Introduction to Computers and Programming in C

Computer Science and Engineering

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1.(a) To Add two numbers.

```
#include <stdio.h>

int main()

{

 int x, y, sum;

    printf("Enter two numbers: ");

    scanf("%d%d",&x,&y);

    sum=x+y;

    printf("Sum of the numbers is: %d", sum);

    return 0;

}
```

```
Enter two numbers: 89
876
Sum of the numbers is: 965

...Program finished with exit code 0
Press ENTER to exit console.
```

1.(b) To add three numbers.

```
#include <stdio.h>

int main()

{

    int x, y, z, sum;

    printf("Enter three numbers: ");

    scanf("%d%d%d",&x,&y,&z);

    sum=x+y+z;

    printf("Sum of the numbers is: %d", sum);

    return 0;

}
```

```
Enter three numbers: 786
876
971
Sum of the numbers is: 2633

...Program finished with exit code 0
Press ENTER to exit console.
```

2.(a) To find area of circle.

```
#include <stdio.h>

int main()

{

    int r, area;

    printf("Enter the radius: ");

    scanf("%d",&r);

    area=3.14*r*r;

    printf("Area of circle is: %d", area);

    return 0;

}
```

```
Enter the radius: 25
Area of circle is: 1962

...Program finished with exit code 0
Press ENTER to exit console.
```

2.(b) To calculate simple interest.

```
#include <stdio.h>

int main()

{

   int P, R, T, SI;

   printf("Enter the values of P, R, T: ");

   scanf("%d%d%d",&P,&R,&T);

   SI=(P*R*T)/100;

   printf("Te simple interest is: %d", SI);

   return 0;

}
```

```
Enter the values of P, R, T: 10000
10
2
Te simple interest is: 2000

...Program finished with exit code 0
```

3. To print a block F using hash(#).

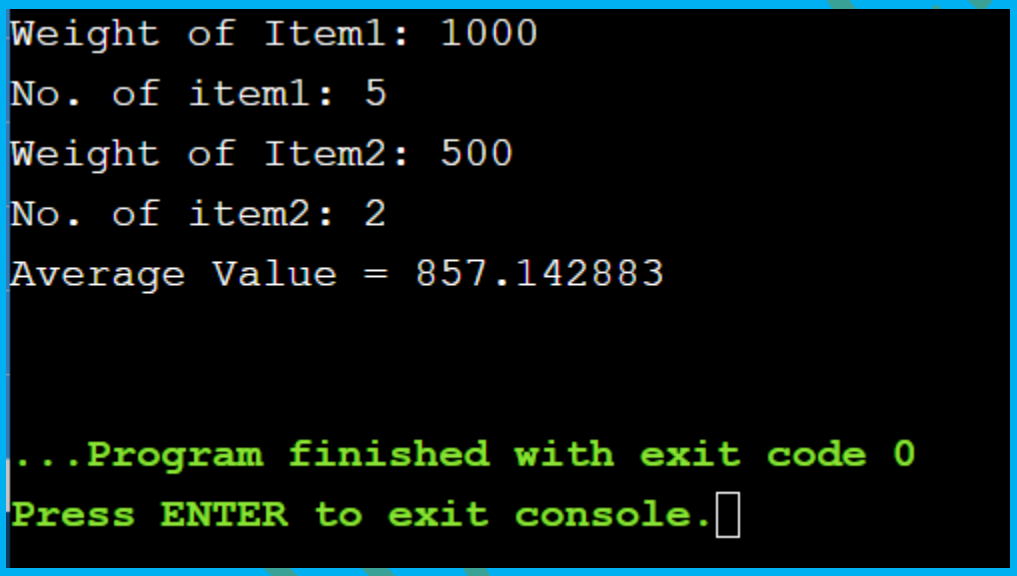
```
#include <stdio.h>

int main()

{

   printf("#####\n");

   printf("#\n");

   printf("####\n");

   printf("#\n");

   printf("#\n");

   printf("#\n");

   return 0;

}
```

```
Enter the values of P, R, T: 10000
10
2
Te simple interest is: 2000

...Program finished with exit code 0
```

4. Program that accepts 2 item's weight & number of purchase & calculate average value of the items.

```
#include <stdio.h>

int main()

{

   float w1, n1, w2, n2, result;

   printf("Weight of Item1: ");

      scanf("%f", &w1);

      printf("No. of item1: ");

      scanf("%f", &n1);

      printf("Weight of Item2: ");

      scanf("%f", &w2);

      printf("No. of item2: ");

      scanf("%f", &n2);

      result = ((w1 * n1) + (w2 * n2)) / (n1 + n2);
```

```
    printf("Average Value = %f\n", result);

    return 0;

}
```



5.(a) To swap 2 variables using 3rd variable.

```
#include <stdio.h>

int main()

{

    double first, second, temp;

     printf("Enter first number: ");

     scanf("%lf", &first);

     printf("Enter second number: ");

     scanf("%lf", &second);

     temp = first;

     first = second;

     second = temp;

     printf("\nAfter swapping, firstNumber = %.2lf\n",
first);

     printf("After swapping, secondNumber = %.2lf",
second);
```

```
    return 0;

}
```

```
Enter first number: 1223
Enter second number: 2334

After swapping, firstNumber = 2334.00
After swapping, secondNumber = 1223.00

...Program finished with exit code 0
Press ENTER to exit console.
```


5(b). To swap 2 variables without using 3rd variable.

```
#include <stdio.h>
int main()
{
    int x, y;
    printf("Enter the numbers: \n");
    scanf("%d%d",&x,&y);
    x=x+y;
    y=x-y;
    x=x-y;
    printf("\nAfter swapping the values
will be: %d %d",x,y);
    return 0;
}
```

```
Enter the numbers:
464
666

After swapping the values will be: 666
 464

...Program finished with exit code 0
Press ENTER to exit console.
```

6(a). To convert a given integer (in seconds) to hours, minutes, seconds.

```
#include <stdio.h>

int main()

{

    int sec, h, m, s;

      printf("Input seconds: ");

      scanf("%d", &sec);

      h = (sec/3600);

      m = (sec/60);

      s = (sec);

      printf("H:M:S - %d:%d:%d\n",h,m,s);

    return 0;

}
```

```
Input seconds: 3600
H:M:S - 1:60:3600


...Program finished with exit code 0
Press ENTER to exit console.
```

