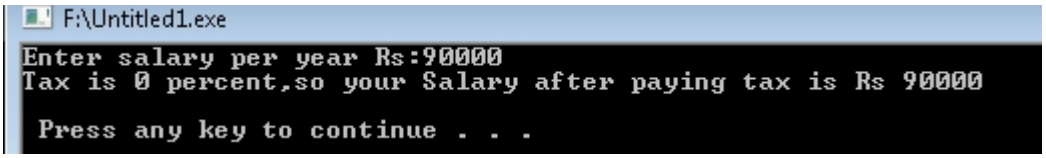
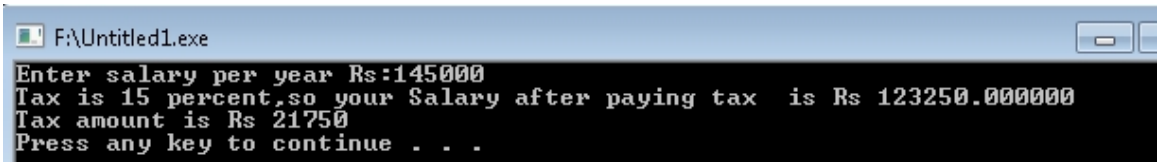
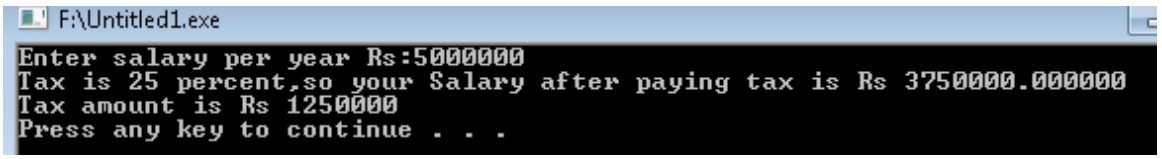
1)Write a program to read annual salary of an employee and decide tax withheld as follows:

Salary	Tax
Upto 100000	0%
Upto 150000	15%
Above 150000	25%

```
#include <stdio.h>
#include <stdlib.h>
int main()
{
int sal,tax;/*sal=salary*/
float total;
printf("Enter salary per year Rs:",sal);
scanf("%d",&sal);
if (sal<=100000)
printf("Tax is 0 percent,so your Salary after paying tax is Rs
%d \n\n ",sal);
else if (sal>100000 && sal<=150000)
{
total=sal-(0.15*sal);
printf("Tax is 15 percent,so your Salary after paying tax  is
Rs %f \n",total);
tax=sal-total;
printf("Tax amount is Rs %d\n",tax);
}
else if(sal>150000)
{
total=sal-(0.25*sal);
printf("Tax is 25 percent,so your Salary after paying tax is Rs
%f \n ",total);
tax=sal-total;
printf("Tax amount is Rs %d\n",tax);
}
system("pause");
return(0);
}
```

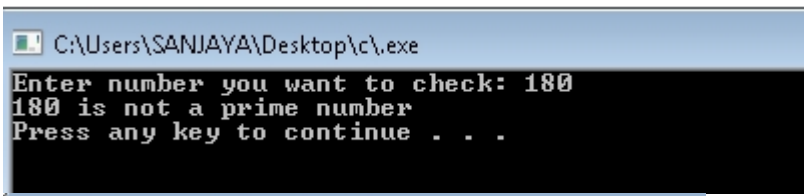


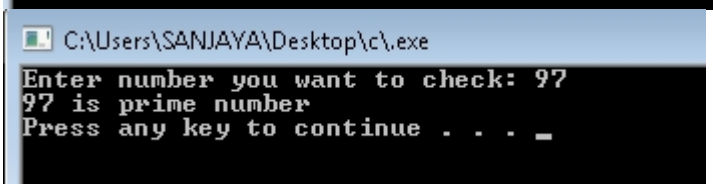




2) **Write a program to check whether a given number is prime or not.**

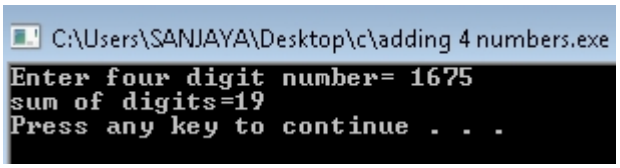
```
#include <stdio.h>
#include <stdlib.h>
int main()
{
int n,i=2;
printf("Enter number you want to check: ");
scanf("%d",&n);
for (i=2;i<=n-1;i++)
{
if (n%i==0)
{
printf("%d is not a prime number\n",n);
break;
}
}
{
   if (i==n)
   printf("%d is prime number \n",n);
}
system("pause");
return(0);
}
```





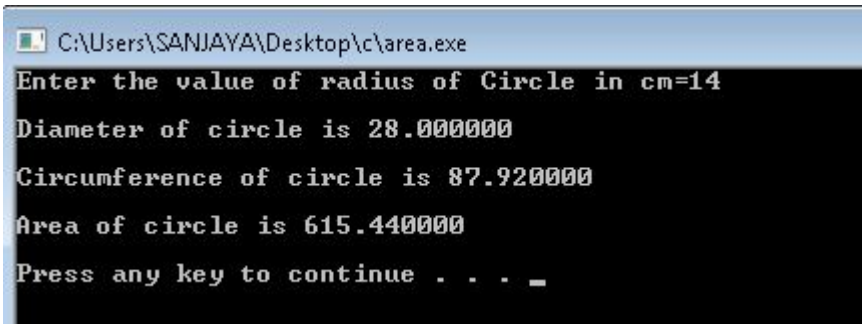
3)WAP that add digits of 4 digit number.

```
#include<stdio.h>
#include<stdlib.h>
int main()
{
    int a,sum=0;
    printf("Enter four digit number= ");
    scanf("%d",&a);
    sum=sum+(a%10);
    a=a/10;
    sum=sum+(a%10);
    a=a/10;
    sum=sum+(a%10);
    a=a/10;
    sum=sum+(a%10);
    a=a/10;
    sum=sum+(a%10);
    printf("sum of digits=%d \n",sum);
    system("pause");
    return(1);
}
```



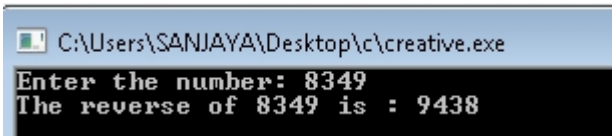
4)WAP to calculate diameter,circumference and area of circle.

```
/*a program that evaluates area and circumference of of circle*/
#include <stdio.h>
#define pie 3.14
int main()
{
float Area,Circumference,r,diameter;
printf("Enter the value of radius of Circle in cm=",r);
scanf("%f",&r);
Circumference=2*pie*r;
Area=pie*r*r;
diameter=2*r;
printf("\n");
printf("Diameter of circle is %f \n\n",diameter);
printf("Circumference of circle is %f \n\n",Circumference);
printf("Area of circle is %f \n\n",Area);
system("pause");
return(0);
}
```



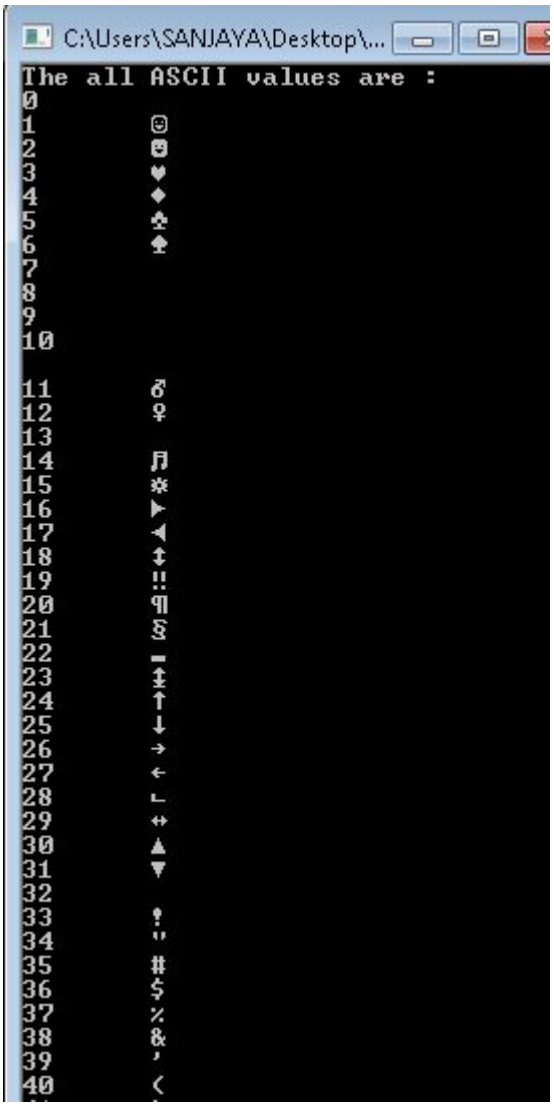
5)WAP that reverse the number.(4 digit number)

```
#include <stdio.h>
int main()
{
int num;
printf("Enter the number: ");
scanf("%d",&num);
printf("The reverse of %d is : ",num);
printf("%d",num%10);
num=num/10;
printf("%d",num%10);
num=num/10;
printf("%d",num%10);
num=num/10;
printf("%d",num%10);
scanf("%d",&num);
return(1);
}
```



6)Write a program that displays all Ascii codes.

```
#include <stdio.h>
int main()
{
int i;
printf("The all ASCII values are : ");
for(i=0;i<=256;i++)
{
printf("\n%d \t%c",i,i);
}
system("pause");
return(0);
```

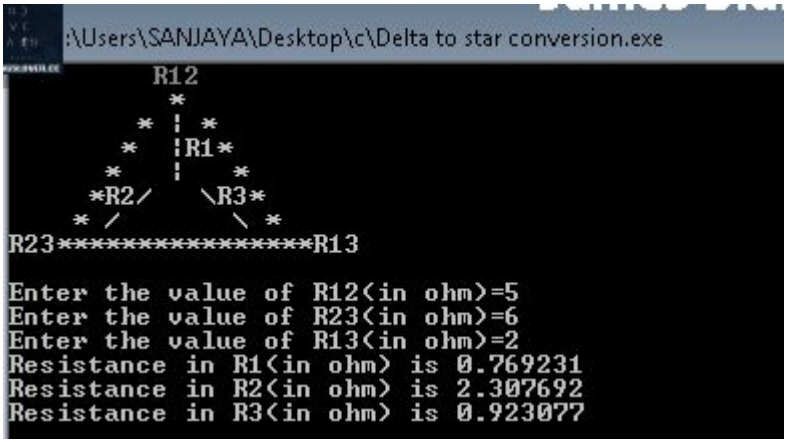


}

7)Write a program for delta star transformation of resistance.

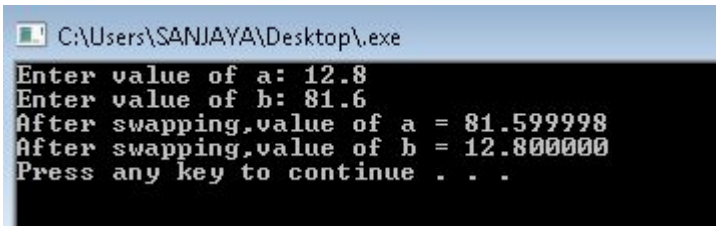
```
#include <stdio.h>
int main()
{
 double R1,R2,R3,R12,R23,R13;
   printf("        R12\n");
   printf("         *\n");
   printf("       * | *\n");
   printf("      *  |R1*\n");
   printf("     *   |   *\n");
   printf("    *R2/   \\R3*\n");
   printf("   * /      \\ *\n");
   printf("R23***************R13\n\n");
  printf("Enter the value of R12(in ohm)=");
```

```
   scanf("%Lf",&R12);
   printf("Enter the value of R23(in ohm)=");
    scanf("%Lf",&R23);
    printf("Enter the value of R13(in ohm)=");
    scanf("%Lf",&R13);
    R1=(R12*R13)/(R12+R23+R13);
    printf("Resistance in R1(in ohm) is %Lf\n",R1);
    R2=(R12*R23)/(R12+R23+R13);
    printf("Resistance in R2(in ohm) is %Lf\n",R2);
    R3=(R13*R23)/(R12+R23+R13);
    printf("Resistance in R3(in ohm) is %Lf\n",R3);
    scanf("%lf",&R3);
   return(1);
}
```



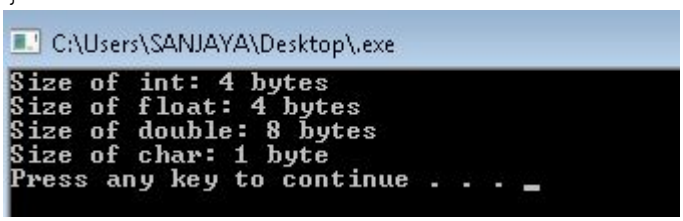
8)Write a program will swap the value of these two numbers.

```
#include <stdio.h>
int main()
{
float a,b,temp;
printf("Enter value of a: ");
scanf("%f",&a);
printf("Enter value of b: ");
scanf("%f",&b);
temp=a; /*Value of a is stored in variable temp */
a=b; /*Value of b is stored in variable a*/
b=temp;/*Value of temp(which contains initial value of a) is
stored in variable b*/
printf("After swapping,value of a = %f\n",a);
printf("After swapping,value of b = %f\n",b);
system("pause");
return (0);
}
```



