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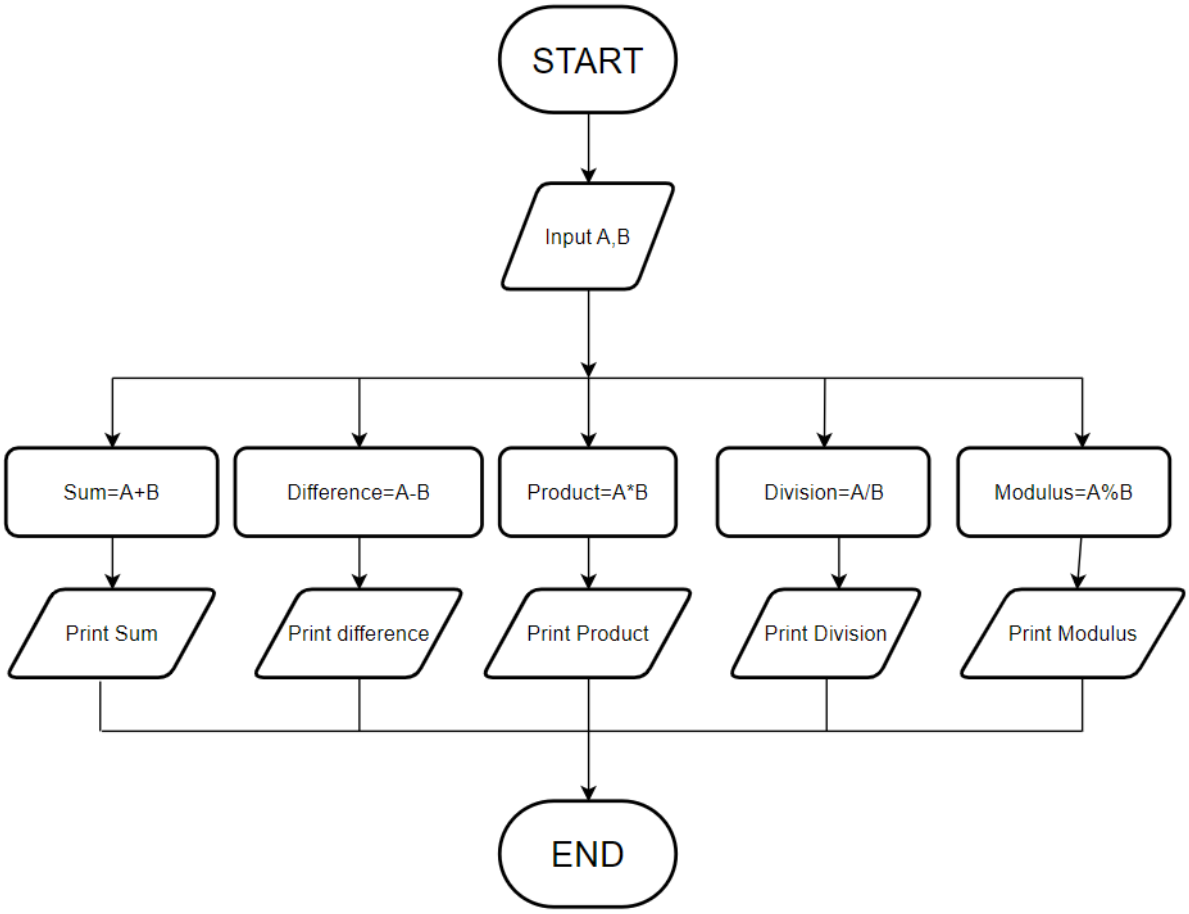
Experiment No.	1

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: START Step 2: Read two input values A and B Step 3: Sum = A+B Step 4: Difference = A-B Step 5: Product = A*B Step 6: Division = A/B Step 7: Modulus = A%B Step 8: Print Sum, Difference, Product, Division and Modulus. Step 9: END

FLOWCHART:



PROGRAM:

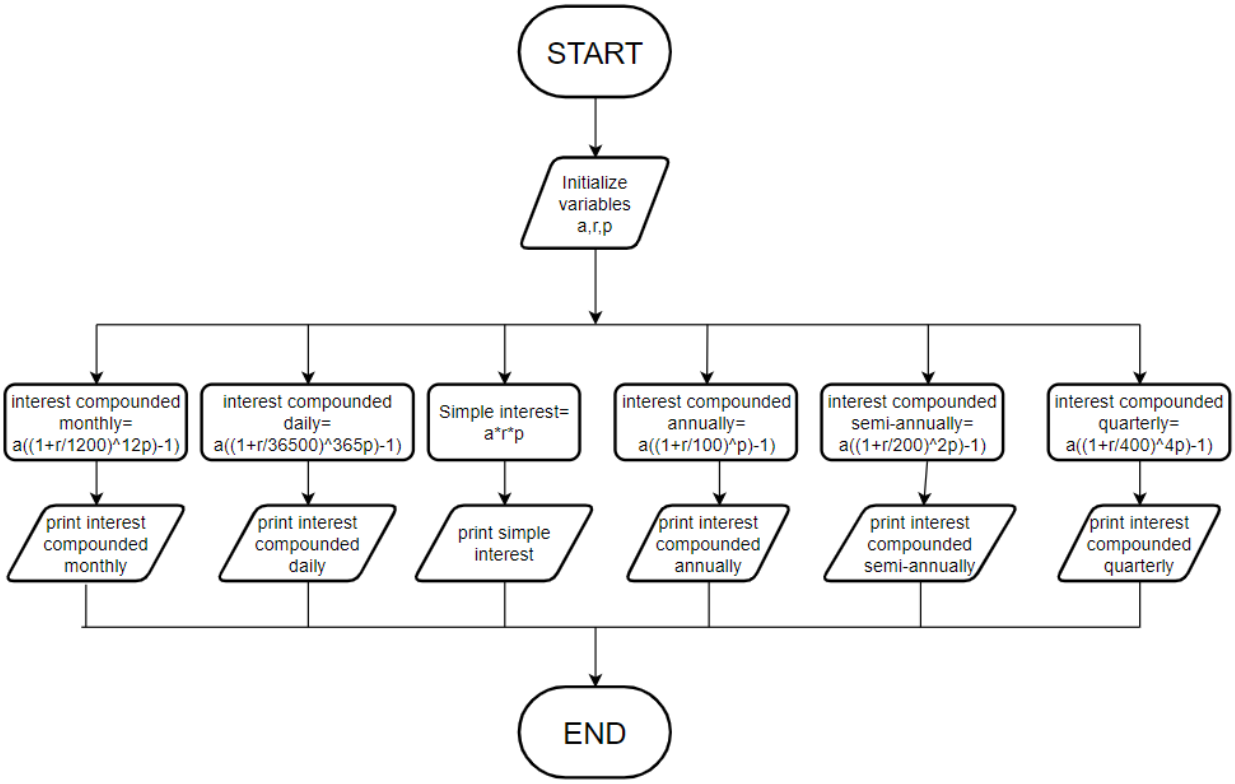
```c
#include<stdio.h>
int main(){
    int a,b,sum,difference,modulus,product;
    float division;
    printf("Enter two numbers\n");
    scanf("%d %d",&a,&b);
    sum=a+b;
    difference=a-b;
    product=a*b;
    division=(float)a/b;
    modulus=a%b;
    printf("the sum of the two numbers is: %d\n",sum);
    printf("the difference between the two numbers is: %d\n",difference);
    printf("the product of the two numbers is: %d\n",product);
    printf("the division of the two numbers is: %f\n",division);
    printf("the modulus of the two numbers is: %d\n",modulus);
    return 0;
}
```

RESULT:

```
Enter two numbers
7
6
the sum of the two numbers is: 13
the difference between the two numbers is: 1
the product of the two numbers is: 42
the division of the two numbers is: 1.166667
the modulus of the two numbers is: 1
```

Program 2	
PROBLEM STATEMENT :	Write a C program interest.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: START Step 2: Initialize variables with given values Step 3: Simple interest = a*r*p Step 4: Compounded interest with annual compounding = a((1+r/100)^p)-1) Step 5: Compounded interest with semi-annual compounding = a((1+r/200)^2p)-1) Step 6: Compounded interest with quarterly compounding = a((1+r/400)^4p)-1) Step 7: Compounded interest with monthly compounding = a((1+r/1200)^12p)-1) Step 8: Compounded interest with daily compounding = a((1+r/36500)^365p)-1) Step 9: Print values of all the types of interests calculated Step 10: END