6(b). To convert specified days into years, weeks and days. No. of days: 1095.

```
#include <stdio.h>

int main()

{

    int days, years, weeks;

    days = 1095;

    years = (days/365);

    weeks = (days/7);

    days = (days);

    printf("Years: %d\n", years);

    printf("Weeks: %d\n", weeks);

    printf("Days: %d \n", days);

    return 0;

}
```

```
Years: 3
Weeks: 156
Days: 1095


...Program finished with exit code 0
```


6(c). To check whether a number is even or odd.

```c
#include <stdio.h>

int main()
{
    int num;
    printf("Enter any number: ");
    scanf("%d", &num);
    if(num % 2 == 0)
    {
       printf("Number is Even.");
    }
    else
    {
      printf("Number is Odd.");
    }
    return 0;
}
```

```
Enter any number: 5256
Number is Even.

...Program finished with exit code 0
Press ENTER to exit console.
```


7. To check whether a given year is leap year or not.

```
#include <stdio.h>

int main()
```

```
{
    int year;
    printf("Enter year : ");
    scanf("%d", &year);
    if(((year % 4 == 0) && (year % 100 !=0)) || (year %
400==0))
    {
        printf("LEAP YEAR");
    }
    else
    {
        printf("COMMON YEAR");
    }
    return 0;
}
```

```
Enter year : 2021
COMMON YEAR

...Program finished with exit code 0
Press ENTER to exit console.
```


8(a). To check whether a triangle is equilateral, scalene or isosceles.

```
#include <stdio.h>

int main()
```

```
{
    int side1, side2, side3;
    printf("Enter three sides of triangle: ");
    scanf("%d%d%d", &side1, &side2, &side3);
    if(side1==side2 && side2==side3)
    {
       printf("Equilateral triangle.");
    }
    else if(side1==side2 || side1==side3 || side2==side3)
    {
       printf("Isosceles triangle.");
    }
    else
    {
       printf("Scalene triangle.");
    }
```

```
    return 0;
}
```

```
Enter three sides of triangle: 56
60
68
Scalene triangle.

...Program finished with exit code 0
Press ENTER to exit console.
```


8(b). To check whether a triangle is right triangle, obtuse, acute angles.

```
#include <stdio.h>

int main()

{
```

```
int x,y,z;
printf("Type in the integer lengths of 3 sides of a triangle:\n");
scanf("%d %d %d", &x, &y, &z);
if((x<=0) || (y<=0) || (z<=0)) {
printf("This is not a triangle.\n");
} else {
if((x + y <= z) || (x + z <= y) || (y + z <= x)) {
printf("This is not a triangle.\n");
} else
{
if( ((x * x) + (y * y) == (z * z)) || ((x * x) + (z * z) == (y * y)) || ((z * z) + (y * y) == (x * x)) ) {
printf("This is a right-angled triangle.\n");
} else if( ( ((x * x) + (y * y) < (z * z)) || ((x * x) + (z * z) < (y * y)) || ((z * z) + (y * y) < (x * x)) ) || ( ( x<=z && y<=z ) || ( x<=y && z<=y ) || ( y<=x && z<=x ) ) ) {
```

```
            printf("This is an acute-angled triangle.\n");
        } else if( ( ((x * x) + (y * y) > (z * z)) || ((x * x) +
(z * z) > (y * y)) || ((z * z) + (y * y) > (x * x)) ) || ( ( x>z
&& y>z ) || ( x>y && z>y ) || ( y>x && z>x ) ) ) {
            printf("This is an obtuse-angled triangle.\n");
        } else {
            printf("Not a triangle\n");
        }
    }
  }
    return 0;
}
```

```
Type in the integer lengths of 3 sides of a triangle:
56
60
69
This is an acute-angled triangle.


...Program finished with exit code 0
Press ENTER to exit console.
```

9. To convert temp. from Fahrenheit to Celsius and Celsius to Fahrenheit.

```
#include <stdio.h>

int main()

{

    float celsius, fahrenheit;

    printf("Enter temperature in Fahrenheit: ");

    scanf("%f", &fahrenheit);

    celsius = (fahrenheit - 32) * 5 / 9;

    printf("%.2f Fahrenheit = %.2f Celsius", fahrenheit,
celsius);

    printf("\nEnter temperature in Celsius: ");

    scanf("%f", &celsius);

    fahrenheit = (celsius * 9 / 5) + 32;

    printf("%.2f Celsius = %.2f Fahrenheit", celsius,
fahrenheit);
```

```
    return 0;

}
```

```
Enter temperature in Fahrenheit: 186.8
186.80 Fahrenheit = 86.00 Celsius
Enter temperature in Celsius: 56
56.00 Celsius = 132.80 Fahrenheit

...Program finished with exit code 0
Press ENTER to exit console.
```

10(a). To check whether a character is an alphabet, digit or special character.

```
#include <stdio.h>

int main()

{

   char ch;

   printf("Enter any character: ");

   scanf("%c", &ch);

   if((ch >= 'a' && ch <= 'z') || (ch >= 'A' && ch <=
'Z'))

   {

      printf("'%c' is alphabet.", ch);

   }

   else if(ch >= '0' && ch <= '9')

   {

      printf("'%c' is digit.", ch);
```

```
    }
    else
    {
        printf("'%c' is special character.", ch);
    }
    return 0;
}
```

```
Enter any character: )
')' is special character.

...Program finished with exit code
Press ENTER to exit console.
```

10(b). To check whether an alphabet is vowel or consonant.

```
#include <stdio.h>

int main()

{

   char ch;

   printf("Enter any character: ");

   scanf("%c", &ch);

   if(ch=='a' || ch=='e' || ch=='i' || ch=='o' || ch=='u'
||

      ch=='A' || ch=='E' || ch=='I' || ch=='O' ||
ch=='U')

   {

      printf("'%c' is Vowel.", ch);

   }
```

```
    else if((ch >= 'a' && ch <= 'z') || (ch >= 'A' && ch
<= 'Z'))
    {
        printf("'%c' is Consonant.", ch);
    }
    else
    {
        printf("'%c' is not an alphabet.", ch);
    }
    return 0;
}
```

```
Enter any character: s
's' is Consonant.

...Program finished with exit code 0
Press ENTER to exit console.
```