9)/* This program computes the size of variable using size of operator.*/

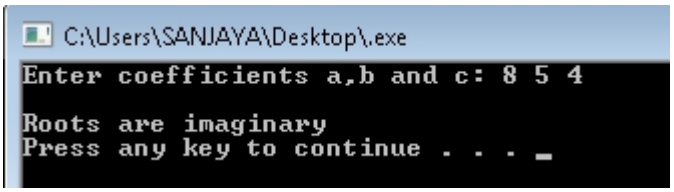
```
#include <stdio.h>
int main()
{
int a;
float b;
double c;
char d;
printf("Size of int: %d bytes\n",sizeof(a));
printf("Size of float: %d bytes\n",sizeof(b));
printf("Size of double: %d bytes\n",sizeof(c));
printf("Size of char: %d byte\n",sizeof(d));
system("pause");
return (0);
}
```

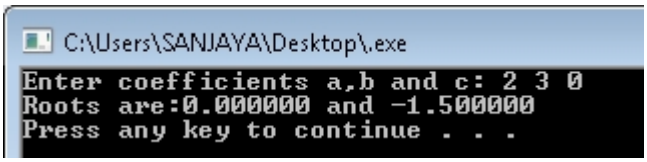


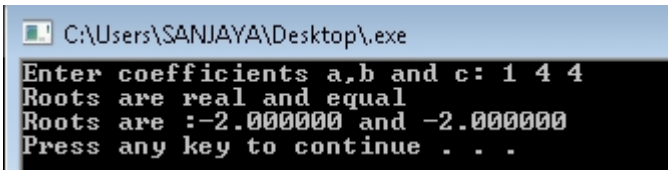
10)/*C Program to find roots of a quadratic equation when coefficients are entered by user*/

```
/*Library function sqrt() computes the square root*/
#include <stdio.h>
#include <math.h> /*This is needed to use sqrt() function*/
int main()
{
float a,b,c,determinant,r1,r2,real,imag;
printf("Enter coefficients a,b and c: ");
scanf("%f%f%f",&a,&b,&c);
if (a==0.0)
{
printf("It is not a quadratic equation");
exit(1);
}
determinant=b*b-4*a*c;
if(determinant<0.0)
printf("\nRoots are imaginary\n");
```

```
else if(determinant>0.0)
{
printf("Roots are real and unequal");
r1=(-b+sqrt(determinant))/(2*a);
r2=(-b-sqrt(determinant))/(2*a);
printf("\nfirst root:%f",r1);
printf("\nsecond root:%f",r2);
}
else if(determinant==0)
{
r1 =r2 =-b/(2*a);
printf("Roots are real and equal\n");
printf("Roots are :%f and %f\n",r1,r2);
}
else
{
real=-b/(2*a);
imag =sqrt(-determinant)/(2*a);
printf("Roots are: %f+%fi and %f-%fi \n",real,imag,real,imag);
}
system("pause");
return (0);
 }
```



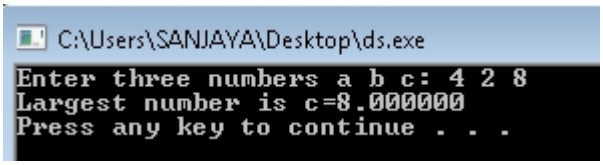




11)/* C program to find largest number using if statement only */

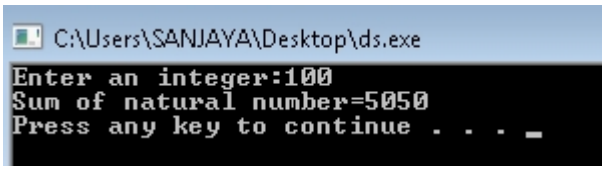
```
#include <stdio.h>
int main()
{
float a, b, c;
printf("Enter three numbers a b c: ");
scanf("%f %f %f",&a,&b,&c);
```

```
if(a>=b && a>=c)
printf("Largest number is a =%f\n",a);
if(b>=a && b>=c)
printf("Largest number is b=%f\n",b);
if(c>=a && c>=b)
printf("Largest number is c=%f\n",c);
system("pause");
return 0;
}
```



12)WAP to calculate Sum of Natural Numbers.

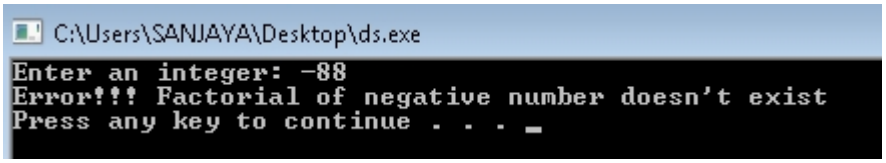
```
/* This program is solve using for loop*/
 #include <stdio.h>
 int main()
 {
int n,count,sum=0;
printf("Enter an integer:");
scanf("%d",&n);
for(count=1;count<=n;++count)/* for loop terminates if count>n
*/
{
 sum+=count;/* sum=sum+count */
 }
 printf("Sum of natural number=%d\n",sum);
 system("pause");
 return 0;
 }
```

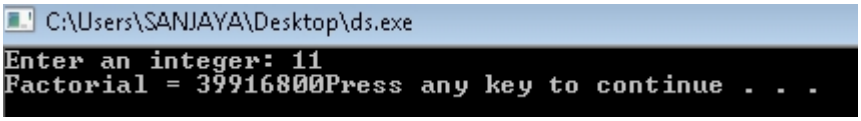


13)Source Code to Find Factorial of a Number.

```
/*C program to display factorial of an integer if user enters
non-negative integer*/
#include <stdio.h>
int main()
{
int n,count;
unsigned long long int factorial=1;
printf("Enter an integer: ");
scanf("%d",&n);
```

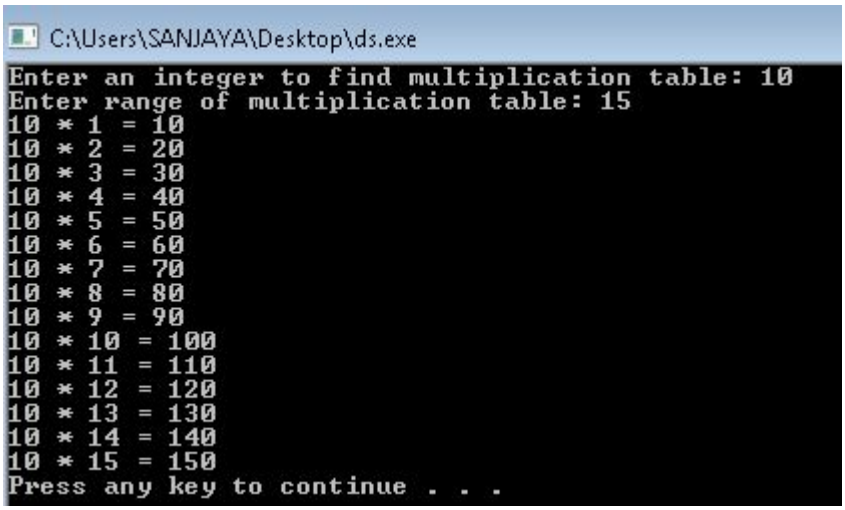
```
if (n<0)
printf("Error!!! Factorial of negative number doesn't
exist\n");
else
{
for(count=1;count<=n;++count) /*for loop terminates if
count>n*/
{
factorial*=count; /*factorial=factorial*count*/
}
printf("Factorial = %lu",factorial);
}
system("pause");
return 0;
 }
```





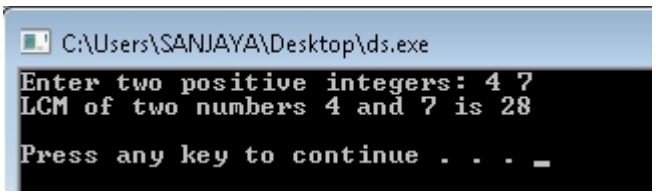
14)Source Code to Generate Multiplication Table

```
#include <stdio.h>
int main()
{
int n,range,i;
printf("Enter an integer to find multiplication table: ");
scanf("%d",&n);
printf("Enter range of multiplication table: ");
scanf("%d",&range);
for(i=1;i<=range;++i)
{
printf("%d * %d = %d\n",n,i,n*i);
}
system("pause");
 return 0;
}
```



15)Source Code to Compute LCM

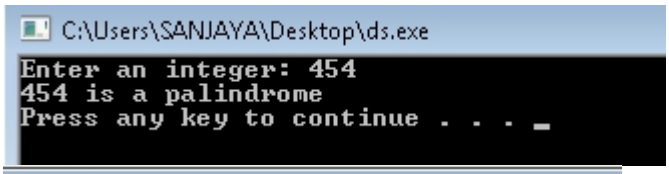
```
#include<stdio.h>
int main()
{
int n1,n2,temp1,temp2;
printf("Enter two positive integers:");
scanf("%d %d",&n1,&n2);
temp1=n1;
temp2=n2;
while(temp1!=temp2)
{
if(temp1>temp2)
temp1-=temp2;
else temp2-=temp1;
}
printf("LCM of two numbers %d and %d is
%d\n\n",n1,n2,(n1*n2)/temp1);
system("pause");
return 0;
}
```

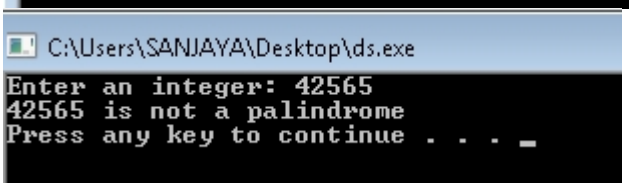


16)C Program to Check Palindrome Number

```
/*C program to check whether a number is palindrome or not */
#include <stdio.h>
int main()
{
```

```
int n,reverse=0,rem,temp;
printf("Enter an integer: ");
scanf("%d",&n);
temp=n;
while(temp!=0)
{
rem=temp%10;
reverse=reverse*10+rem;
temp/=10; } /* Checking if number entered by user and it's reverse
number is equal. */
if(reverse==n)
printf("%d is a palindrome\n",n);
else
printf("%d is not a palindrome\n",n);
system("pause");
return 0;
}
```

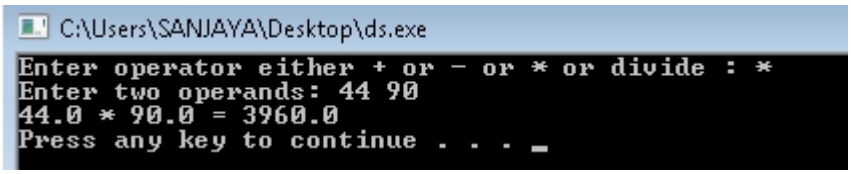


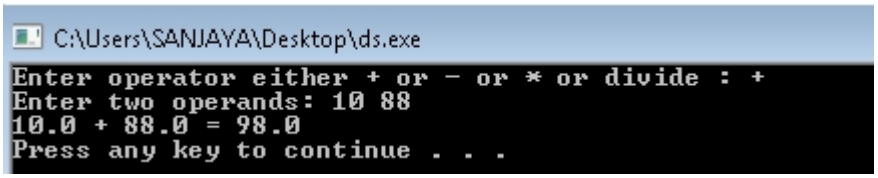


17)Source Code to Make Simple Calculator in C programming

```
tint main()
{
char o;
float num1,num2;
printf("Enter operator either + or - or * or divide : ");
scanf("%c",&o);
printf("Enter two operands: ");
scanf("%f%f",&num1,&num2);
switch(o)
{
case '+':
printf("%f + %f = %f\n",num1,num2,num1+num2);
break;
case '-':
printf("%f - %f = %f\n",num1,num2,num1-num2);
break;
case '*':printf("%f * %f = %f\n",num1, num2, num1*num2);
break;
case '/':
```

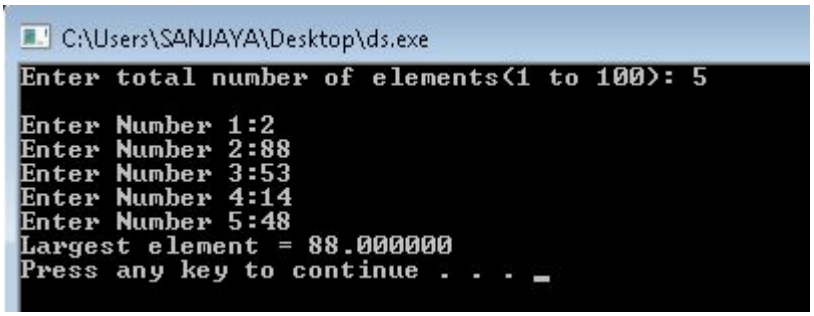
```
printf("%f / %f = %f\n",num1,num2,num1/num2);
break;
default: /*If operator is other than +, -, * or /, error message
is shown */
printf("Error! operator is not correct");
break;
}
system("pause");
return 0;
}
```