FLOWCHART:



PROGRAM:

```c
#include<stdio.h>
#include<math.h>
int main(){
    double a=500000, r=0.035, p=10;
    double cia,cisa,ciq,cim,cid;
    cia=(a*pow(1+r,1.0*p ))-a;//.0 is for type-casting to double
    cisa=(a*pow(1+r/2.0 ,2.0*p))-a;
    ciq=(a*pow(1+r/4.0, 4.0*p))-a;
    cim=(a*pow(1+r/12.0, 12.0*p))-a;
    cid=(a*pow(1+r/365.0, 365.0*p))-a;
    printf("\nSimple interest on Rs.500000 in 10 years is %.2lf\n\n", a*r*p);
    printf("Interest on Rs.500000 in 10 years compounded annually is %.2lf\n\n",
cia);
    printf("Interest on Rs.500000 in 10 years compounded semi-annually is
%.2lf\n\n", cisa);
    printf("Interest on Rs.500000 in 10 years compounded quarterly is %.2lf\n\n",
ciq);
    printf("Interest on Rs.500000 in 10 years compounded monthly is %.2lf\n\n",
cim);
    printf("Interest on Rs.500000 in 10 years compounded daily is %.2lf\n\n",
cid);
```

```
    return 0;
}
```

RESULT:

```
Interest on Rs.500000 in 10 years compounded annually is 205299.38

Interest on Rs.500000 in 10 years compounded semi-annually is 207389.10

Interest on Rs.500000 in 10 years compounded quarterly is 208454.42

Interest on Rs.500000 in 10 years compounded monthly is 209172.41

Interest on Rs.500000 in 10 years compounded daily is 209521.87
```

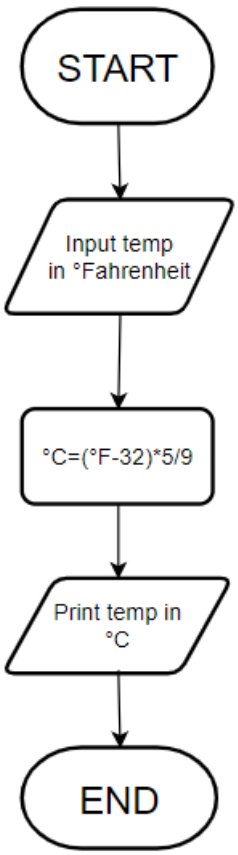
Program 3

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

ALGORITHM:

Step 1: START
Step 2: Read input value of temperature in degrees Fahrenheit
Step 3: °C = (°F-32)*5/9
Step 4: Print value of temperature in °C
Step 5: END

FLOWCHART:



PROGRAM:

```c
#include<stdio.h>
int main()
{
float c,f;
printf("Enter temperature in degrees Fahrenheit:  ");
scanf("%f",&f);
c = (f-32)*5/9.0;//.0 for type casting
printf("\n Temp %.2f in Fahrenheit = %.2f Centigrade\n",f,c);
return 0;
}
```

RESULT:

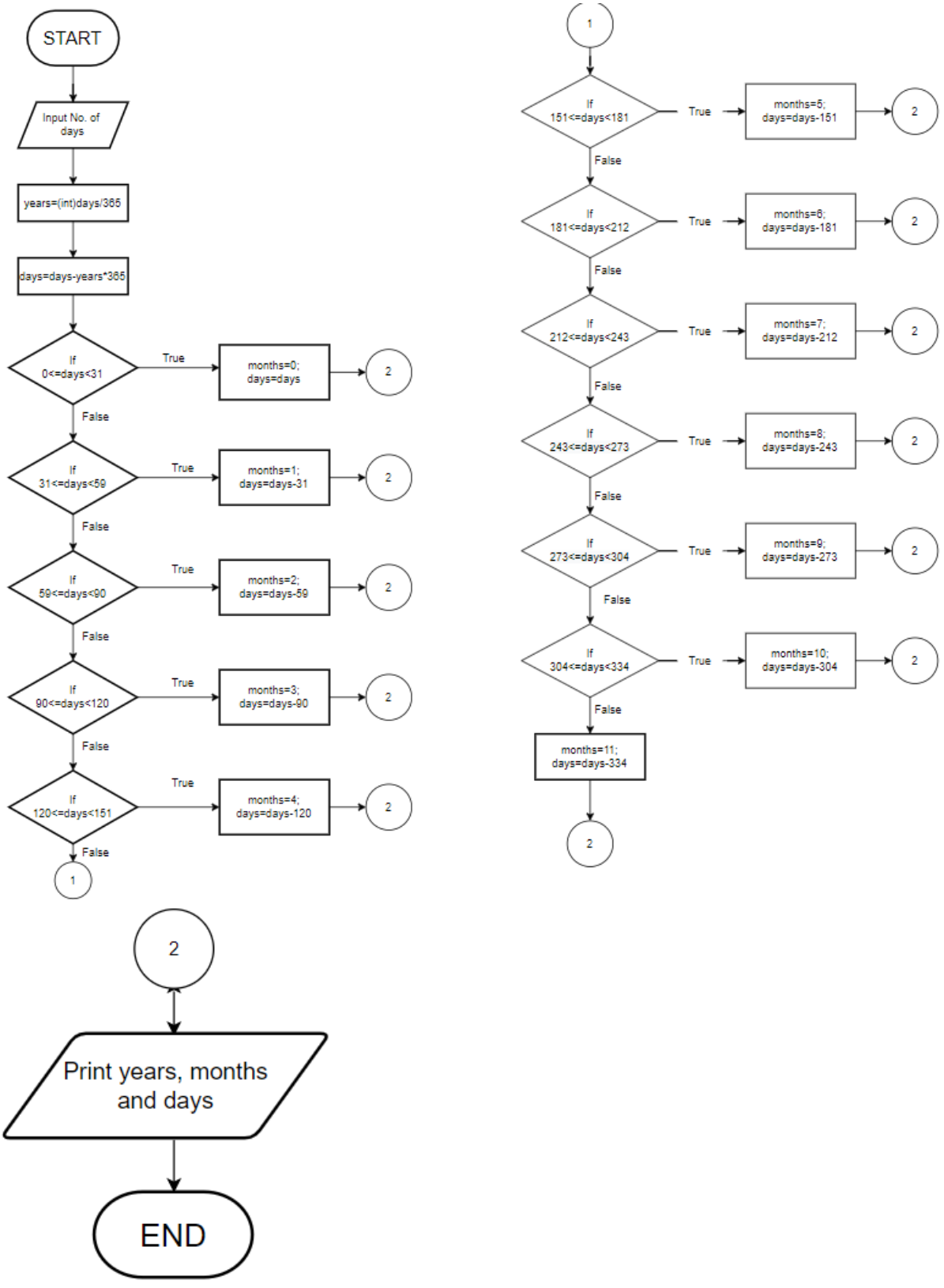
```
Enter temperature in degrees Fahrenheit:  98.4

 Temp 98.40 in Fahrenheit = 36.89 Centigrade
```

Program 4

PROBLEM STATEMENT:	Write a C program to convert days into year, month and days.
ALGORITHM:	Step 1: Read no. of days from input Step 2: years = days/365 (quotient, not real value) Step 3: days=days-years*365 Step 4: if 0<=days<31, months=0, days=days Step 5: else if 31<=days<59, months=1, days=days-31 Step 6: else if 59<=days<90, months=2, days=days-59 Step 7: else if 90<=days<120, months=3, days=days-90 Step 8: else if 120<=days<151, months=4, days=days-120 Step 9: else if 151<=days<181, months=5, days=days-151 Step 10: else if 181<=days<212, months=6, days=days-181 Step 11: else if 212<=days<243, months=7, days=days-212 Step 12: else if 243<=days<273, months=8, days=days-243 Step 13: else if 273<=days<304, months=9, days=days-273 Step 14: else if 304<=days<334, months=10, days=days-304 Step 15: else months=11, days=days-334 Step 16: Print numbers of years, months and days Step 17: END

FLOWCHART:



PROGRAM:

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

```c
int main(){
int days,months,years,daysfordisplay;
printf("enter number of days\n");
scanf("%d",&days);
daysfordisplay=days;

if(days<0){
printf("invalid input");
return 0;
}

years=days/365;
days=days-(years*365);
    if(days>=0 && days<31){months=0;}
    else if(days>=31 && days<(31+28)){months=1;days-31;}
    else if(days>=(31+28) && days<(31+28+31)){months=2;days=days-31-28;}
    else if(days>=(31+28+31) && days<(31+28+31+30)){months=3;days=days-31-28-31;}
    else if(days>=(31+28+31+30) && days<(31+28+31+30+31)){months=4;days=days-31-
28-31-30;}
    else if(days>=(31+28+31+30+31) &&
days<(31+28+31+30+31+30)){months=5;days=days-31-28-31-30-31;}
    else if(days>=(31+28+31+30+31+30) &&
days<(31+28+31+30+31+30+31)){months=6;days=days-31-28-31-30-31-30;}
    else if(days>=(31+28+31+30+31+30+31) &&
days<(31+28+31+30+31+30+31+31)){months=7;days=days-31-28-31-30-31-30-31;}
    else if(days>=(31+28+31+30+31+30+31+31) &&
days<(31+28+31+30+31+30+31+31+30)){months=8;days=days-31-28-31-30-31-30-31-31;}
    else if(days>=(31+28+31+30+31+30+31+31+30) &&
days<(31+28+31+30+31+30+31+31+30+31)){months=9;days=days-31-28-31-30-31-30-31-31-
30;}
    else if(days>=(31+28+31+30+31+30+31+31+30+31) &&
days<(31+28+31+30+31+30+31+31+30+31+30)){months=10;days=days-31-28-31-30-31-30-31-
31-30-31;}
    else{months=11;days=days-31-28-31-30-31-30-31-31-30-31-30;}

printf("\n%d days are equal to %d years, %d months and %d days",
daysfordisplay,years,months,days);
return 0;
}
```

Screenshot(for readability):

```c
#include<stdio.h>
int main(){
int days,months,years,daysfordisplay;
printf("enter number of days\n");
scanf("%d",&days);
daysfordisplay=days;

if(days<0){
printf("invalid input");
return 0;
}

years=days/365;
days=days-(years*365);
    if(days>=0 && days<31){months=0;}
    else if(days>=31 && days<(31+28)){months=1;days-31;}
    else if(days>=(31+28) && days<(31+28+31)){months=2;days=days-31-28;}
    else if(days>=(31+28+31) && days<(31+28+31+30)){months=3;days=days-31-28-31;}
    else if(days>=(31+28+31+30) && days<(31+28+31+30+31)){months=4;days=days-31-28-31-30;}
    else if(days>=(31+28+31+30+31) && days<(31+28+31+30+31+30)){months=5;days=days-31-28-31-30-31;}
    else if(days>=(31+28+31+30+31+30) && days<(31+28+31+30+31+30+31)){months=6;days=days-31-28-31-30-31-30;}
    else if(days>=(31+28+31+30+31+30+31) && days<(31+28+31+30+31+30+31+31)){months=7;days=days-31-28-31-30-31-30-31;}
    else if(days>=(31+28+31+30+31+30+31+31) && days<(31+28+31+30+31+30+31+31+30)){months=8;days=days-31-28-31-30-31-30-31-31;}
    else if(days>=(31+28+31+30+31+30+31+31+30) && days<(31+28+31+30+31+30+31+31+30+31)){months=9;days=days-31-28-31-30-31-30-31-31-30;}
    else if(days>=(31+28+31+30+31+30+31+31+30+31) && days<(31+28+31+30+31+30+31+31+30+31+30)){months=10;days=days-31-28-31-30-31-30-31-31-30-31;}
    else{months=11;days=days-31-28-31-30-31-30-31-31-30-31-30;}

printf("\n%d days are equal to %d years, %d months and %d days", daysfordisplay,years,months,days);
return 0;
}
```

RESULT:

```
enter number of days
455

455 days are equal to 1 years, 3 months and 0 days
```

```
enter number of days
567

567 days are equal to 1 years, 6 months and 21 days
```