11(a). To find smallest of 2 numbers.

```
#include <stdio.h>

int main()

{

    int a, b, small;

    printf("Enter any two number: ");

    scanf("%d%d", &a, &b);

    if(a<b)

        small=a;

    else

        small=b;

    printf("\nSmallest of the two number is: %d", small);

    return 0;

}
```

```
Enter any two number: 52
96

Smallest of the two number is: 52

...Program finished with exit code 0
Press ENTER to exit console.
```

11(b). To find largest of 3 numbers.

```
#include <stdio.h>

int main()

{

    int A, B, C;

   printf("Enter the numbers A, B and C: ");

   scanf("%d %d %d", &A, &B, &C);

   if (A >= B && A >= C)

      printf("%d is the largest number.", A);

   if (B >= A && B >= C)

      printf("%d is the largest number.", B);

   if (C >= A && C >= B)

      printf("%d is the largest number.", C);

   return 0;

}
```

```
95
25
95 is the largest number.

...Program finished with exit code 0
Press ENTER to exit console.
```

12. To implement simple calculator.

```
#include <stdio.h>

int main()

{

    char Operator;

      float num1, num2, result = 0;

      printf("Please Enter an Operator (+, -, *, /) :  ");

      scanf("%c", &Operator);

      printf("\nPlease Enter the Values for two
Operands: num1 and num2  :  ");

      scanf("%f%f", &num1, &num2);

      switch(Operator)

      {

            case '+':

                  result = num1 + num2;
```

```
            break;
        case '-':
            result = num1 - num2;
            break;
        case '*':
            result = num1 * num2;
            break;
        case '/':
            result = num1 / num2;
            break;
        default:
            printf("\nYou have enetered an Invalid
Operator ");
    }
    printf("\nThe result of %.2f %c %.2f = %.2f", num1,
Operator, num2, result);
    return 0;
```

```
}
```

```
Please Enter an Operator (+, -, *, /)  :  /

Please Enter the Values for two Operands: num1 and num2  :  56
4

The result of 56.00 / 4.00  = 14.00

...Program finished with exit code 0
Press ENTER to exit console.
```


13. To calculate the root of a quadratic equation.

```
#include <stdio.h>
#include <math.h>
int main()
{
    float a, b, c, discriminant, root1, root2;
    printf("Enter coefficient of x^2: ");
    scanf("%f", &a);
    printf("Enter coefficient of x: ");
    scanf("%f", &b);
    printf("Enter constant term: ");
    scanf("%f", &c);
    discriminant = sqrt( b*b - 4*a*c );
    if(discriminant >= 0)
    {
        root1 = ( -b + discriminant ) / (2.0*a);
        root2 = ( -b - discriminant ) / (2.0*a);
```

```
        printf("\nFirst root: %.2f\n", root1);
        printf("Second root: %.2f\n", root2);
    }
    else
    {
        printf("\nRoots are imaginary");
    }
    return 0;
}
```

```
Enter coefficient of x^2: 5
Enter coefficient of x: 20
Enter constant term: 9

First root: -0.52
Second root: -3.48


...Program finished with exit code 0
Press ENTER to exit console.
```

14. To accept a coordinate point in a XY coordinate

system and determine in which quadrant the point lies.

```
#include <stdio.h>

int main()

{

    int co1,co2;

      printf("Input the values for X and Y coordinate : ");

      scanf("%d %d",&co1,&co2);

      if( co1 > 0 && co2 > 0)

        printf("The coordinate point (%d,%d) lies in the
First quandrant.\n",co1,co2);

      else if( co1 < 0 && co2 > 0)

        printf("The coordinate point (%d,%d) lies in the
Second quandrant.\n",co1,co2);

      else if( co1 < 0 && co2 < 0)

        printf("The coordinate point (%d, %d) lies in the
Third quandrant.\n",co1,co2);
```

```
    else if( co1 > 0 && co2 < 0)
      printf("The coordinate point (%d,%d) lies in the
Fourth quandrant.\n",co1,co2);
    else if( co1 == 0 && co2 == 0)
      printf("The coordinate point (%d,%d) lies at the
origin.\n",co1,co2);
   return 0;
}
```

```
Input the values for X and Y coordinate : 5
6
The coordinate point (5,6) lies in the First quandrant.


...Program finished with exit code 0
Press ENTER to exit console.
```

15. To find gross salary of an employee if DA is 40% of

basic salary and HRA is 20% of basic salary.

```
#include <stdio.h>

int main()

{

    float bs, hra, da, gs;

    printf("Enter basic salary\n");

    scanf("%f", &bs);

    hra = bs * (20/100.00);

    da  = bs * (40/100.00);

    gs  = bs + hra + da;

    printf("Gross Salary = %f\n", gs);

    return 0;

}
```

```
Enter basic salary
1200000
Gross Salary = 1920000.000000


...Program finished with exit code 0
Press ENTER to exit console.
```

16. To calculate and print the electricity bill of a given costumer.

```
#include <stdio.h>
int main()
{
   int custid, conu;
  float chg, surchg=0, gramt,netamt;
  char connm[25];
  printf("input customer id :");
  scanf("%d",&custid);
  printf("input the name of the customer :");
  scanf("%s",connm);
  printf("input the unit consumed by the customer : ");
  scanf("%d",&conu);
```

```
IF (CONU <200 )
   CHG = 1.20;
ELSE IF (CONU>=200 && CONU<400)
        CHG = 1.50;
   ELSE IF (CONU>=400 && CONU<600)
            CHG = 1.80;
        ELSE
            CHG = 2.00;
GRAMT = CONU*CHG;
IF (GRAMT>300)
   SURCHG = GRAMT*15/100.0;
NETAMT = GRAMT+SURCHG;
IF (NETAMT  < 100)
   NETAMT =100;
PRINTF("\NELECTRICITY BILL\N");
```

```
  PRINTF("CUSTOMER IDNO
:%D\N",CUSTID);

  PRINTF("CUSTOMER NAME
:%S\N",CONNM);

  PRINTF("UNIT CONSUMED
:%D\N",CONU);

  PRINTF("AMOUNT CHARGES @RS. %4.2F  PER
UNIT :%8.2F\N",CHG,GRAMT);

  PRINTF("SURCHAGE AMOUNT
:%8.2F\N",SURCHG);

  PRINTF("NET AMOUNT PAID BY THE CUSTOMER
:%8.2F\N",NETAMT);

   RETURN 0;
}
```

```
Input Customer ID :14609410
Input the name of the customer :sam jain
Input the unit consumed by the customer :
Electricity Bill
Customer IDNO                              :14609410
Customer Name                              :sam
unit Consumed                              :0
Amount Charges @Rs. 1.20  per unit :     0.00
Surchage Amount                            :     0.00
Net Amount Paid By the Customer      :   200.00


...Program finished with exit code 0
Press ENTER to exit console.
```

