AIM:	Use the formatted input/output statements, operators, and expressions of C language
Program 1	
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.** **Expected output:** **Simple interest on Rs. 500000.00 in 10 years = Rs. 175000.00** **Interest on Rs. 500000.00 in 10 years compounded annually = Rs. 205299.38** **Interest on Rs. 500000.00 in 10 years compounded semi-annually = Rs. 207389.10** **Interest on Rs. 500000.00 in 10 years compounded quarterly = Rs. 208454.42** **Interest on Rs. 500000.00 in 10 years compounded monthly = Rs. 209172.41** **Interest on Rs. 500000.00 in 10 years compounded daily = Rs. 209521.87**
ALGORITHM:	1) Read principal=5,00,000 , rate=3.5, time=10, simple interest, compound interest and n 2) Calculate simple interest = principal*rate*time/100 3) n=1(annually) 4) Then calculate $$compound\ interest = principal * \left(1 + \frac{rate}{100 * n}\right)^{n*time} - principal$$ 5) Print simple interest and compound interest 6) n=2(semi-annually) 7) Then calculate $$compound\ interest = principal * \left(1 + \frac{rate}{100 * n}\right)^{n*time} - principal$$ 8) Print compound interest(semi-annually) 9) n=4(quarterly) 10) Then calculate

$$compound\ interest = principal * \left(1 + \frac{rate}{100 * n}\right)^{n*time} - principal$$

11) Print compound interest(quarterly)
12) n=12(monthly)
13) Then calculate

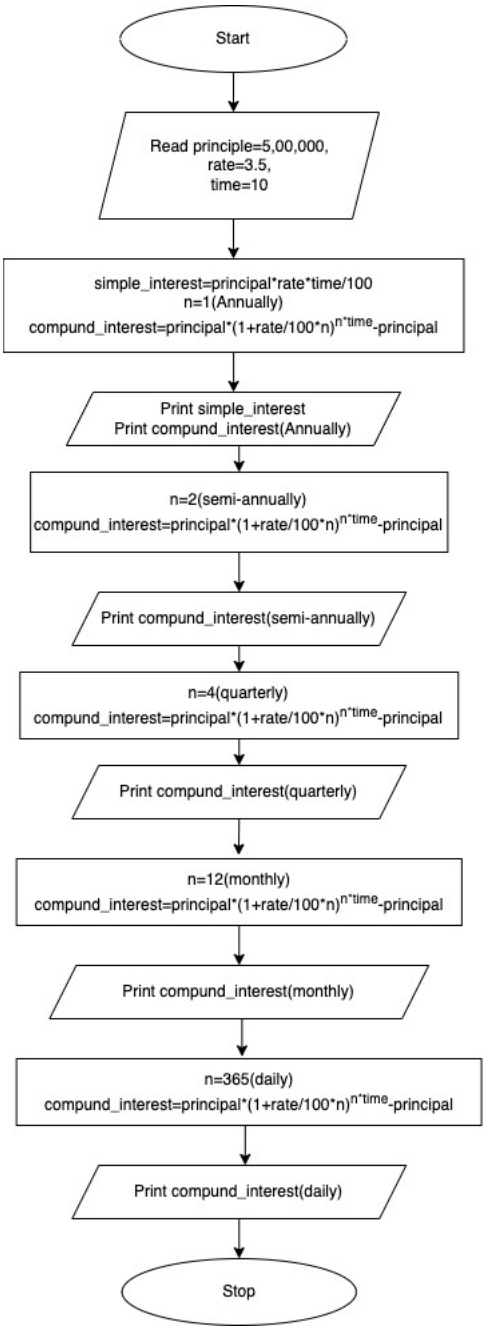
$$compound\ interest = principal * \left(1 + \frac{rate}{100 * n}\right)^{n*time} - principal$$

14) Print compound interest(monthly)
15) n=365(daily)
16) Then calculate

$$compound\ interest = principal * \left(1 + \frac{rate}{100 * n}\right)^{n*time} - principal$$

17) Print compound interest(daily)
18) Stop

FLOWCHART:

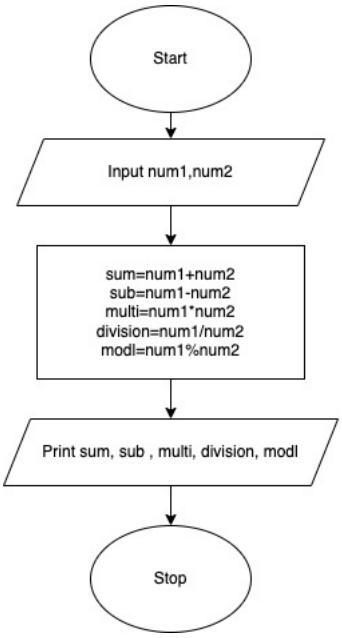

Start
Read principle=5,00,000,
rate=3.5,
time=10
simple_interest=principal*rate*time/100
n=1(Annually)
compund_interest=principal*(1+rate/100*n)^n*time-principal
Print simple_interest
Print compund_interest(Annually)
n=2(semi-annually)
compund_interest=principal*(1+rate/100*n)^n*time-principal
Print compund_interest(semi-annually)
n=4(quarterly)
compund_interest=principal*(1+rate/100*n)^n*time-principal
Print compund_interest(quarterly)
n=12(monthly)
compund_interest=principal*(1+rate/100*n)^n*time-principal
Print compund_interest(monthly)
n=365(daily)
compund_interest=principal*(1+rate/100*n)^n*time-principal
Print compund_interest(daily)
Stop

PROGRAM:

```
#include <stdio.h>
#include<math.h>
int main()
{
   int principal=500000,time=10;
   float rate=3.5,n;
   float interest,compond_interest;
   interest=principal*rate*10/100;
   printf("Simple interest on Rs. 500000.00 in 10 years = Rs.
175000.00%.2f",interest);

   n=1;
   compond_interest=principal*pow(1+rate/100/n,n*time)-principal;
   printf("\nInterest on Rs. 500000.00 in 10 years compounded annually =
Rs%.2f",compond_interest);

   n=2;
   compond_interest=principal*pow(1+rate/100/n,n*time)-principal;
   printf("\nInterest on Rs. 500000.00 in 10 years compounded semi-
annually = Rs.%.2f",compond_interest);



   n=4;
   compond_interest=principal*pow(1+rate/100/n,n*time)-principal;
   printf("\nInterest on Rs. 500000.00 in 10 years compounded quarterly =
Rs. %.2f",compond_interest);



   n=12;
   compond_interest=principal*pow(1+rate/100/n,n*time)-principal;
   printf("\nInterest on Rs. 500000.00 in 10 years compounded monthly =
Rs. %.2f",compond_interest);

   n=365;
   compond_interest=principal*pow(1+rate/100/n,n*time)-principal;
   printf("\nInterest on Rs. 500000.00 in 10 years compounded daily = Rs.
%.2f",compond_interest);

   return 0;
}
```

RESULT:

```
Simple interest on Rs. 500000.00 in 10 years = Rs.175000.00
Interest on Rs. 500000.00 in 10 years compounded annually = Rs205299.16
Interest on Rs. 500000.00 in 10 years compounded semi-annually = Rs.207389.69
Interest on Rs. 500000.00 in 10 years compounded quarterly = Rs. 208453.34
Interest on Rs. 500000.00 in 10 years compounded monthly = Rs. 209174.70
Interest on Rs. 500000.00 in 10 years compounded daily = Rs. 209402.39
```

Program 2	
PROBLEM STATEMENT :	**Write a C program to input 2 numbers. Perform addition, subtraction, multiplication, division and modulus and display output.**
ALGORITHM:	1) Input num1, num2 2) Calculate Sum=num1+num2 3) Calculate Sub=num1-num2 4) Calculate Multi=num1*num2 5) Calculate division=num1/num2 6) Calculate modulus=num1%num2 7) Print sum, sub, multi, division, modulus 8) Stop
FLOWCHART:	
PROGRAM:	#include <stdio.h> int main() { float a,b; int sum,multi,sub;

```
    float division,modt;
    printf("Enter the First Number:");
    scanf("%f",&a);
    printf("Enter the Second Number:");
    scanf("%f",&b);
    int c=a,d=b;
    sum=a+b;
    sub=a-b;
    multi=a*b;
    division=a/b;
    modt=c%d;
    printf("Sum of %d and %d is %d  ",c,d,sum);
    printf("\nSubtraction of %d and %d is %d",c,d,sub);
    printf("\nMultiplication of %d and %d is %d",c,d,multi);
    printf("\nDivision of %d and %d is %.2f",c,d,division);
    printf(" \nModulus of %d and %d is %.2f",c,d,modt);
    return 0;
}
```

RESULT:

```
Enter the First Number:24
Enter the Second Number:54
Sum of 24 and 54 is 78
Subtraction of 24 and 54 is -30
Multiplication of 24 and 54 is 1296
Division of 24 and 54 is 0.44
Modulus of 24 and 54 is 24.00
```

Program 3

PROBLEM STATEMENT:

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

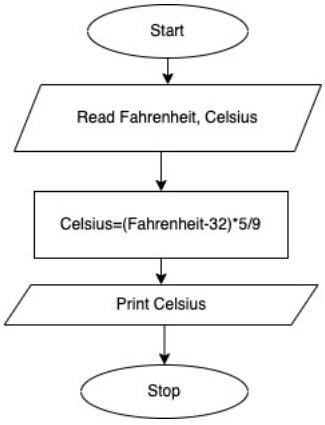
Test data and expected output:

Enter temp in Fahrenheit: 98.4

Temp 98.40 in Fahrenheit = 36.89 Centigrade

ALGORITHM:

1) Input Fahrenheit from the user
2) Then, Calculate Celsius=(Fahrenheit-32)*5/9
3) Print Celsius

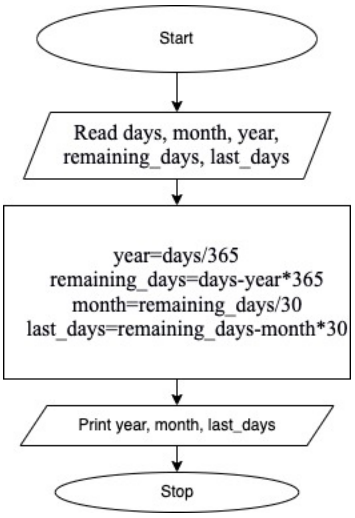
	4) Stop
FLOWCHART:	

PROGRAM:	#include <stdio.h>
	int main()
	{
	float Fahrenheit, Celsius;
	printf("Enter temp in Farenheit: ");
	scanf("%f",&Fahrenheit);
	Celsius=(Fahrenheit-32)*5/9;
	printf("Temp %.2f in Farenheit = %.2f Centigrade",Fahrenheit,Celsius);
	return 0;
	}

RESULT:
`Enter temp in Farenheit: 98.4`
`Temp 98.40 in Farenheit = 36.89 Centigrade`	

Program 4	
PROBLEM STATEMENT:	**Write a C program to convert days into year, month and days.**
ALGORITHM:	1) Input days from user 2) Calculate years =days/365 as an integer value 3) Calculate the remaining_days=days-years*365 4) Then, Calculate months= remaining_days/30 as an integer value 5) Then, Calculate Last_days= remaining_days-month*30 6) Print years, month, Last_days 7) Stop

FLOWCHART:



PROGRAM:

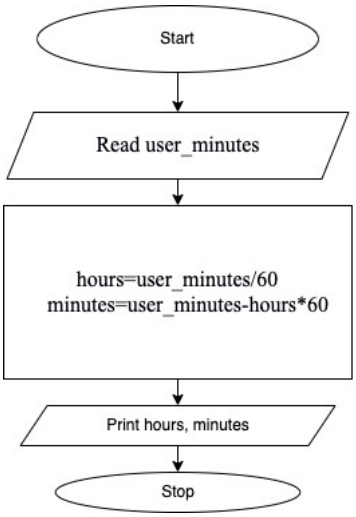
```
#include <stdio.h>
int main()
{
   int days, month, year, remaining_days, last_days;
   printf("Enter the days: ");
   scanf("%d",&days);
   year=days/365;
   remaining_days=days-year*365;
   month=remaining_days/30;
   last_days=remaining_days-month*30;
   printf("Number of Year is %d",year);
   printf("\nNumber of Month is %d",month);
   printf("\nNumber of Days is %d",last_days);
   return 0;
}
```

RESULT:

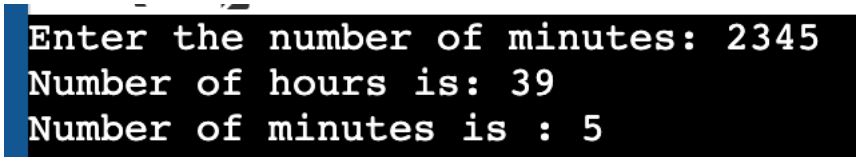
```
Enter the days: 36452
Number of Year is 99
Number of Month is 10
Number of Days is 17
```

Program 5

PROBLEM STATEMENT: Write a program in C that takes minutes as input and display the total number of hours and minutes.

ALGORITHM:	1) Input user_minutes from user 2) Then, Calculate hours=user_minutes/60 3) Then, Calculate minutes=user_minutes-hours*60 4) Print hours, minutes 5) Stop
FLOWCHART:	

PROGRAM:	#include <stdio.h>
	int main()
	{
	int user_minutes, hours, minutes;
	printf("Enter the number of minutes: ");
	scanf("%d",&user_minutes);
	hours=user_minutes/60;
	minutes=user_minutes-hours*60;
	printf("Number of hours is: %d",hours);
	printf("\nNumber of minutes is : %d",minutes);
	return 0;
	}

RESULT:	
CONCLUSION:	Understood formatted input/output statements, operators, and expressions in C language