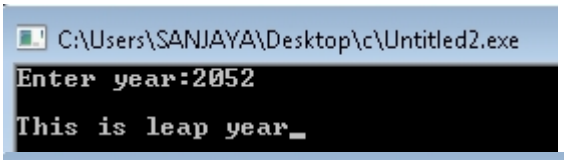
18)Source Code to Display Largest Element of an array

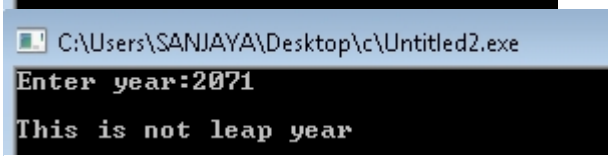
```
#include <stdio.h>
int main()
{
int i,n;
float arr[100];
printf("Enter total number of elements(1 to 100): ");
scanf("%d",&n);
printf("\n");
for(i=0;i<n;++i)/* Stores number entered by user*/
{
printf("Enter Number %d:",i+1);
scanf("%f",&arr[i]);
}
for(i=1;i<n;++i) /* Loop to store largest number to arr[0] */
{
if(arr[0]<arr[i]) /* Change < to > if you want to find smallest
element*/
arr[0]=arr[i];
}
printf("Largest element = %f\n",arr[0]);
system("pause");
return 0;
}
```



19)A program to find whether given year year is leap or not.

```
#include <stdio.h>
#include <stdlib.h>
int main()
{
int n;
printf("Enter year:");
scanf("%d",&n);
if((n%4==0 && n%100!=0)||n%400==0)
printf("\nThis is leap year");
else
printf("\nThis is not leap year ");
scanf("%d",&n);
return(1);
}
```



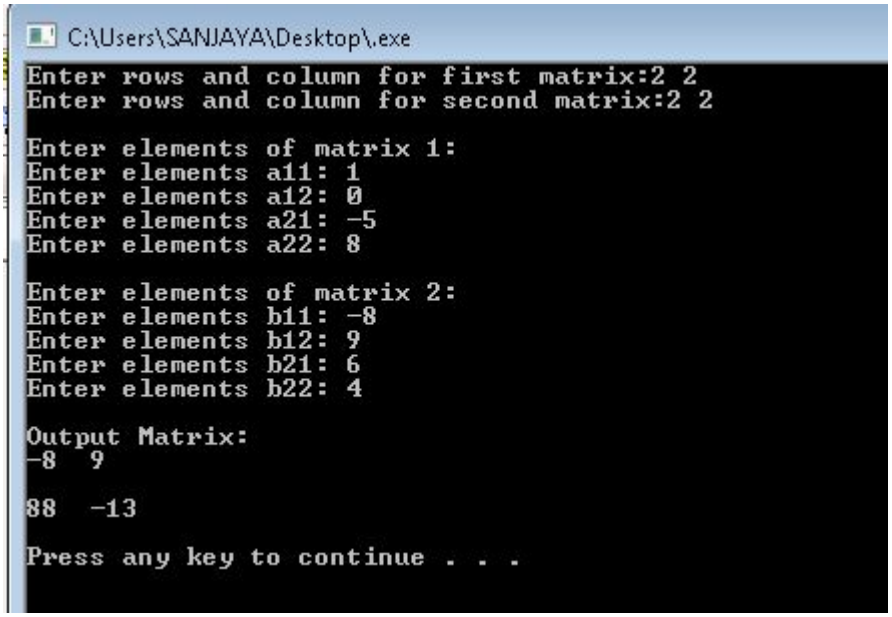


*2*0)Source code to multiply to matrix in C programming

```
#include <stdio.h>
int main()
{
int a[10][10],b[10][10],mult[10][10]r1,c1,r2,c2,i,j,k;
   printf("Enter rows and column for first matrix:");
   scanf("%d%d",&r1, &c1);
   printf("Enter rows and column for second matrix:");
   scanf("%d%d",&r2, &c2);
/* If colum of first matrix in not equal to row of second
matrix,exit */
```

```
    while (c1!=r2)
    {
       printf("Error! column of first matrix not equal to row
of second So there will be no multiplication\n\n");
       exit(1);
    }

/* Storing elements of first matrix. */
    printf("\nEnter elements of matrix 1:\n");
    for(i=0; i<r1; ++i)
    for(j=0; j<c1; ++j)
    {
       printf("Enter elements a%d%d: ",i+1,j+1);
       scanf("%d",&a[i][j]);
    }

/* Storing elements of second matrix. */
    printf("\nEnter elements of matrix 2:\n");
    for(i=0; i<r2; ++i)
    for(j=0; j<c2; ++j)
    {
     printf("Enter elements b%d%d: ",i+1,j+1);
     scanf("%d",&b[i][j]);
    }

/* Initializing elements of matrix mult to 0.*/
    for(i=0; i<r1; ++i)
    for(j=0; j<c2; ++j)
    {
       mult[i][j]=0;
    }

/* Multiplying matrix a and b and storing in array mult. */
    for(i=0; i<r1; ++i)
    for(j=0; j<c2; ++j)
    for(k=0; k<c1; ++k)
    {
      mult[i][j]+=a[i][k]*b[k][j];
    }

/* Displaying the multiplication of two matrix. */
    printf("\nOutput Matrix:\n");
    for(i=0; i<r1; ++i)
    for(j=0; j<c2; ++j)
    {
       printf("%d  ",mult[i][j]);
       if(j==c2-1)
```

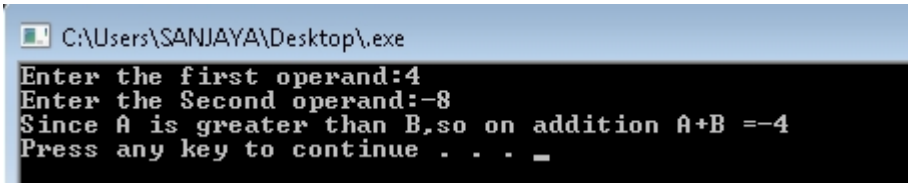
```
        printf("\n\n");
    }
    system("pause");
    return 0;
}
```

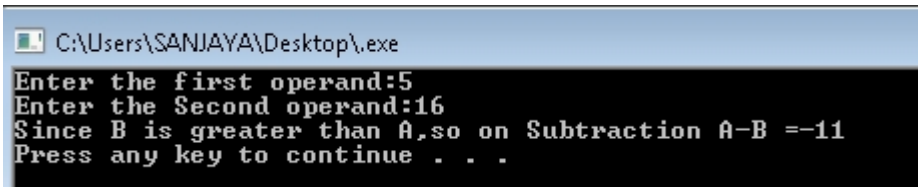


21)WAP to enter two numbers.Make the comparisons using conditional operator.If the first number is greater than second perform addition otherwise subtraction.

```
#include <stdio.h>
int main()
{
    int A,B,ADD,SUB;
    printf("Enter the first operand:");
    scanf("%d",&A);
     printf("Enter the Second operand:");
    scanf("%d",&B);
    if(A>B)
    {
    ADD=A+B;
    printf("Since A is greater than B,so on addition A+B
=%d\n",ADD);
    }
    else
    {
    SUB=A-B;
    printf("Since B is greater than A,so on Subtraction A-B
=%d\n",SUB);
```

```
    }
    system("pause");
    return 0;
}
```

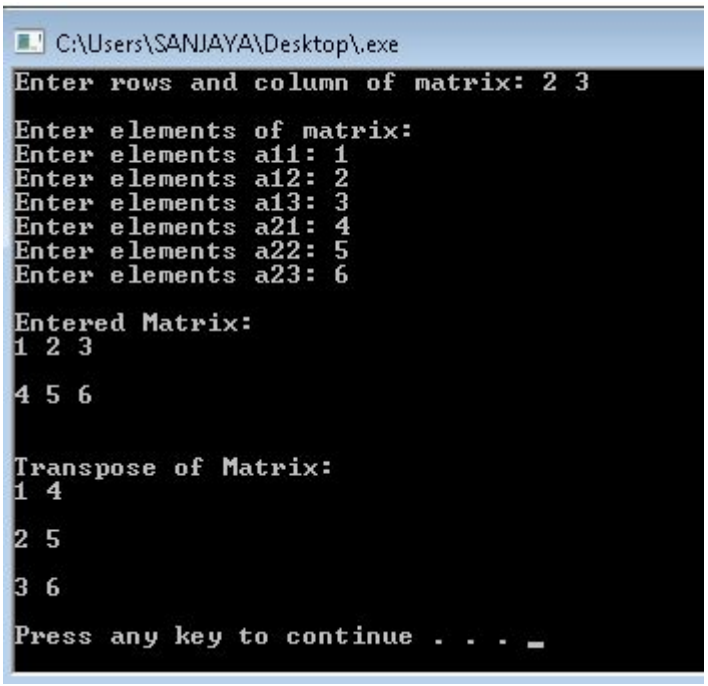




22)C Program to Find Transpose of a Matrix

```
#include <stdio.h>
int main()
{
int a[10][10],trans[10][10],r,c,i,j;
printf("Enter rows and column of matrix: ");
scanf("%d %d", &r, &c); /* Storing element of matrix entered by
user in array a[][]. */
printf("\nEnter elements of matrix:\n");
for(i=0; i<r; ++i) for(j=0; j<c; ++j)
{
 printf("Enter elements a%d%d: ",i+1,j+1);
 scanf("%d",&a[i][j]);
 }
 /* Displaying the matrix a[][] */
 printf("\nEntered Matrix: \n");
 for(i=0; i<r; ++i)
 for(j=0; j<c; ++j)
 {
printf("%d ",a[i][j]);
if(j==c-1)
printf("\n\n");
} /* Finding transpose of matrix a[][] and storing it in array
trans[][]. */
for(i=0; i<r; ++i)
for(j=0; j<c; ++j)
{
 trans[j][i]=a[i][j];
 } /* Displaying the transpose,i.e, Displaying array trans[][].
*/
```

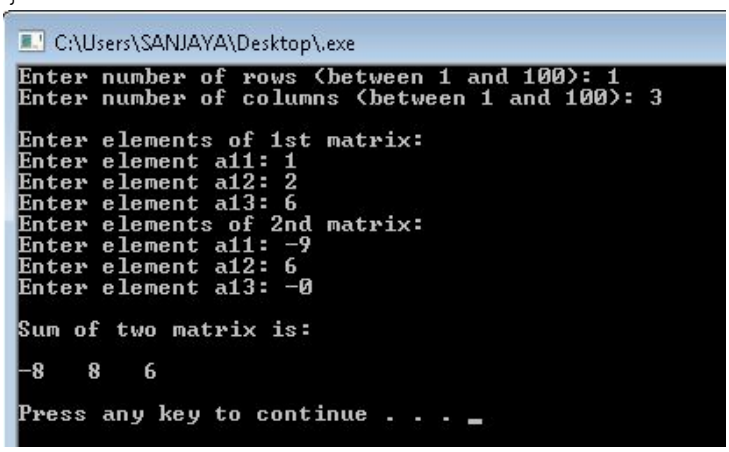
```
 printf("\nTranspose of Matrix:\n");
 for(i=0; i<c; ++i)
 for(j=0; j<r; ++j)
 {
printf("%d ",trans[i][j]);
if(j==r-1)
printf("\n\n");
}
system("pause");
return 0;
  }
```



23)Source Code to Add Two Matrix in C programming

```
#include <stdio.h>
int main(){
    int r,c,a[100][100],b[100][100],sum[100][100],i,j;
    printf("Enter number of rows (between 1 and 100): ");
    scanf("%d",&r);
    printf("Enter number of columns (between 1 and 100): ");
    scanf("%d",&c);
    printf("\nEnter elements of 1st matrix:\n");
/* Storing elements of first matrix entered by user. */

    for(i=0;i<r;++i)
       for(j=0;j<c;++j)
       {
          printf("Enter element a%d%d: ",i+1,j+1);
```

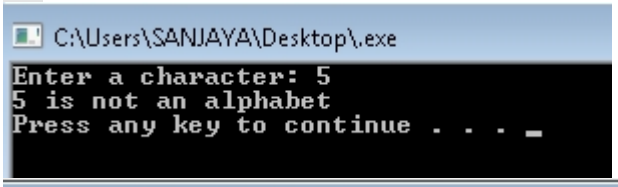
```
        scanf("%d",&a[i][j]);
       }
    printf("Enter elements of 2nd matrix:\n");
    for(i=0;i<r;++i)
       for(j=0;j<c;++j)
       {
          printf("Enter element a%d%d: ",i+1,j+1);
          scanf("%d",&b[i][j]);
       }
/*Adding Two matrices */
   for(i=0;i<r;++i)
       for(j=0;j<c;++j)
          sum[i][j]=a[i][j]+b[i][j];
/* Displaying the resultant sum matrix. */
    printf("\nSum of two matrix is: \n\n");
    for(i=0;i<r;++i)
       for(j=0;j<c;++j)
       {
     printf("%d",sum[i][j]);
     if(j==c-1)
         printf("\n\n");
       }
system("pause");
    return 0;
}
```