17. To accept the number of days the member is late to return the book .

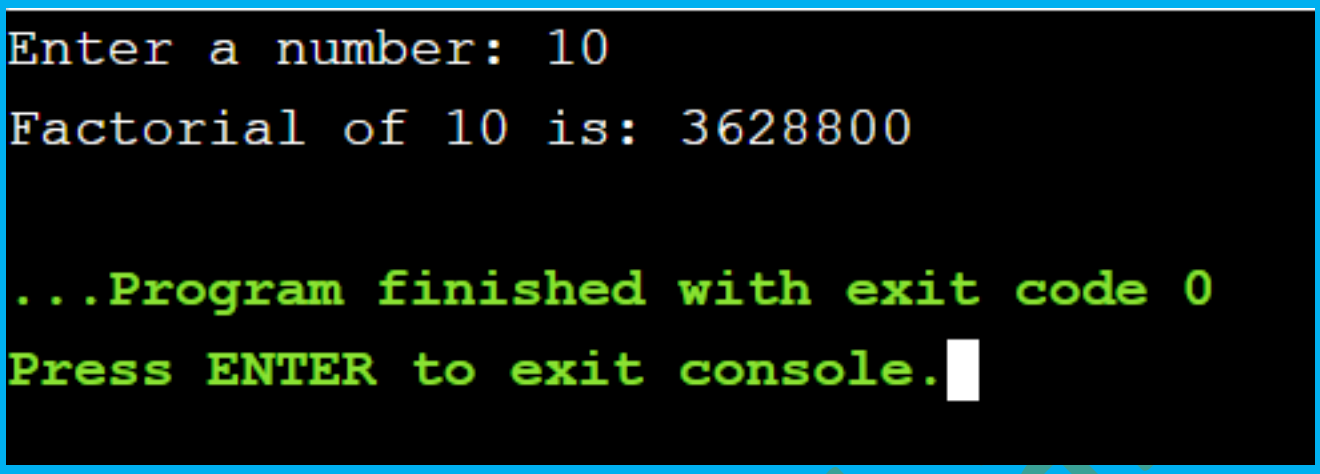
```
#include <stdio.h>

int main()

{

    int days;

    float fine;

    printf(" Enter the number of days: ");

    scanf("%d", &days);

    if (days > 0 && days <= 5)

        fine = 0.50 * days;

    if (days >= 6 && days <= 10)

        fine = 1 * days;

    if (days > 10)

        fine = 5 * days;
```

```
    if (days > 30)
    {
        printf("Your membership would be canceled. \n");
    }
  printf("You have to pay Rs. %.2f fine.", fine);
  return 0;
}
```

```
Enter the number of days: 45
Your membership would be canceled if not paid.
You have to pay within 30 days
You have to pay Rs. 225.00 fine within 30 days.

...Program finished with exit code 0
Press ENTER to exit console.
```

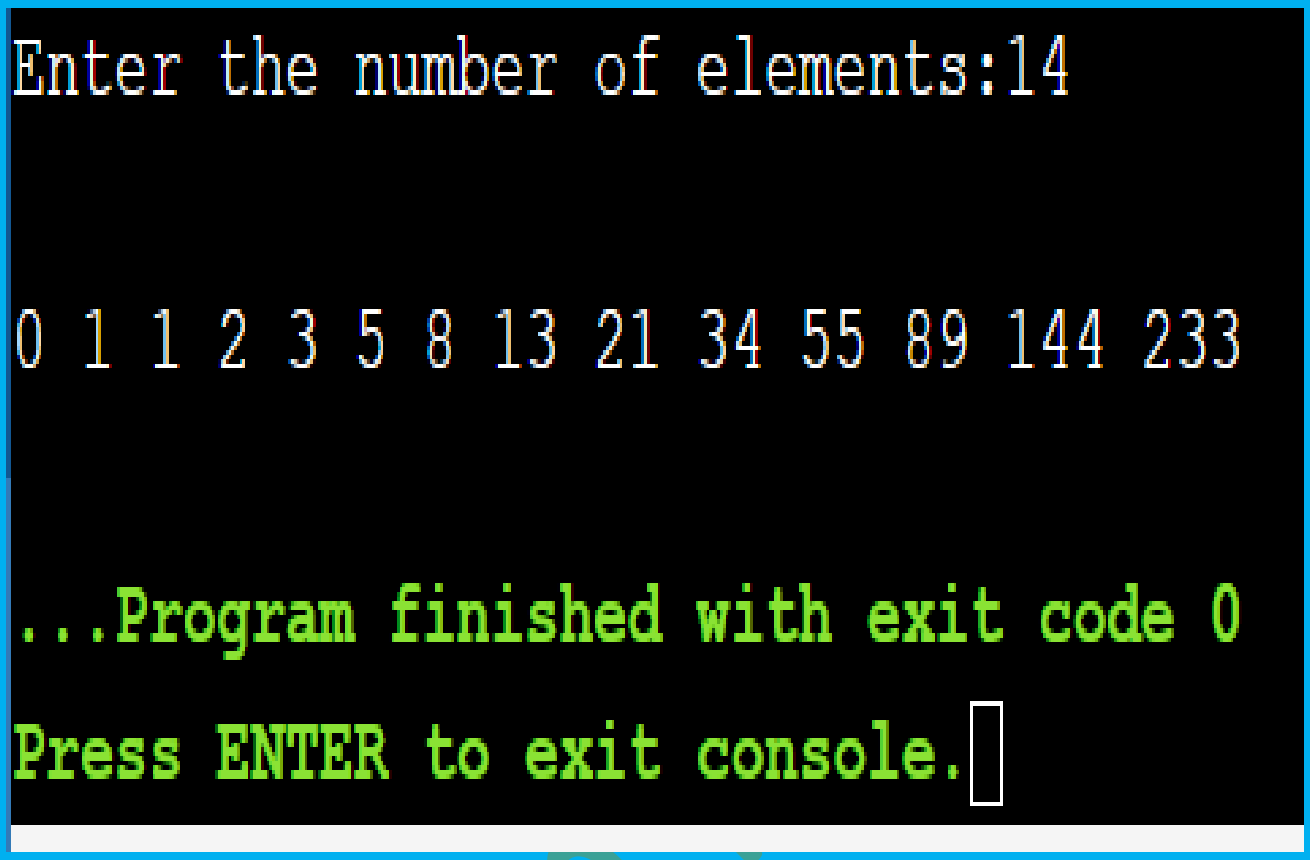
18. To find the factorial of any number.

```
#include <stdio.h>

int main()

{

    int i,fact=1,a;

    printf("Enter a number: ");

    scanf("%d",&a);

    for(i=1;i<=a;i++)

    {

        fact=fact*i;

    }

     printf("Factorial of %d is: %d",a,fact);

    return 0;

}
```



