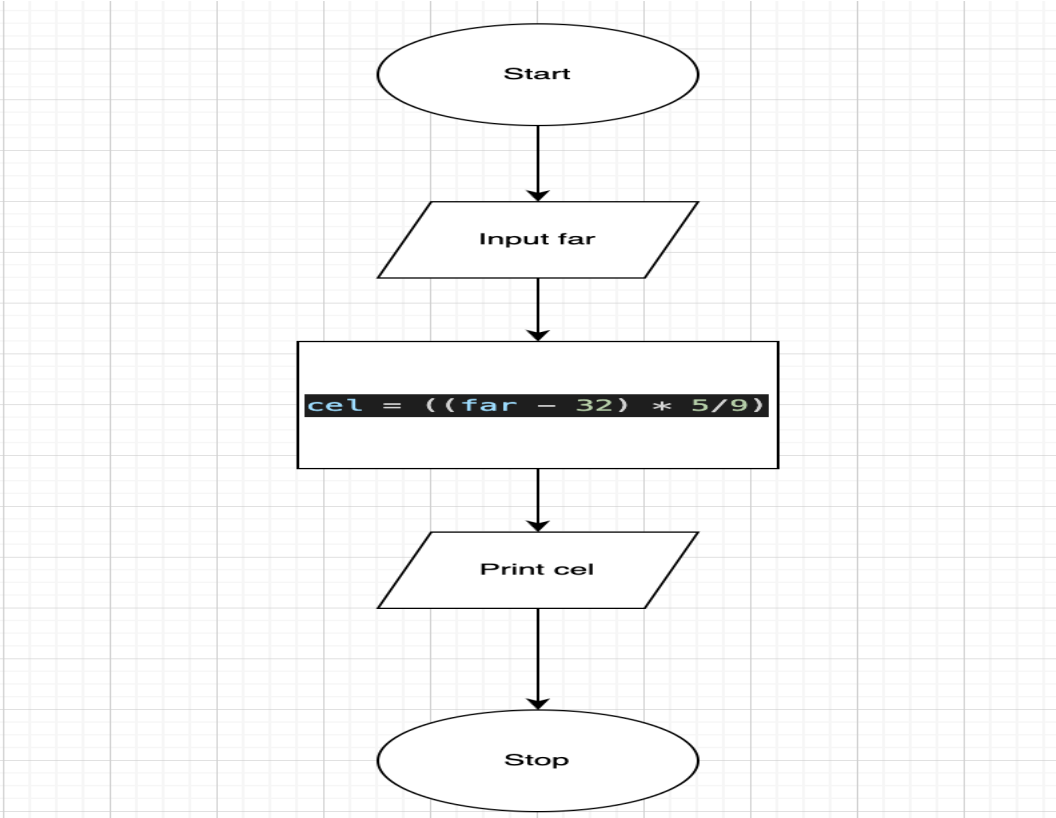
PROBLEM STATEMENT:

```
// Write a C program temp.c that accepts a temperature in Fahrenheit and
prints the corresponding temperature in Celsius.
```

ALGORITHM:

Step 1: Input temperature in Fahrenheit as far.
Step 2: Convert Fahrenheit to Celsius by using the formula c = (f-32) *5/9
Step 3: Print temperature in Celsius.

FLOWCHART:



PROGRAM:

```
#include<stdio.h>

int main()
```

```c
{
    float far, cel;

    printf("Enter temperature in Fahrenheit: ");
    scanf("%f", &far);

    cel = ((far - 32) * 5/9);

    printf("Temperature in Celsius = %f\n", cel);

    return 0;
}
```

RESULT:

Enter temperature in Fahrenheit: 123
Temperature in Celsius = 50.555557

Program 4

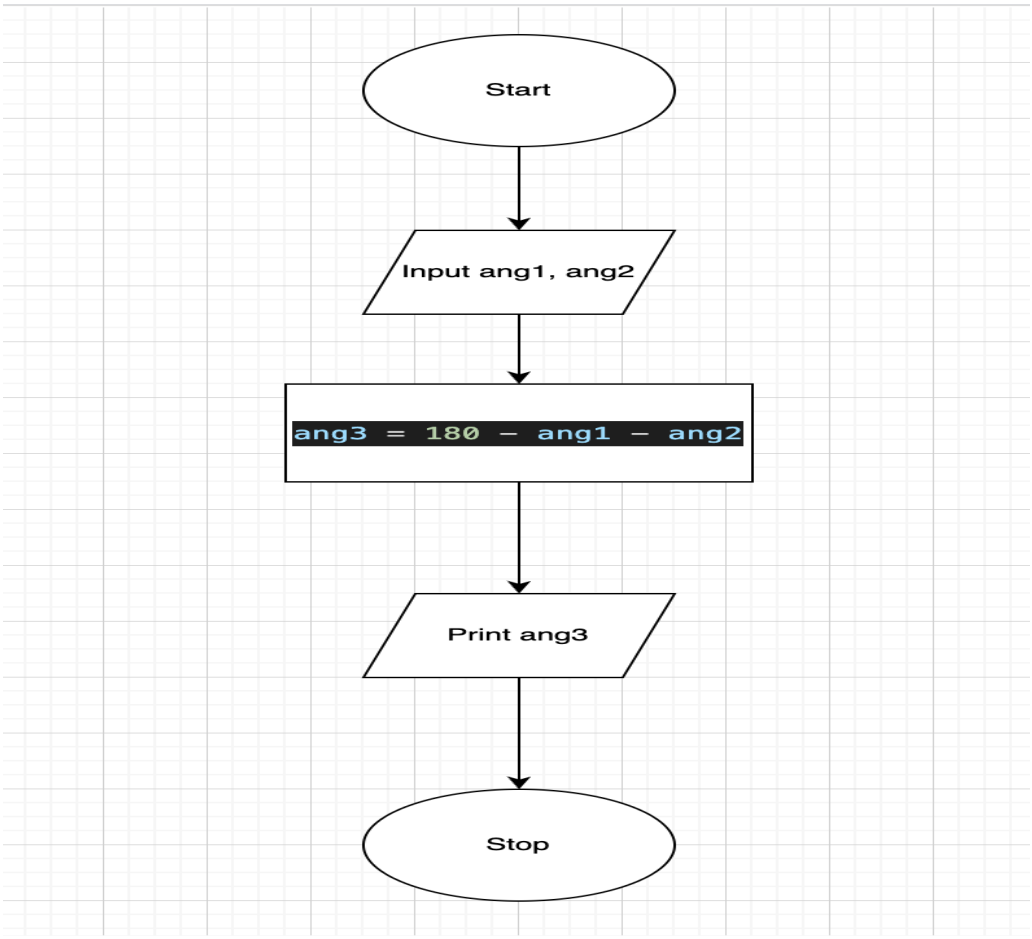
PROBLEM STATEMENT:

```c
// Write a C program to find the third angle of a triangle if two angles are given.
```

ALGORITHM:

Step 1: Input two angles of the triangle as ang1 and ang2.
Step 2: Find the 3rd angle by subtracting ang1 and ang2 from 180.
Step 3: Print the 3rd angle.

FLOWCHART:

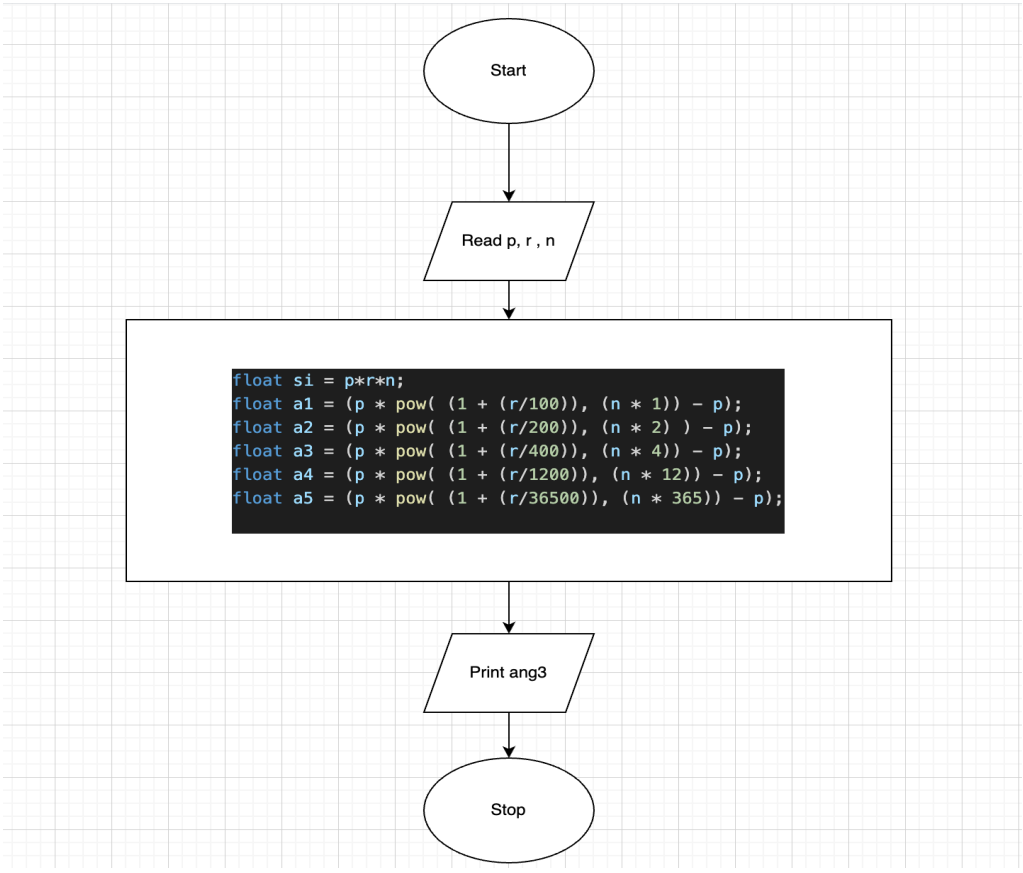


PROGRAM:

```c
#include<stdio.h>
int main()
{
    float ang1, ang2, ang3;

    printf("Enter any two angles of the triangle(in degrees) separated by comma : ");
    scanf("%f,%f", &ang1, &ang2);

    ang3 = 180 - ang1 - ang2;

    printf("3rd angle of the triangle in degrees= %f\n", ang3);

    return 0;
}
```

RESULT:

Enter any two angles of the triangle (in degrees) separated by comma : 23,56
3rd angle of the triangle in degrees= 101.000000

Program 5	
PROBLEM STATEMENT:	`// Write a C program intrst.c that calculates the total interest income on amount Rupees 5 lakhs in a period of 10 years. Show the results for simple interest, compounded interest when the compounding is done annually, semi-annually, quarterly, monthly and daily. Assume that the interest rate is 3.5% per year.`
ALGORITHM:	Step 1: Assign the given values to p, r , n. Step 2: Calculate and print simple interest using the formula p*r*n. Step 3: Calculate and print interest compounded annually by putting q = 1 in the formula. Step 4: Calculate and print interest compounded semi-annually by putting q = 2 in the formula. Step 5: Calculate and print interest compounded quarterly by putting q = 4 in the formula. Step 6: Calculate and print interest compounded monthly by putting q = 12 in the formula. Step 7: Calculate and print interest compounded daily by putting q = 365 in the formula.
FLOWCHART:	

PROGRAM:

```c
#include<stdio.h>
#include<math.h>

int main()
{
    float p, n, r, q;
    // q – number of times interest compounds per year.
    p = 500000;
    r = 3.5;
    n = 10;
    float si = p*r*n;
    printf("Simple interest on Rs. 500000.00 in 10 years = %f\n", si);
    float a1 = (p * pow( (1 + (r/100)), (n * 1)) - p);
    printf("Interest on Rs. 500000.00 in 10 years compounded annually = %f\n", a1);
    float a2 = (p * pow( (1 + (r/200)), (n * 2) ) - p);
    printf("Interest on Rs. 500000.00 in 10 years compounded semi-annually = %f\n", a2);
    float a3 = (p * pow( (1 + (r/400)), (n * 4)) - p);
    printf("Interest on Rs. 500000.00 in 10 years compounded quarterly = %f\n", a3);
    float a4 = (p * pow( (1 + (r/1200)), (n * 12)) - p);
    printf("Interest on Rs. 500000.00 in 10 years compounded monthly = %f\n", a4);
    float a5 = (p * pow( (1 + (r/36500)), (n * 365)) - p);
    printf("Interest on Rs. 500000.00 in 10 years compounded daily = %f\n", a5);

    return 0;
}
```

RESULT:

Simple interest on Rs. 500000.00 in 10 years = 17500000.000000
Interest on Rs. 500000.00 in 10 years compounded annually = 205299.156250
Interest on Rs. 500000.00 in 10 years compounded semi-annually = 207389.687500
Interest on Rs. 500000.00 in 10 years compounded quarterly = 208453.343750
Interest on Rs. 500000.00 in 10 years compounded monthly = 209174.703125
Interest on Rs. 500000.00 in 10 years compounded daily = 209402.390625

CONCLUSION: Successfully learnt basic input/output statements, operators and expressions in C language.