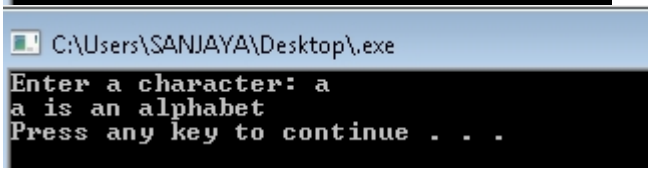


24)Source Code to Check Character is an alphabet or not

```
#include <stdio.h>
int main()
{
char c;
printf("Enter a character: ");
scanf("%c",&c);
if( (c>='a'&& c<='z') || (c>='A' && c<='Z'))
```

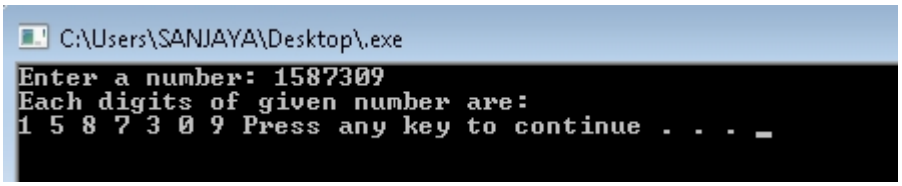
```
printf("%c is an alphabet\n",c);
else
printf("%c is not an alphabet\n",c);
system("pause");
return 0;
}
```





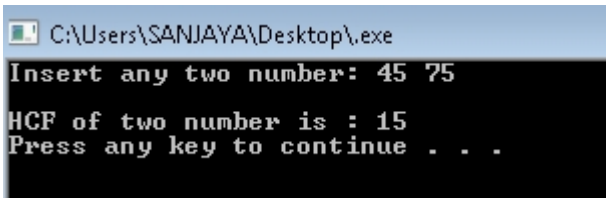
25)WAP that extract digits from integer in c language

```
#include<stdio.h>
int main(){
  int num,temp,factor=1;

  printf("Enter a number: ");
  scanf("%d",&num);

  temp=num;
  while(temp){
      temp=temp/10;
      factor = factor*10;
  }
  printf("Each digits of given number are: \n");
  while(factor>1){
      factor = factor/10;
      printf("%d ",num/factor);
   num = num % factor;
  }
system("pause");
  return 0;
}
```



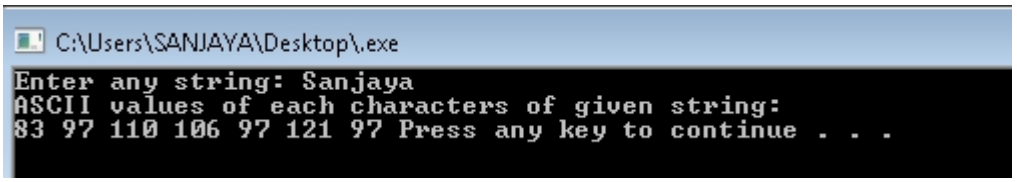
26)Write a c program for finding gcd (greatest common divisor) of two given numbers.

```
#include<stdio.h>
int main(){
int x,y,m,i;
printf("Insert any two number: ");
scanf("%d%d",&x,&y);
if(x>y)
      m=y;
    else
        m=x;
    for(i=m;i>=1;i--){
        if(x%i==0&&y%i==0){
           printf("\nHCF of two number is : %d\n",i) ;
          break;
        }
    }
    system("pause");
    return 0;
}
```



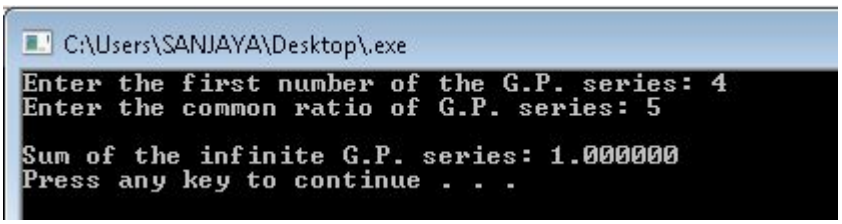
27)Program to convert string into ASCII values in c programming language:

```
#include<stdio.h>
int main(){
    char str[100];
    int i=0;
    printf("Enter any string: ");
    scanf("%s",str);
    printf("ASCII values of each characters of given string:
\n");
     while(str[i])
     printf("%d ",str[i++]);
   system("pause");
    return 0;
}
```



28)C program to find out the sum of infinite G.P. series.

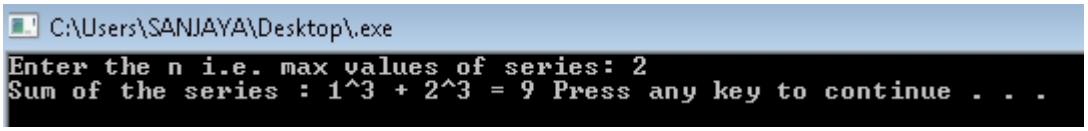
```
#include<stdio.h>
int main()
{
    float a,r;
    float sum=0;
    printf("Enter the first number of the G.P. series: ");
    scanf("%f",&a);
    printf("Enter the common ratio of G.P. series: ");
    scanf("%f",&r);
    if(1 > r)
     sum = a/(1-r);
    else
     sum = a/(r-1);
printf("\nSum of the infinite G.P. series: %f\n",sum);
system("pause");
    return 0;
}
```



29)Write a c program to find out the sum of series 1^3 + 2^3 + …. + n^3 Write a c program or code to find out the sum of series 1^3 + 2^3 + …. + n^3 that is sum of cube of n natural numbers.

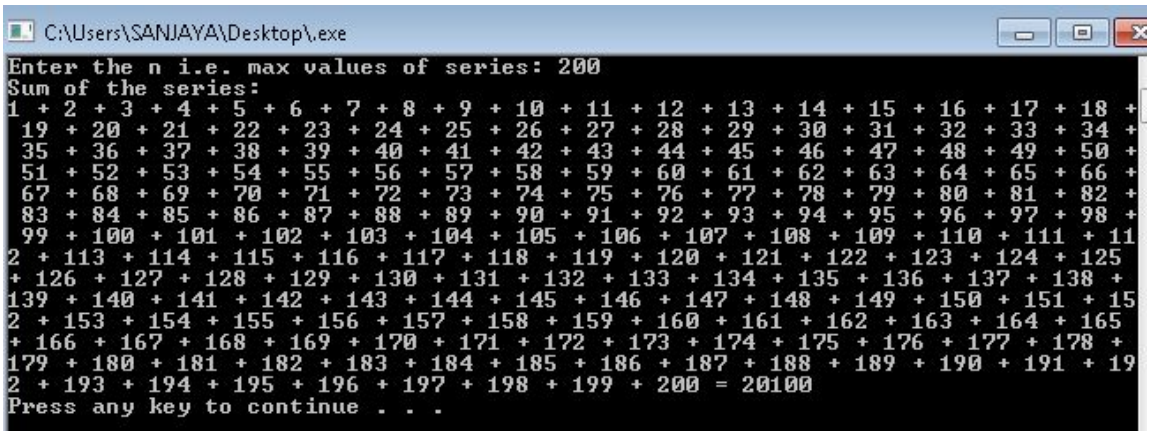
```
#include<stdio.h>
#include<math.h>
int main()
{
    int n,i;
    int sum=0;

    printf("Enter the n i.e. max values of series: ");
    scanf("%d",&n);
    sum = pow(((n * (n + 1) ) / 2),2);
    printf("Sum of the series : ");
```

```
    for(i =1;i<=n;i++){
     if (i != n)
     printf("%d^3 + ",i);
     else
     printf("%d^3 = %d ",i,sum);
    }
    system("pause");
    return 0;
}
```



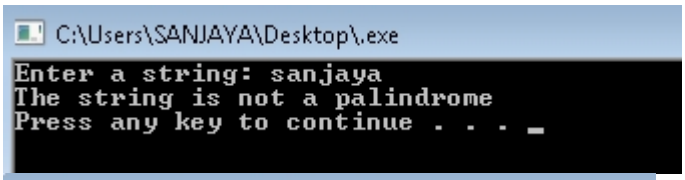
30)Write a c program to find out the sum of series 1 + 2 + …. + n. Sum of 1 + 2 + …. + n series in c programming language.

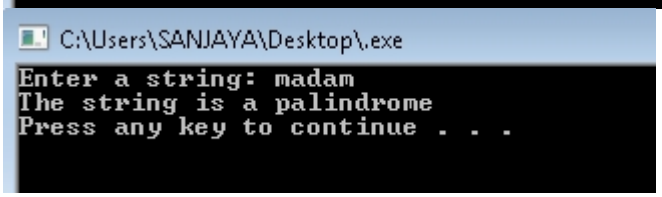
```
#include<stdio.h>
int main(){
    int n,i;
    int sum=0;
    printf("Enter the n i.e. max values of series: ");
    scanf("%d",&n);
    sum = (n * (n + 1)) / 2;
    printf("Sum of the series: \n");
   for(i =1;i <= n;i++)
   {
    if (i!=n)
     printf("%d + ",i);
    else
      printf("%d = %d \n",i,sum);
   }
   system("pause");
    return 0;
}
```



31)Palindrome in c without using string function

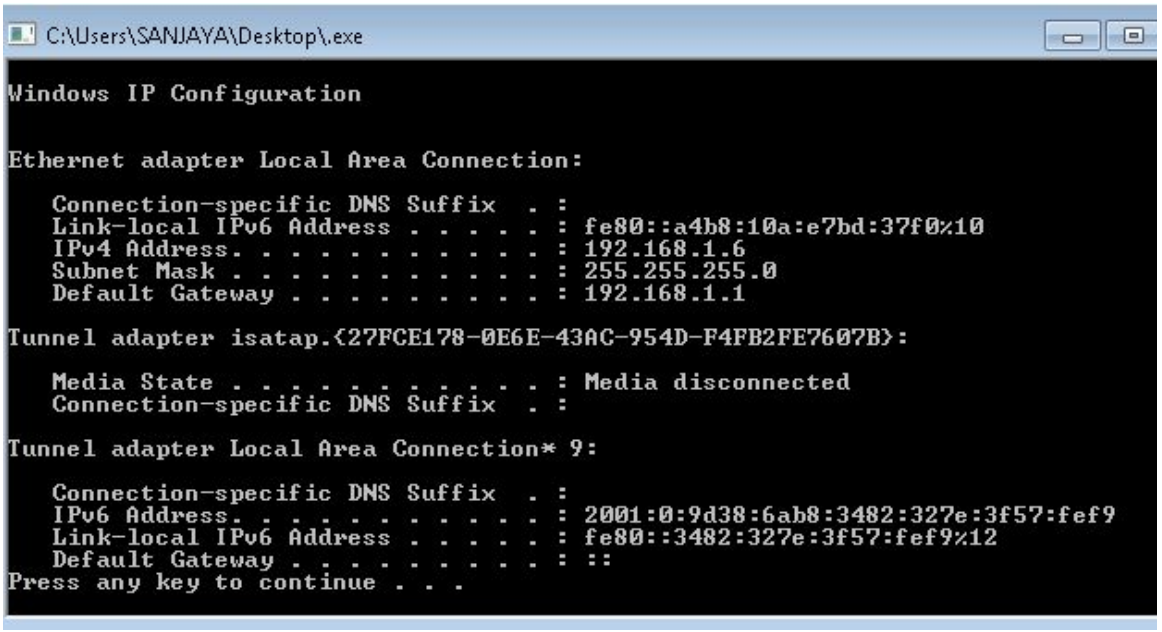
```
#include<stdio.h>
int main()
{
  char str[100];
  int i=0,j=-1,flag=0;
  printf("Enter a string: ");
  scanf("%s",str);
  while(str[++j]!='\0');
  j--;
  while(i<j)
      if(str[i++] != str[j--]){
          flag=1;
          break;
      }
  if(flag == 0)
  printf("The string is a palindrome\n");
  else
      printf("The string is not a palindrome\n");
system("pause");
  return 0;
}
```





32) C program to get IP address.