19. To print Fibonacci sequence.

```
#include<stdio.h>
int main()
{
 int n1=0,n2=1,n3,i,number;
printf("Enter the number of elements:");
 scanf("%d",&number);
 printf("\n%d %d",n1,n2);
 for(i=2;i<number;++i)
 {
 n3=n1+n2;
printf(" %d",n3);
n1=n2;
n2=n3;
}
return 0;
}
```


Enter the number of elements:14
0 1 1 2 3 5 8 13 21 34 55 89 144 233
...Program finished with exit code 0
Press ENTER to exit console.

20. To accept an integer and find sum of digits.

```
#include <stdio.h>

int main()

{

  int n, t, sum = 0, remainder;

  printf("Enter an integer\n");

  scanf("%d", &n);

  t = n;

  while (t != 0)

  {

    remainder = t % 10;

    sum       = sum + remainder;

    t         = t / 10;

  }

  printf("Sum of digits of %d = %d\n", n, sum);
```

```
    return 0;
}
```

```
Enter an integer
17102002
Sum of digits of 17102002 = 13


...Program finished with exit code 0
Press ENTER to exit console.
```


21. To accept an integer and find reverse of this number

and check this number for palindrome.

```
#include <stdio.h>

int main()

{

    int n, reversedN = 0, remainder, originalN;

    printf("Enter an integer: ");

    scanf("%d", &n);

    originalN = n;

    while (n != 0) {

        remainder = n % 10;

        reversedN = reversedN * 10 + remainder;

        n /= 10;

    }

    if (originalN == reversedN)

        printf("%d is a palindrome.", originalN);
```

```
    else
        printf("%d is not a palindrome.", originalN);
    return 0;
}
```

```
Enter an integer: 17102002
17102002 is not a palindrome.

...Program finished with exit code 0
Press ENTER to exit console.
```


22. To check a number is amstrong or not.

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

```
int main()
{
    int num, originalNum, remainder, result = 0;
    printf("Enter a three-digit integer: ");
    scanf("%d", &num);
    originalNum = num;
    while (originalNum != 0)
    {
        remainder = originalNum % 10;
        result += remainder * remainder * remainder;
        originalNum /= 10;
    }
    if (result == num)
        printf("%d is an Armstrong number.", num);
    else
        printf("%d is not an Armstrong number.", num);
```

```
    return 0;
}
```

```
Enter a three-digit integer: 565
565 is not an Armstrong number.

...Program finished with exit code 0
Press ENTER to exit console.
```


23. To check a number is perfect or not.

```
#include <stdio.h>

int main()

{
```

```
 int i, num, sum = 0;
printf("Enter any number to check perfect number: ");
scanf("%d", &num);
for(i = 1; i <= num / 2; i++)
{
    if(num%i == 0)
    {
        sum += i;
    }
}
if(sum == num)
{
  printf("%d is PERFECT NUMBER", num);
}
else
{
```

```
        printf("%d is NOT PERFECT NUMBER", num);
    }

    return 0;
}
```

```
Enter any number to check perfect number: 36
36 is NOT PERFECT NUMBER

...Program finished with exit code 0
Press ENTER to exit console.
```

24. To find the sum of series: S=2+4+6+8+.....N terms.

```
#include <stdio.h>

int main()
```

```
{
    int i,n;
    int sum_of_series = 0;
    printf("\n C Program to print sum of series 2 + 4 + 6 +
8 + .... + n : \n\n ");
    printf("Enter an even number n : ");
    scanf("%d",&n);
    for ( i = 1 ; i <= n ; i++ )
    {
        i = i+1;
      if(n!=i)
        printf(" %d +",i);
      else
        printf(" %d ",i);
      sum_of_series = sum_of_series + i;
    }
   printf(" = %d",sum_of_series);
```

```
    return 0;
}
```

```
C Program to print sum of series 2 + 4 + 6 + 8 + .... + n :

Enter an even number n : 6
2 + 4 + 6  = 12

...Program finished with exit code 0
Press ENTER to exit console.
```

25. To check a number is prime or not.

```
#include <stdio.h>
int main()
{
    int i,n,flag=0;
```

```
scanf("%d", &n);
for(i=1;i<n;i++)
{
    if(n%1==0)
    {
        flag=flag+1 ;
    }
}
    if(flag==2)
    {
        printf("%t is a prime number");
    }
    else
    {
        printf("%t is not a prime number");
    }
```

```
    return 0;
}
```

```
73
It is not a prime number

...Program finished with exit code 0
Press ENTER to exit console.
```

26. To find sum of Series: 1 + 1/2 + 1/3 + 1/4 + 1/5 ..... N.

```
#include <stdio.h>

int main()
{
```

```
    int num,i,sum=0;
    printf("Input any number: ");
    scanf("%d",&num);
    printf("1 + ");
    for(i=2;i<=num-1;i++)
    printf(" 1/%d +",i);
    for(i=1;i<=num;i++)
    sum = sum + i;
    printf(" 1/%d",num);
    printf("\nSum = 1/%d",sum+1/num);
    return 0;
}
```

```
Input any number: 56
1 +  1/2 + 1/3 + 1/4 + 1/5 + 1/6 + 1/7 + 1/8 + 1/9 + 1/10 + 1/11 + 1/12 + 1/13 + 1/14 + 1/15 + 1/16 + 1/17 + 1/18 + 1/1
9 + 1/20 + 1/21 + 1/22 + 1/23 + 1/24 + 1/25 + 1/26 + 1/27 + 1/28 + 1/29 + 1/30 + 1/31 + 1/32 + 1/33 + 1/34 + 1/35 + 1/3
6 + 1/37 + 1/38 + 1/39 + 1/40 + 1/41 + 1/42 + 1/43 + 1/44 + 1/45 + 1/46 + 1/47 + 1/48 + 1/49 + 1/50 + 1/51 + 1/52 + 1/5
3 + 1/54 + 1/55 + 1/56
Sum = 1/1596


...Program finished with exit code 0
Press ENTER to exit console.
```