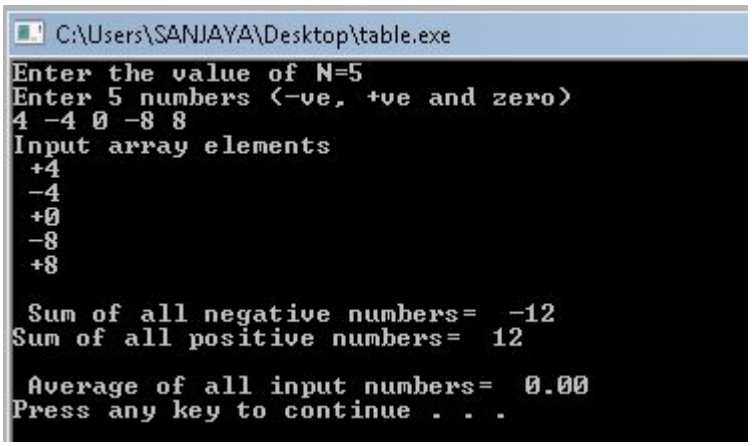
```
#include<stdlib.h>
 int main()
{
   system("C:\\Windows\\System32\\ipconfig");
 system("pause");
   return 0;
}
```



33)C Program to Calculate Sum & Average of an Array

```
#include <stdio.h>
#define MAXSIZE 10
 void main()
{
    int array[MAXSIZE];
    int i, num, negative_sum = 0, positive_sum = 0;
    float total = 0.0, average;
    printf ("Enter the value of N=");
    scanf("%d", &num);
    printf("Enter %d numbers (-ve, +ve and zero) \n", num);
    for (i = 0; i < num; i++)
    {
        scanf("%d", &array[i]);
    }
    printf("Input array elements \n");
    for (i =0;i <num;i++)
    {
        printf("%+3d\n",array[i]);
    }
    /*  Summation starts */
    for (i=0;i<num;i++)
    {
        if (array[i] < 0)
        {
        negative_sum =negative_sum + array[i];
        }
        else if (array[i] > 0)
```

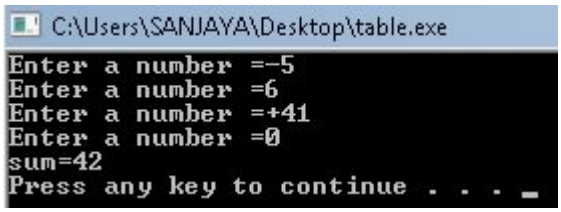
```
        {
        positive_sum =positive_sum + array[i];
        }
        else if(array[i] == 0)
        {
            ;
        }
        total = total + array[i] ;
    }
    average = total / num;
    printf("\n Sum of all negative numbers=
%d\n",negative_sum);
    printf("Sum of all positive numbers=  %d\n",positive_sum);
    printf("\n Average of all input numbers=  %.2f\n", average);
system("pause");
return(0);
}
```



34)Write a C program to add all the numbers entered by a user until user enters 0.

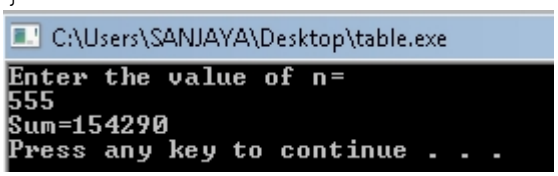
```
int main()
{
   int sum=0,num;
   do/* Codes inside the body of do...while loops are at least
executed once.*/
   {
        printf("Enter a number =");
        scanf("%d",&num);
        sum+=num;
   }
   while(num!=0);
   printf("sum=%d\n",sum);
   system("pause");
return 0;
```

```
}
```



35)Write a program to find the sum of first n natural numbers where n is entered by user. Note: 1,2,3... are called natural numbers.

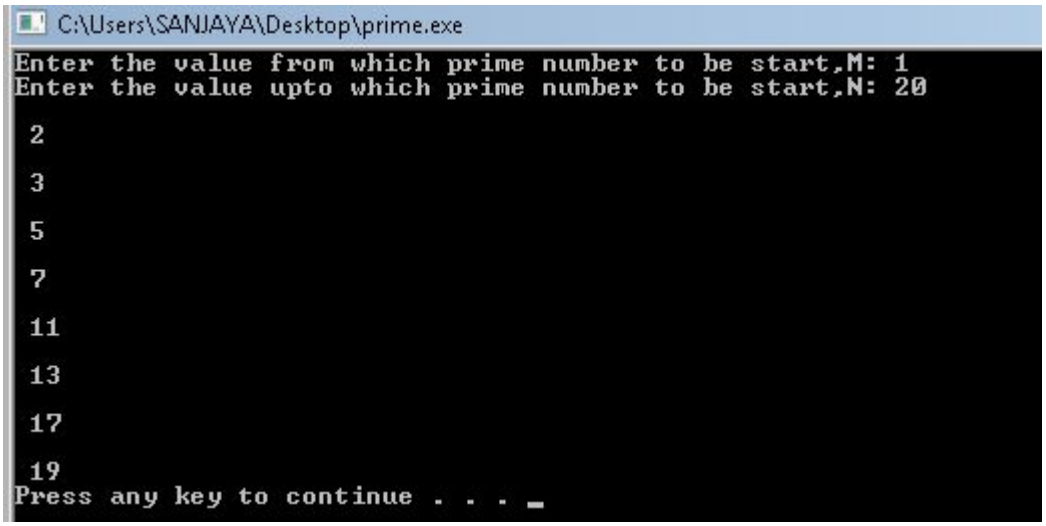
```
#include <stdio.h>
int main(){
    int n, count, sum=0;
    printf("Enter the value of n=\n");
    scanf("%d",&n);
    for(count=1;count<=n;++count)  //for loop terminates if
count>n
    {
      sum+=count;/* this statement is equivalent to
sum=sum+count */
    }
    printf("Sum=%d\n",sum);
    system("pause");
    return 0;
}
```



36)Source Code to Display Prime Numbers Between two Intervals

```
#include <stdio.h>
int main()
{
int i,j,n,m,c=0;
printf("Enter the value from which prime number to be start,M:
");
scanf("%d",&m);
printf("Enter the value upto which prime number to be start,N:
");
scanf("%d",&n);
if (m>n)
printf("M must be smaller than N");
for(i=m;i<=n;i++)
{
for(j=1;j<=i;j++)
{
```

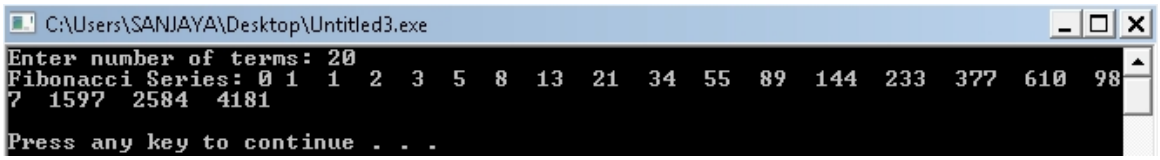
```
if(i%j==0)
{
c++;
}
}
if (c==2)
{
printf("\n %d \n",i);
}
c=0;
}
system("pause");
return 0;
}
```



37)Source code to display Fibonacci series up to n terms

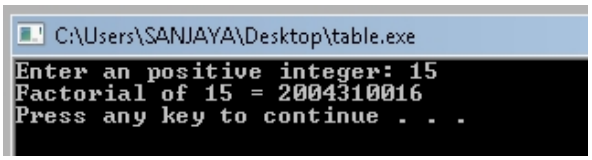
```
/* Displaying Fibonacci sequence up to nth term where n is entered
by user. */
 #include <stdio.h>
  int main()
   {
int count, n, t1=0, t2=1, display=0;
 printf("Enter number of terms: ");
 scanf("%d",&n);
 printf("Fibonacci Series: %d %d ", t1, t2); /* Displaying first
two terms */
 count=2;
 /* count=2 because first two terms are already displayed. */
 while (count<n)
 {
display=t1+t2;
t1=t2;
 t2=display;
```

```
++count;
printf(" %d ",display);
 }
 printf("\n\n");
 system("pause");
 return 0;
 }
```



38)Source Code to Calculate Factorial Using Recursion

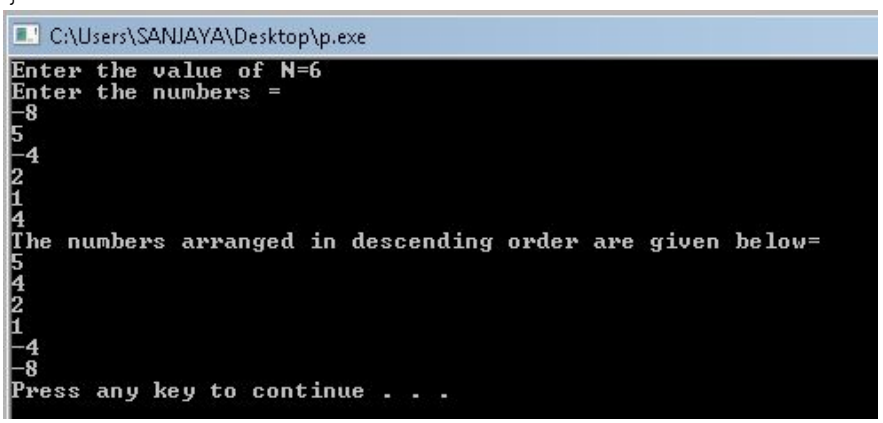
```
#include<stdio.h>
int factorial(int n);
int main()
{
int n;
printf("Enter an positive integer: ");
scanf("%d",&n);
printf("Factorial of %d = %lu",n,factorial(n));
printf("\n");
system("pause");
return 0;
}
int factorial(int n)
{
if(n!=1)
return n*factorial(n-1);
 }
```



39)WAP to sort array elements in descending order.

```
#include <stdio.h>
void main ()
{
   {
    int number[1000];
    int i,j,a,n;
    printf("Enter the value of N=");
    scanf("%d",&n);
```

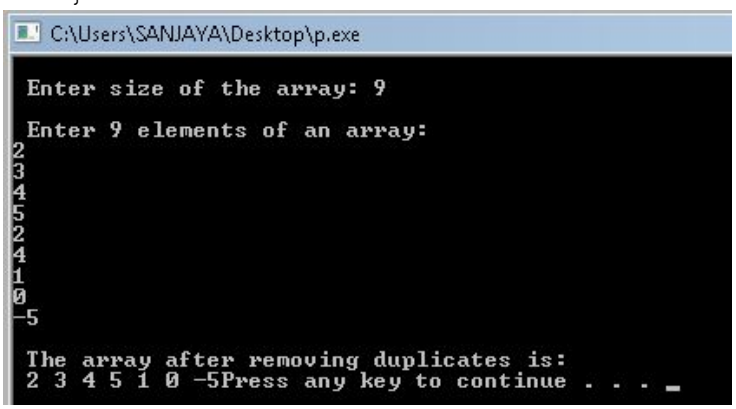
```
    printf("Enter the numbers =\n");
    for (i =0;i< n;++i)
    scanf("%d",&number[i]);
    /*  sorting begins ... */
    for (i=0;i<n;++i)
    {
        for (j=i+1;j<n;++j)
        {
            if (number[i]<number[j])
            {
                a =number[i];
                number[i]=number[j];
                number[j]=a;
            }
        }
    }
    printf("The numbers arranged in descending order are given
below=\n");
    for (i=0;i<n;++i)
    {
        printf("%d\n",number[i]);
    }
}
system("pause");
return 0;
}
```



40)C Program to Find the Number of Non Repeated Elements in an Array

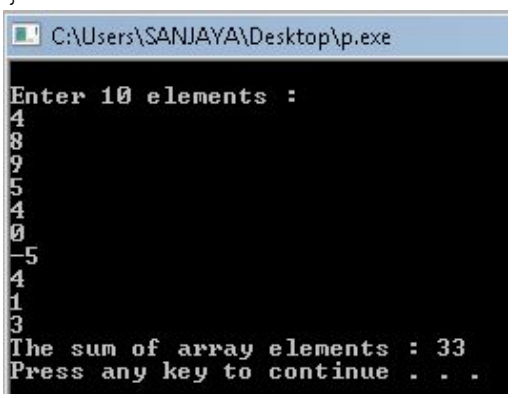
```
#include <stdio.h>
int main()
{
    int array[50];
    int *ptr;
    int i, j, k, size, n;
```

```
    printf("\n Enter size of the array: ");
    scanf("%d", &n);
    printf("\n Enter %d elements of an array: \n", n);
    for (i = 0; i < n; i++)
    scanf("%d", &array[i]);
    size = n;
    ptr = array;
    for (i=0;i< size;i++)
    {
        for (j =0;j<size;j++)
        {
            if (i==j)
            {
                continue;
            }
            else if (*(ptr + i) == *(ptr + j))
            {
                k = j;
                size--;
                while (k < size)
                {
                    *(ptr + k) = *(ptr + k + 1);
                    k++;
                }
                j = 0;
            }
        }
    }
    printf("\n The array after removing duplicates is: \n");
    for (i = 0; i < size; i++)
    {
        printf(" %d", array[i]);
    }
    system("pause");
    return 0;
    }
```



41)C Program to Compute sum of the array elements using pointers.

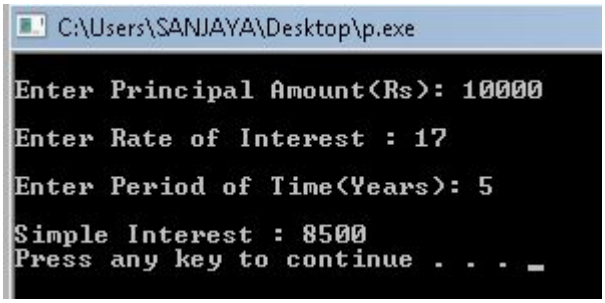
```
#include<stdio.h>
#include<conio.h>
void main() {
   int numArray[10];
   int i, sum = 0;
   int *ptr;
   printf("\nEnter 10 elements : \n");
   for (i=0;i<10;i++)
      scanf("%d", &numArray[i]);

   ptr =numArray; /* a=&a[0] */

   for (i = 0; i < 10; i++) {
      sum = sum + *ptr;
      ptr++;
   }
   printf("The sum of array elements : %d\n", sum);
   system("pause");
}
```



42)C Program to find the simple interest

```
#include<stdio.h>
int main() {
   int amount, rate, time, si;

   printf("\nEnter Principal Amount(Rs): ");
   scanf("%d",&amount);

   printf("\nEnter Rate of Interest : ");
   scanf("%d",&rate);
   printf("\nEnter Period of Time(Years): ");
   scanf("%d", &time);

   si =((amount * rate * time) / 100);
   printf("\nSimple Interest :%d\n",si);
```

```
 system("pause");
   return(0);
}
```



43)C Program to Implement Calender Program to display Day of the month

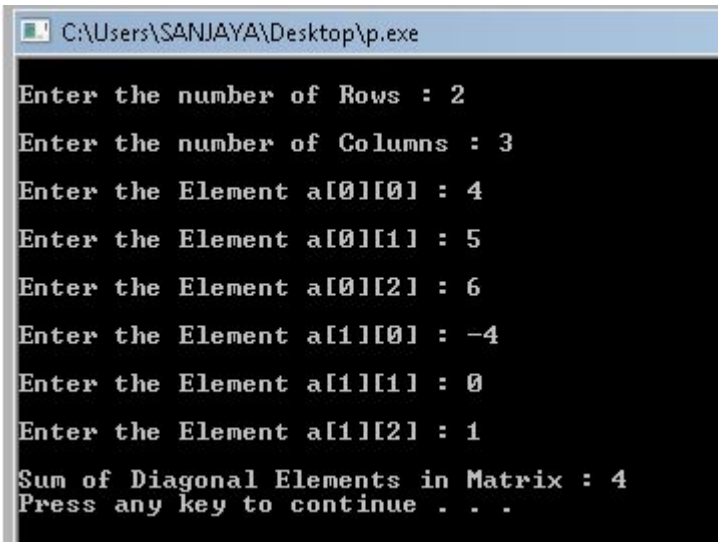
```
#include<stdio.h>
#include<conio.h>
#include<math.h>

int fm(int date, int month, int year) {
   int fmonth, leap;

   //leap function 1 for leap & 0 for non-leap
   if ((year % 100 == 0) && (year % 400 != 0))
      leap = 0;
   else if (year % 4 == 0)
      leap = 1;
   else
      leap = 0;
   fmonth = 3 + (2 - leap) * ((month + 2) / (2 * month))
        + (5 * month + month / 9) / 2;

   //bring it in range of 0 to 6
   fmonth = fmonth % 7;

   return fmonth;
}
 int day_of_week(int date, int month, int year) {

   int dayOfWeek;
   int YY = year % 100;
   int century = year / 100;

   printf("\nDate: %d/%d/%d \n",date,month,year);

   dayOfWeek = 1.25 * YY + fm(date, month, year) + date - 2 *
```

```
(century % 4);

   //remainder on division by 7
   dayOfWeek =dayOfWeek%7;

   switch (dayOfWeek) {
      case 0:
         printf("weekday = Saturday");
         break;
      case 1:
         printf("weekday = Sunday");
         break;
      case 2:
         printf("weekday = Monday");
         break;
      case 3:
         printf("weekday = Tuesday");
         break;
      case 4:
         printf("weekday = Wednesday");
         break;
      case 5:
         printf("weekday = Thursday");
         break;
      case 6:
         printf("weekday = Friday");
         break;
      default:
         printf("Incorrect data");
   }
   return 0;
}

int main() {
   int date, month, year;

   printf("\nEnter the year: ");
   scanf("%d", &year);

   printf("\nEnter the month: ");
   scanf("%d", &month);

   printf("\nEnter the date:");
   scanf("%d", &date);

   day_of_week(date, month, year);
 system("pause");
```

```
   return 0;
}
```

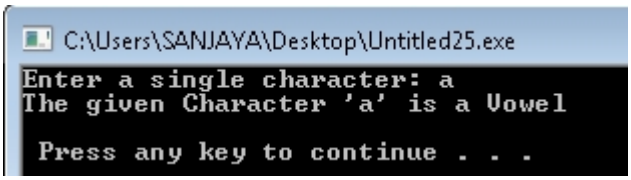
44)Addition of Diagonal Elements in Matrix

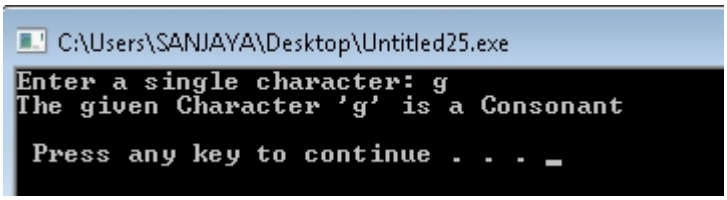
```
#include<stdio.h>
int main() {
   int i, j, mat[10][10], row, col;
   int sum = 0;
   printf("\nEnter the number of Rows : ");
   scanf("%d", &row);
   printf("\nEnter the number of Columns : ");
   scanf("%d", &col);
   //Accept the Elements in m x n Matrix
   for (i = 0; i < row; i++)
 {
      for (j = 0; j < col; j++)
{
         printf("\nEnter the Element a[%d][%d] : ", i, j);
         scanf("%d", &mat[i][j]);
      }
   }
   //Addition of all Diagonal Elements
   for (i = 0; i < row; i++) {
      for (j = 0; j < col; j++) {
         if (i == j)
         sum = sum + mat[i][j];
      }
   }
   printf("\nSum of Diagonal Elements in Matrix : %d\n", sum);
 system("pause");
   return (0);
}
```



45)C Program to find whether the given character is Vowel or Consonant.

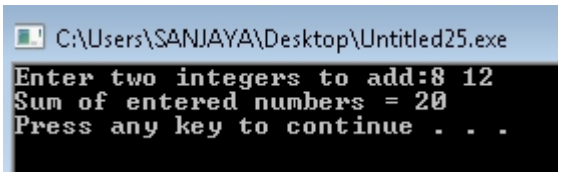
```
#include<stdio.h>
int main()
{
 char ch;
 printf("Enter a single character: ");
 scanf("%c",&ch);

if((ch=='a')||(ch=='e')||(ch=='i')||(ch=='o')||(ch=='u')||(c
h=='A')||(ch=='E')||(ch=='I')||(ch=='O')||(ch=='U'))
 {
  printf("The given Character '%c' is a Vowel\n\n ",ch);
 }
 else
 {
  printf("The given Character '%c' is a Consonant\n\n ",ch);
 }
 system("pause");
return 0;
}
```





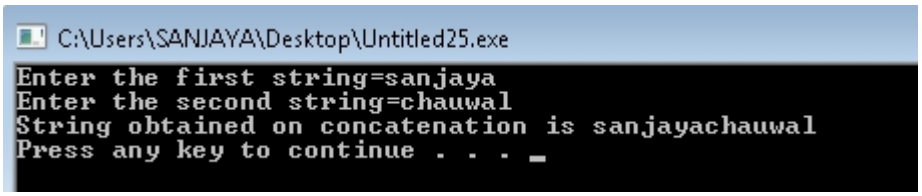
46)C program to add two numbers using pointers

```
#include <stdio.h>

int main()
{
   int first, second, *p, *q, sum;

   printf("Enter two integers to add: ");
   scanf("%d %d", &first, &second);

   p = &first;
   q = &second;

   sum = *p + *q;

   printf("Sum of entered numbers = %d\n",sum);
 system("pause");
   return 0;
}
```



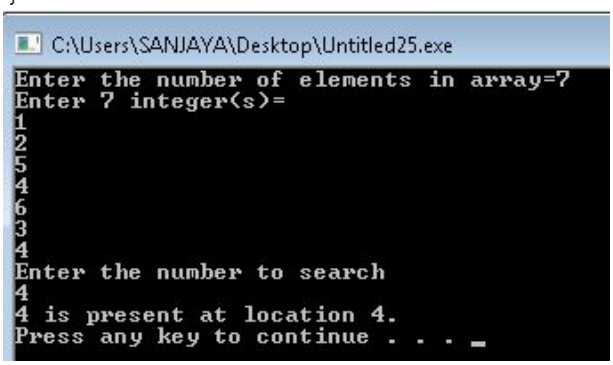
47)C program to concatenate strings

```
#include <stdio.h>
#include <string.h>
int main()
{
   char a[1000], b[1000];
   printf("Enter the first string=");
   gets(a);
   printf("Enter the second string=");
   gets(b);
   strcat(a,b);
   printf("String obtained on concatenation is %s\n",a);
 system("pause");
   return 0;
}
```



48)Linear search in C.

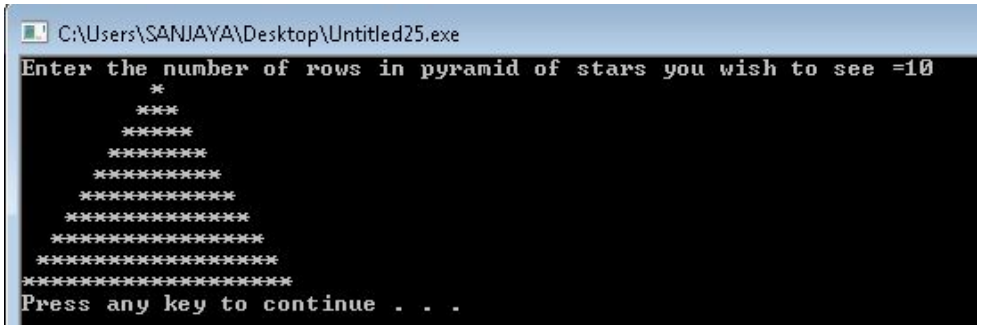
```
#include <stdio.h>
int main()
{
   int array[100], search, c, n;
   printf("Enter the number of elements in array=");
   scanf("%d",&n);
   printf("Enter %d integer(s)=\n",n);
   for (c = 0; c < n; c++)
      scanf("%d", &array[c]);
   printf("Enter the number to search\n");
   scanf("%d", &search);
   for (c = 0; c < n; c++)
   {
      if (array[c] == search)
      {
         printf("%d is present at location %d.\n", search, c+1);
         break;
      }
   }
   if (c == n)
      printf("%d is not present in array.\n", search);
 system("pause");
   return 0;
}
```



49)C program to print patterns of numbers and stars.

```
#include <stdio.h>
int main()
{
  int row,c,n,temp;
```

```
   printf("Enter the number of rows in pyramid of stars you wish
to see =");
   scanf("%d",&n);
   temp = n;
   for (row =1; row<= n ;row++ )
   {
     for (c = 1 ; c < temp ; c++ )
     printf(" ");
      temp--;
      for ( c = 1 ; c <= 2*row - 1 ; c++ )
      printf("*");
      printf("\n");
   }
 system("pause");
   return 0;
```