27. To find sum of series:
1! + 2! + 3! + 4!
..... n! .

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

```
int main()
{
    int i,N,fact=1;
      float sum;
      printf("Enter the value of N: ");
      scanf("%d",&N);
      sum=0;
      for(i=1;i<=N;i++)
    {
       fact=fact*i;
    }
      for(i=1;i<=N;i++)
           sum = sum + fact*i;
      printf("Sum of the series is: %f\n",sum);
    return 0;
}
```

```
Enter the value of N: 5
Sum of the series is: 1800.000000


...Program finished with exit code 0
Press ENTER to exit console.
```


28. To find sum of series: S=1^3 + 2^3 + 3^3 + 4^3 ..... N terms.

```
#include <stdio.h>

int main()
```

```
{
    int i,N;
      unsigned long sum;
      printf("Enter the value of N: ");
      scanf("%d",&N);
      sum=0;
      for(i=1;i<=N;i++)
            sum= sum+ (i*i*i);
      printf("Sum of the series is: %ld\n",sum);
    return 0;
}
```

```
Enter the value of N: 5
Sum of the series is: 225


...Program finished with exit code 0
Press ENTER to exit console.
```

29. To find sum of series: S=1/1! + 2/2! + 3/3! ..... 7th term.

```
#include <stdio.h>

int main()

{

    int num = 1, count;
```

```
    float sum = 0.0, fact;
    while(num <= 7)
    {
        fact = 1;
        for(count = 1; count <= num; count++)
        {
            fact = fact * count;
        }
          sum = sum + (num / fact);
        num++;
    }
    printf("Sum of series is %f\n", sum);
    return 0;
}
```

```
Sum of series is 2.718056


...Program finished with exit code 0
Press ENTER to exit console.
```


30. To convert binary number to decimal number.

```
#include <stdio.h>

int main()

{
```

```
int n1, n;
   int dec=0,i=0,j,d;
   printf("Input  the binary number :");
   scanf("%d",&n);
   n1=n;
   while(n!=0)
   {  d = n % 10;
      dec=dec+d*pow(2,i);
      n=n/10;
      i++;
   }
    printf("The equivalent Decimal  Number is :
%d\n",dec);
   return 0;
}
```

```
Input  the binary number :1011
The equivalent Decimal  Number is : 11


...Program finished with exit code 0
Press ENTER to exit console.
```


31. To find sum of series: S=1^4 + 2^4 + 3^4 ..... 100th term.

```
#include <stdio.h>

int main()
```

```
{
    int i,N=100;
      unsigned long sum;
      printf("Enter the value of N: ");
      scanf("%d",&N);
      sum=0;
      for(i=1;i<=N;i++)
            sum= sum+ (i*i*i*i);
      printf("Sum of the series is: %ld\n",sum);
  return 0;
}
```

```
Enter the value of N: 5
Sum of the series is: 979


...Program finished with exit code 0
Press ENTER to exit console.
```

32. To print the pattern:

```
* * *
 * * *
  * * *
```

```
#include <stdio.h>

int main()

{
```

```
    int n;
    for(int i=0;i<3;i++)
    {
       for(int j=0;j<3;j++)
       {
          printf("*");
       }
       printf("\n");
    }
return 0;
}
```

```
***
***
***


...Program finished with exit code 0
```

33. To print the pattern:

```
1  2  3
1  2  3
1  2  3
```

```
#include <stdio.h>

int main()

{
```

```
    int i,j;
    for(i=1;i<=3;i++)
    {
    for(j=1;j<=3;j++)
    printf("%d",j);
    printf("\n");
    }
    return 0;
}
```

```
123
123
123


...Program finished with exit code 0
```

34. To print the pattern:

```
1   1   1
2   2   2
3   3   3
```

```
#include <stdio.h>

int main()

{

    int i,j;

    for(i=1;i<=3;i++)
```

```
    {
    for(j=1;j<=3;j++)
    printf("%d",i);
    printf("\n");
    }
    return 0;
}
```

```
111
222
333


...Program finished with exit code 0
Press ENTER to exit console.
```

35. To print the pattern:

```
3   2   1
3   2   1
3   2   1
```

```
#include <stdio.h>

int main()

{

   int i,j;

   for(i=3;i>=1;i--)

   {

   for(j=3;j>=1;j--)
```

```
    printf("%d",j);
    printf("\n");
    }
    return 0;
}
```



```
321
321
321


...Program finished with exit code 0
Press ENTER to exit console.
```

36. To print the pattern:

```
3   3   3
2   2   2
1   1   1
```

```
#include <stdio.h>

int main()

{

   int i,j;

   for(i=3;i>=1;i--)

   {

   for(j=3;j>=1;j--)

   printf("%d",i);
```

```
    printf("\n");
    }
    return 0;
}
```

```
333
222
111


...Program finished with exit code 0
Press ENTER to exit console.
```

37. To print the pattern:

```
*
*   *
*   *   *
```

```
#include <stdio.h>

int main()

{

   int n;

   for(int i=1;i<=3;i++)

   {

      for(int j=1;j<=i;j++)

      {

         printf("* ");
```

```
        }
        printf("\n");
    }
    return 0;
}
```

38. To print the pattern:

```
1
1   2
1   2   3
```

```
#include <stdio.h>

int main()

{

   int i,j;

  for (i = 1; i <= 3; ++i)

   {

    for (j = 1;j <= i; ++j)

    {

      printf("%d ",j);

    }

    printf("\n");

   }

   return 0;
```

```
}
```

```
1
1 2
1 2 3


...Program finished with exit code 0
Press ENTER to exit console.
```

39. To print the pattern:

```
1
2  2
3  3  3
```

```
#include <stdio.h>

int main()

{

   int i,j;

   for(i=1; i<=3; i++)

   {

      for(j=1;j<=i;j++)

      {

         printf("%d", i);

      }

      printf("\n");

   }

   return 0;
```

```
}
```

```
1
22
333


...Program finished with exit code 0
Press ENTER to exit console.
```