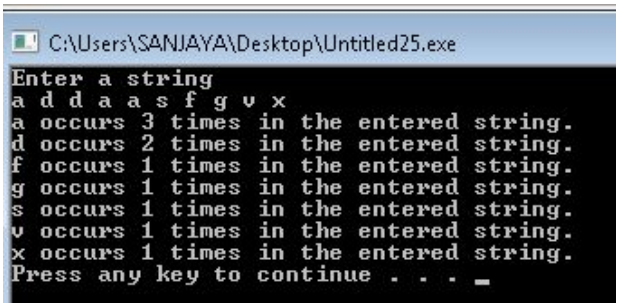


}

50)C program to find frequency of characters in a string

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

int main()
{
   char string[100];
   int c = 0, count[26] = {0};
   printf("Enter a string\n");
   gets(string);
   while (string[c] != '\0')
   {
      if (string[c] >= 'a' && string[c] <= 'z')
         count[string[c]-'a']++;
      c++;
   }
   for (c = 0; c < 26; c++)
   {
      if (count[c] != 0)
         printf("%c occurs %d times in the entered
string.\n",c+'a',count[c]);
   }
 system("pause");
```

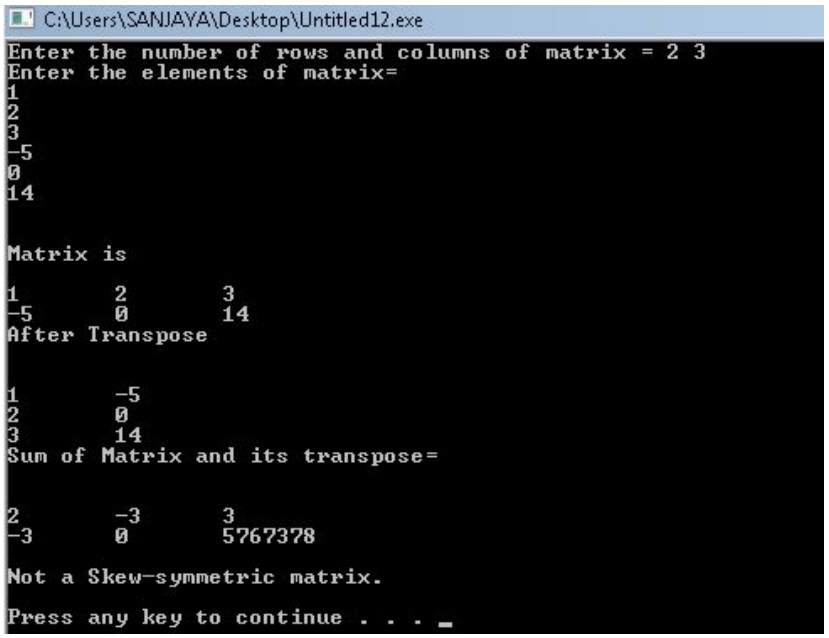
```
   return 0;
}
```



51)WAP to find transpose of matrix,sum of matrix and its transpose and finally find it whether it is skew symmetric or not.

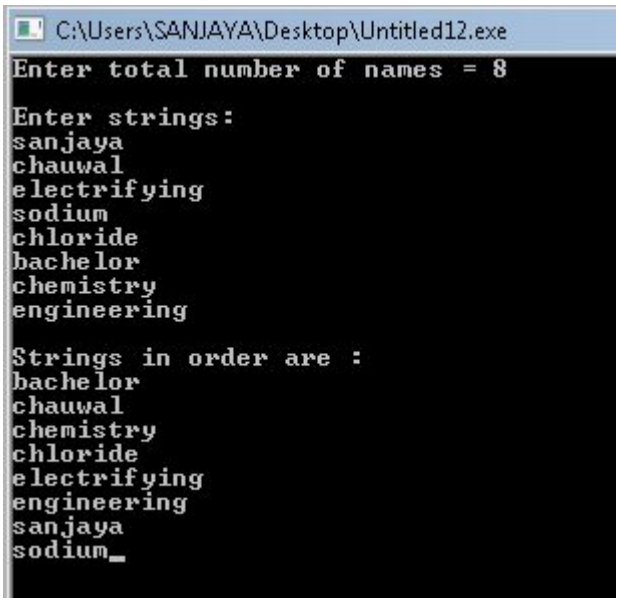
```
#include<stdio.h>
#include<conio.h>
int main()
{
   int m, n, c, d, matrix[10][10],
transpose[10][10],sum[10][10];
   printf("Enter the number of rows and columns of matrix = ");
   scanf("%d %d",&m,&n);
   printf("Enter the elements of matrix=\n");
   for ( c =0;c< m;c++ )
      for (d=0;d<n;d++ )
        scanf("%d",&matrix[c][d]);
        printf("\n\n");
 printf("Matrix is\n\n");
for(c=0;c<m ;c++)
{
for(d=0;d<n ;d++)
{
printf("%d\t",matrix[c][d]);     /* '\t' used for Tab */
}
printf("\n");     /* '\n' used for next line character */
}
   for( c=0;c<m;c++)
   {
      for(d=0 ;d<n;d++)
      {
         transpose[d][c]=matrix[c][d];
      }
   }
 printf("After Transpose\n\n\n");
for(c=0 ; c<n ; c++)
{
```

```
for(d=0 ; d<m ; d++)
{
printf("%d\t",transpose[c][d] );
}
printf("\n");
}
for(c=0;c<m ;c++)
{
for(d=0 ; d<n ; d++)
{
sum[c][d]=matrix[c][d]+transpose[c][d];
}
}
printf("Sum of Matrix and its transpose= \n\n\n");
for(c=0;c<m ;c++)
{
for(d=0;d<n;d++)
{
printf("%d\t" , sum[c][d] );
}
printf("\n");
}
printf("\n");
 if ( m == n ) /* check if order is same */
   {
       for ( c = 0 ; c<m;c++)
       {
           for ( d = 0 ;d<m ;d++)
           {
               if ( matrix[c][d] !=transpose[c][d] )
                 break;
           }
           if ( d != m )
             break;
       }
       if ( c == m )
       printf("Skew-Symmetric matrix.\n\n");
   }
   else
       printf("Not a Skew-symmetric matrix.\n\n");
 system("pause");
 return 0;
}
```



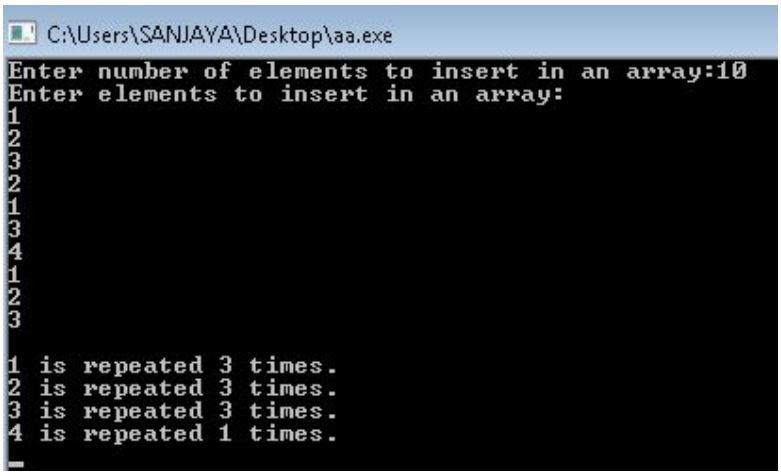
52)WAP to sort the names alphabetically in ascending order.

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

void main() {
   char s[100][50],t[1000],n;
   int i,j;
   printf("Enter total number of names = ");
   scanf("%d",&n);
   printf("\nEnter strings:\n");
   for (i =0;i<n;i++)
      scanf("%s", s[i]);
   for (i =1;i <n; i++) {
      for (j =1; j<n; j++) {
         if (strcmp(s[j - 1], s[j]) > 0) {
            strcpy(t, s[j - 1]);
            strcpy(s[j - 1], s[j]);
            strcpy(s[j], t);
         }
      }
   }
   printf("\nStrings in order are : ");
   for (i =0; i<n; i++)
      printf("\n%s",s[i]);
   getch();
}
```



53)C program to find the frequency of elements in array

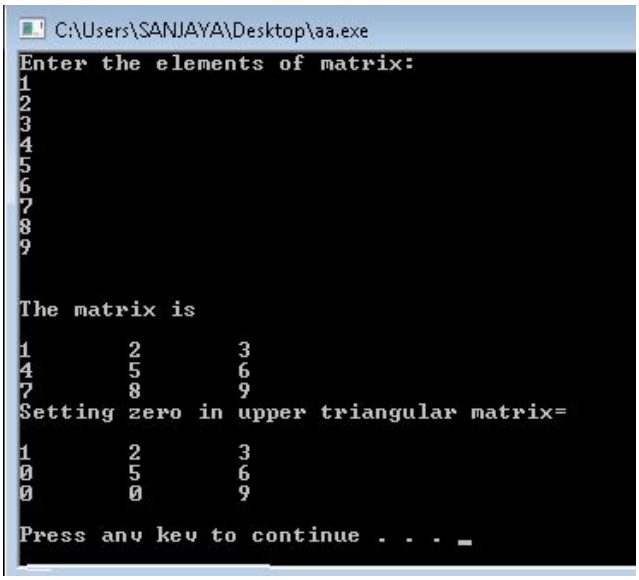
```
#include<stdio.h>
int main()
{
    int n, t, i, j, arr[100],len, halflen,flag=0,count=0;
    printf("Enter number of elements to insert in an array:");
    scanf("%d",&len);
    printf("Enter elements to insert in an array:\n");
    for(i=0;i<len;i++){
        scanf("%d",&t);
        arr[i]=t;
    }
    printf("\n");

       for(i=0;i<len;i++){
        count=1;
        for(j=i+1;j<=len-1;j++){
            if(arr[i]==arr[j] && arr[i]!='\0'){
                count++;
                arr[j]='\0';
            }
        }
        if(arr[i]!='\0'){
            printf("%d is repeated %d times.\n",arr[i],count);
        }
    }
    getch();
    return 0;
}
```



54)C code to print or display Upper triangular matrix.

```
#include<stdio.h>
int main()
{
  int a[3][3],i,j;
  float determinant=0;

  printf("Enter the 9 elements of matrix:\n");
  for(i=0;i<3;i++)
      for(j=0;j<3;j++)
      scanf("%d",&a[i][j]);
printf("\n");
  printf("\nThe matrix is\n");
  for(i=0;i<3;i++){
      printf("\n");
      for(j=0;j<3;j++)
          printf("%d\t",a[i][j]);
  }

   printf("\nSetting zero in upper triangular matrix=");
   printf("\n");
   for(i=0;i<3;i++){
      printf("\n");
      for(j=0;j<3;j++)
          if(i<=j)
            printf("%d\t",a[i][j]);
          else
            printf("%d\t",0);
  }
printf("\n");
printf("\n");
system("pause");
   return 0;
```

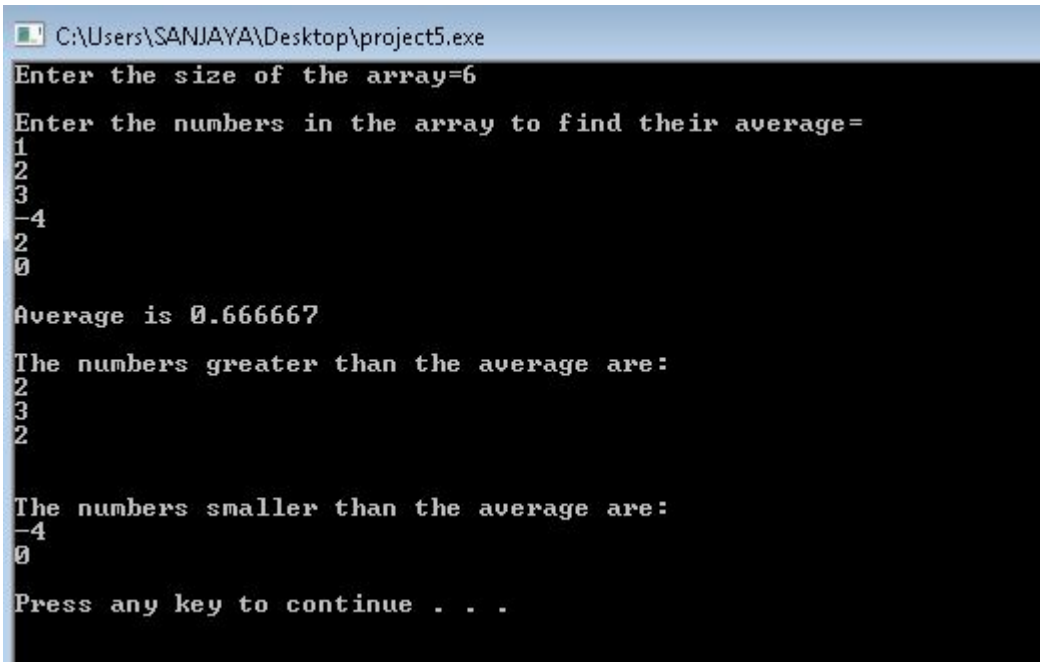
```
}
```



55)**To find the average and numbers greater than average and less than average between two input numbers in an array.**

```
#include <stdio.h>
#include <stdlib.h>
int main()
{
long int ar[90000],n,i;
float avg,sum=0;
printf("Enter the size of the array=");
scanf("%ld",&n);
printf("\n");
printf("Enter the numbers in the array to find their
average=\n");
for(i=0;i<n;i++)
{
scanf("%d",&ar[i]);
sum=sum+ar[i];
}
avg=sum/n;
printf("\n");
printf("Average is %f\n",avg);
printf("\n");
printf("The numbers greater than the average are: \n");
for(i=1;i<n;i++)
{
if(ar[i]>avg)
{
printf("%d\n",ar[i]);
}
```

```
}
printf("\n");
printf("\n");
printf("The numbers smaller than the average are: \n");
for(i=1;i<n;i++)
{
if(ar[i]<avg)
{
printf("%d\n",ar[i]);
}
}
printf("\n");
system("pause");
return(1);
```