40. To print the pattern:

```
3
3  2
3  2  1
```

```
#include <stdio.h>

int main()

{

   int i,j;

  for (i = 3; i >= 1; i--)

   {

    for (j = 3;j >= i;j--)

    {

      printf("%d ",j);

    }

    printf("\n");

   }

   return 0;
```

```
}
```

```
3
3 2
3 2 1


...Program finished with exit code 0
Press ENTER to exit console.
```

41. To print the pattern:

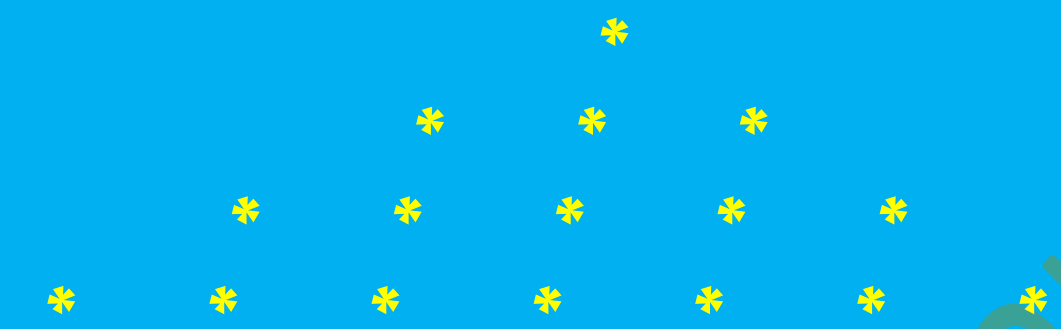
```
3
2   2
1   1   1
```

```
#include <stdio.h>

int main()

{

   int i,j;

   for(i=3; i>=1; i--)

   {

      for(j=3;j>=i;j--)

      {

         printf("%d", i);

      }

      printf("\n");

   }

   return 0;
```

```
}
```

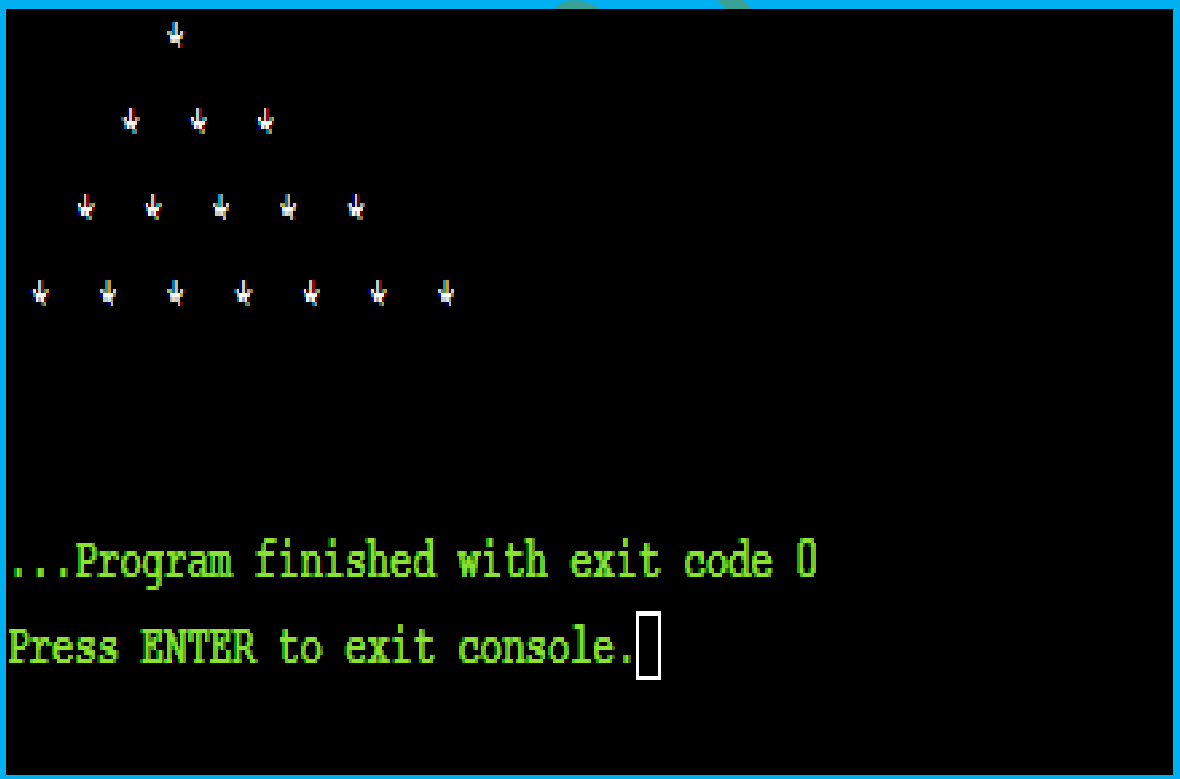
```
3
22
111



...Program finished with exit code 0
Press ENTER to exit console.
```

42. To print the pattern:



```
#include <stdio.h>

int main()

{

    int i, space, k = 0;

   for (i = 1; i <= 4; ++i, k = 0)

   {

    for (space = 1; space <= 4 - i; ++space)

    {

      printf("  ");

    }

    while (k != 2 * i - 1)

    {
```

```
        printf(" * ");
        ++k;
      }
    printf("\n");
    }

    return 0;
}
```



43. To print the pattern:

```
            1
        1   2   1
    1   2   3   2   1
1   2   3   4   3   2   1
```

```
#include <stdio.h>

int main()

{

   int i,j;

      for(i=1;i<=4;i++)

      {

    for(j=1;j<=4-i;j++)

        {

          printf(" ");

        }

        for(j=1;j<=i;j++)

        {
```

```
            printf("%d",j);
        }
        for(j=i-1;j>=1;j--)
        {
            printf("%d",j);
        }
        printf("\n");
    }
    return 0;
}
```

```
   1
  121
 12321
1234321


...Program finished with exit code 0
Press ENTER to exit console.
```

44. To print the pattern:

1

0 1

1 0 1

0 1 0 1

```
#include <stdio.h>

int main()

{

   int i,j;

   for(i=0;i<=5;i++)

   {

    for(j=1;j<i;j++)

    {

      if((i+j)%2==0)

      {

       printf("0");

      }
```

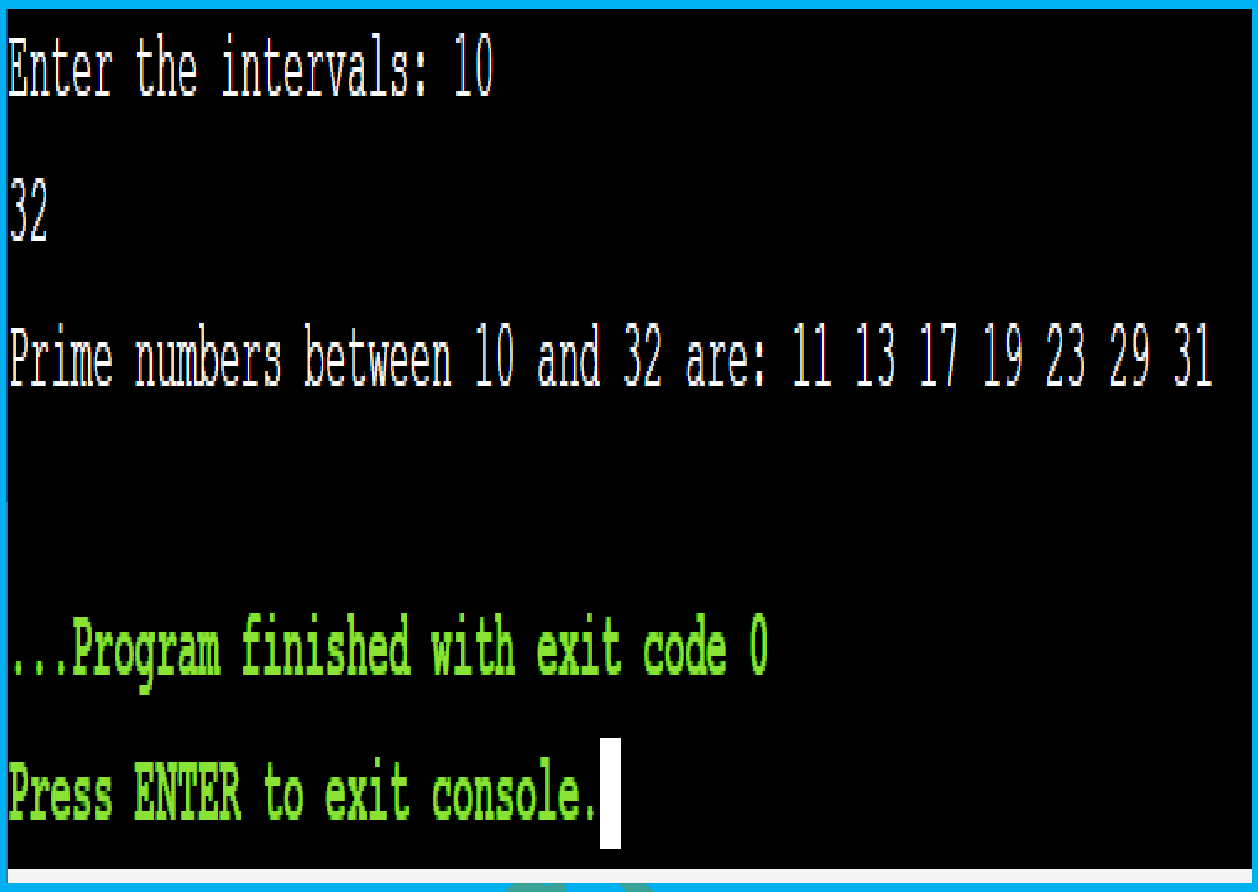
```
        else
        {
         printf("1");
        }
     }
    printf("\n");
}

    return 0;
}
```

```
1
01
101
0101


...Program finished with exit code 0
Press ENTER to exit console.
```

45. To print all prime numbers in a given range.

```
#include <stdio.h>

int main()

{

   int low, high, i, flag;

  printf("Enter the intervals: ");

  scanf("%d %d", &low, &high);

  printf("Prime numbers between %d and %d are: ", low,
high);

  while (low < high)

  {

   flag = 0;

    if (low <= 1)

    {

       ++low;
```

```
      continue;
    }
    for (i = 2; i <= low / 2; ++i)
    {
      if (low % i == 0)
      {
        flag = 1;
        break;
      }
    }
    if (flag == 0)
      printf("%d ", low);
    ++low;
  }
  return 0;
}
```


Enter the intervals: 10
32
Prime numbers between 10 and 32 are: 11 13 17 19 23 29 31
...Program finished with exit code 0
Press ENTER to exit console.

46. To convert decimal number into binary.

```
#include <stdio.h>

int main()

{

    int n, i, j, binno=0,dn;

    printf("Enter a number to convert : ");

    scanf("%d",&n);

    dn=n;

    i=1;

    for(j=n;j>0;j=j/2)

    {

        binno=binno+(n%2)*i;

        i=i*10;

        n=n/2;

    }
```

```
    printf("\nThe Binary conversion of %d is
%d.",dn,binno);

    return 0;

}
```

```
Enter a number to convert : 66


The Binary conversion of 66 is 1000010.


...Program finished with exit code 0
Press ENTER to exit console.
```

47. To find sum, average, max and min from a list of n numbers.

```
#include <stdio.h>

int main()

{

   int a[8],i,s=0,g,l;

   float avg;

   printf("Enter 8 Numbers:\n");

   for(i=0;i<8;i++)

   {

      scanf("%d",&a[i]);

      s=s+a[i];

      avg=s/8.0;

   }

   printf("Sum of Array Elements = %d\n",s);
```

```
printf("Average of Elements   = %.2f\n",avg);
g=a[0];
for(i=0;i<8;i++)
    if(a[i]>g)
    g=a[i];
printf("Greatest Element      = %d\n",g);
l=a[0];
for(i=0;i<8;i++)
    if(a[i]<l)
        l=a[i];
printf("Lowest Element        = %d",l);
return 0;
}
```

```
Enter 8 Numbers:
5
10
17
22
76
79
02
06
Sum of Array Elements = 217
Average of Elements   = 27.12
Greatest Element      = 79
Lowest Element        = 2

...Program finished with exit code 0
Press ENTER to exit console.
```