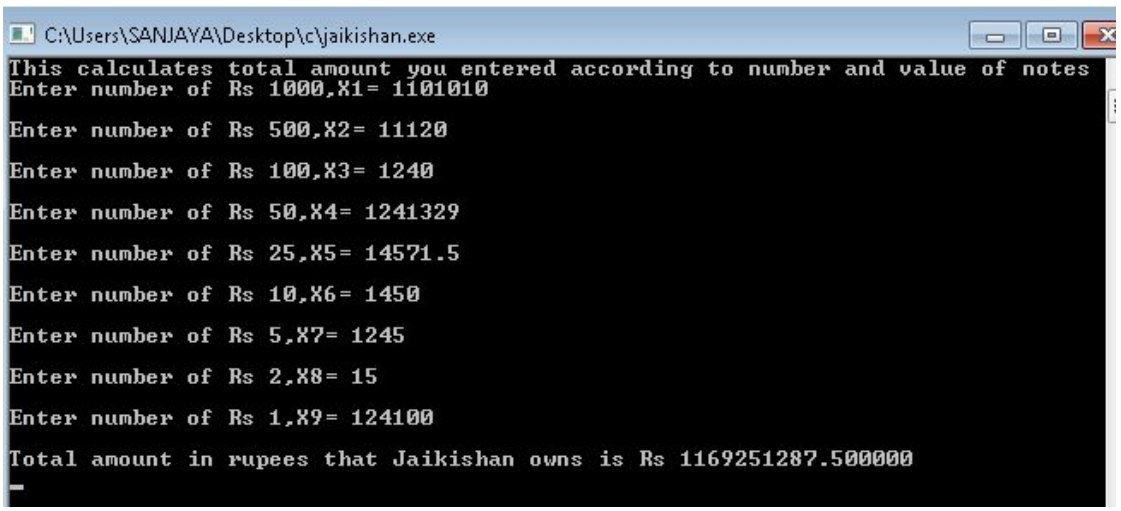



```
}
```

56)To calculate sum of money according to number and value of notes.

```
#include <stdio.h>
int main()
{
double X1,X2,X3,X4,X5,X6,X7,X8,X9,sum;
printf("This calculates total amount you entered according to
number and value of notes");
printf("\n");
printf("Enter number of Rs 1000,X1= ");
scanf("%Lf",&X1);
X1=X1*1000;
printf("\nEnter number of Rs 500,X2= ");
scanf("%Lf",&X2);
X2=X2*500;
printf("\nEnter number of Rs 100,X3= ");
```

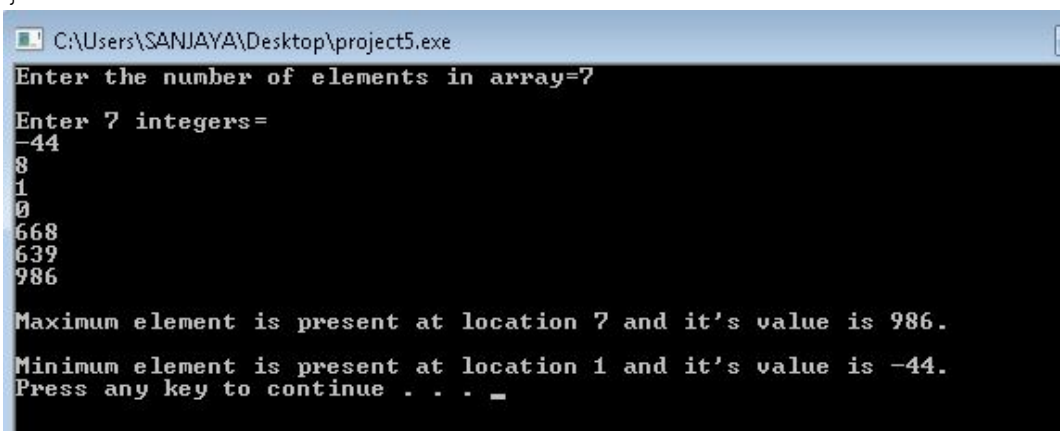
```
scanf("%Lf",&X3);
X3=X3*100;
printf("\nEnter number of Rs 50,X4= ");
scanf("%Lf",&X4);
X4=X4*50;
printf("\nEnter number of Rs 25,X5= ");
scanf("%Lf",&X5);
X5=X5*25;
printf("\nEnter number of Rs 10,X6= ");
scanf("%Lf",&X6);
X6=X6*10;
printf("\nEnter number of Rs 5,X7= ");
scanf("%Lf",&X7);
X7=X7*5;
printf("\nEnter number of Rs 2,X8= ");
scanf("%Lf",&X8);
X7=X7*2;
printf("\nEnter number of Rs 1,X9= ");
scanf("%Lf",&X9);
X7=X7*9;
sum=X1+X2+X3+X4+X5+X6+X7,X8,X9;
printf("\nTotal amount in rupees that Jaikishan owns is Rs
%Lf\n",sum);
scanf("%Lf",&sum);
return(1);
}
```



57)C program to find maximum element and minimum element in array

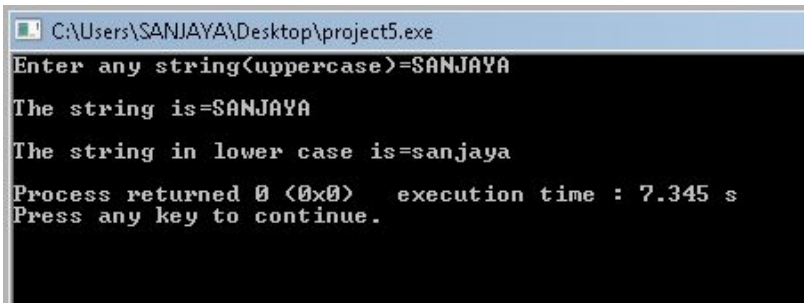
```
#include <stdio.h>
int main()
{
```

```
  int array[100], maximum, size, c, location1 =
1,minimum,location2=1;
  printf("Enter the number of elements in array=");
  scanf("%d", &size);
  printf("\n");
  printf("Enter %d integers=\n", size);
  for (c = 0; c< size; c++)
  scanf("%d", &array[c]);
  maximum = array[0];
  for (c=1;c<size;c++)
  {
    if (array[c] >maximum)
    {
       maximum  = array[c];
       location1 = c+1;
    }
  }
printf("\n");

  printf("Maximum element is present at location %d and it's
value is %d.\n", location1,maximum);
  minimum=array[-0];
   for (c=1;c<size;c++)
  {
    if (array[c]<minimum)
    {
       minimum =array[c];
       location2 = c+1;
    }
}
printf("Minimum element is present at location %d and it's value
is %d.\n", location2,minimum);
  system("pause");
  return 0;
}
```



58)FROM UPPERCASE TO LOWER CASE USING C PROGRAM.

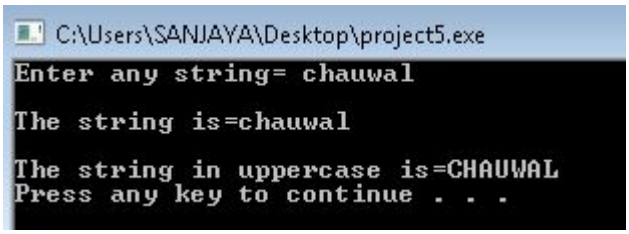
```
#include<stdio.h>
#include<string.h>
int main(){
  char str[20];
  int i;
  printf("Enter any string(uppercase)=");
  scanf("%s",str);
  printf("\n");
  printf("The string is=%s",str);
  for(i=0;i<=strlen(str);i++){
      if(str[i]>=65&&str[i]<=90)
       str[i]=str[i]+32;
  }
  printf("\nThe string in lower case is=%s",str);
printf("\n");
  return 0;
}
```



59)Write a c program to convert the string from lower case to upper case.

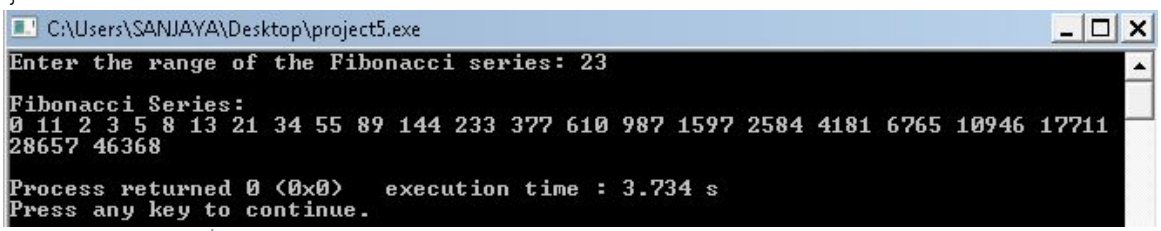
```
#include<stdio.h>
#include <stdlib.h>
int main(){
char str[20];
int i;
printf("Enter any string=");
 scanf("%s",str);
printf("\n");
printf("The string is=%s",str);
for(i=0;i<=strlen(str);i++){
     if(str[i]>=97&&str[i]<=122)
    str[i]=str[i]-32;
     }
printf("\n");
printf("\nThe string in uppercase is=%s",str);
printf("\n");
system("pause");
```

```
return 0;
}
```



60)Fibonacci series in c by using recursion.

```
#include<stdio.h>
void printFibonacci(int);
int main(){
    int k,n;
    long int i=0,j=1,f;
    printf("Enter the range of the Fibonacci series: ");
    scanf("%d",&n);
   printf("\n");
    printf("Fibonacci Series:\n");
    printf("%d %d",0,1);
    printFibonacci(n);
  printf("\n");
    return 0;
}
void printFibonacci(int n)
{
static long int first=0,second=1,sum;
    if(n>0){
         sum = first + second;
         first = second;
         second = sum;
         printf("%ld ",sum);
         printFibonacci(n-1);
    }
}
```



61)Number Pattern

```
#include <stdio.h>
int main()
{
    int i, j;
```

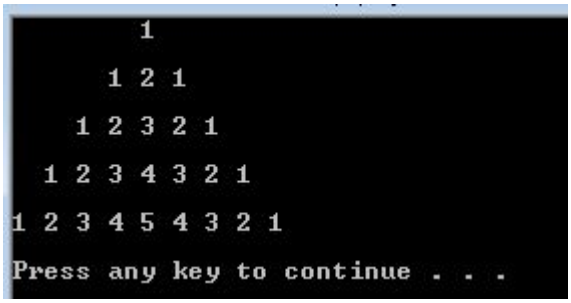
```
    for(i=5;i>=1;i--)
    {
        for(j=5;j>=i;j--)
        {
            printf("%d",j);
        }
        printf("\n\n");
    }
system("pause");
    return 0;
}
```

62)Number Pattern

```
#include <stdio.h>
int main()
{
    int i, j;
    for(i=1;i<=5;i++)
    {
        for(j=1;j<=i;j++)
        {
            printf("%d",i);
        }
        printf("\n\n");
    }
system("pause");
    return 0;
}
```

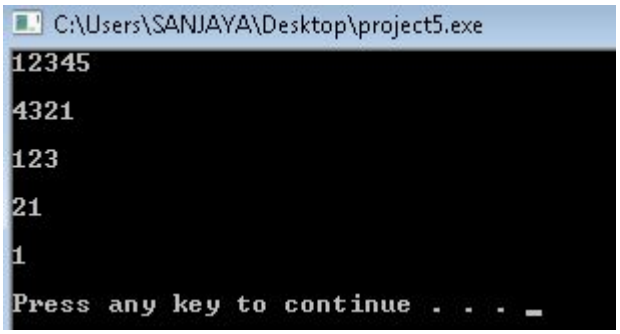
63)Number Pattern

```
int main()
{
    int i, j;
    for(i=1;i<=5;i++)
    {
      for(j=5;j>i;j--)
        printf("  ");
      for(j=1;j<=i;j++)
         printf("%d ",j);
      for(j=j-2;j>=1;j--)
         printf("%d ",j);
      printf("\n");
    }
System("pause");
    return 0;
}
```



64)Number pattern:

```
int main()
{
    int i,j,k;
    for(i=5;i>=1;i--)
    {
        if(i%2==1) k=1;
        else k=i;
        for(j=1;j<=i;j++)
{
            printf("%d",k);
            if(i%2==1) k++;
            else k--;
        }
        printf("\n\n");
    }
    system("pause");
    return 0;
}
```



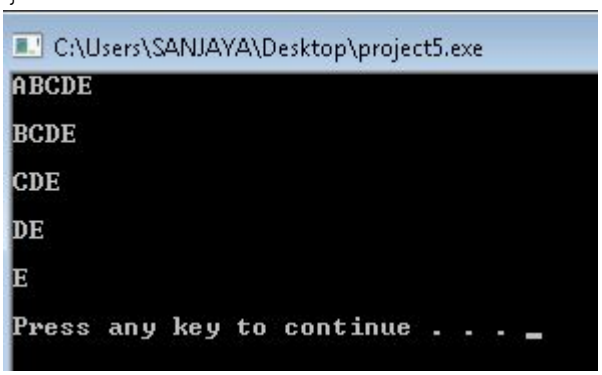
65)

```
#include<stdio.h>
int main()
{
  int i,j,k;
  for(i=1;i<=5;i++)
  {
    for(j=5;j>=1;j--)
    {
      if(j<=i)
        printf("%d",j);
      else
        printf(" ");
    }
    printf("\n\n");
  }
  system("pause");

  return 0;
}
```

66)Alphabet Patterns:

```
#include <stdio.h>
int main()
{
    int i, j;
    for(i=1;i<=5;i++)
```

```
    {
        for(j=i;j<=5;j++)
        {
            printf("%c", 'A'-1 + j);
        }
        printf("\n\n");
    }
system("pause");
    return 0;
}
```

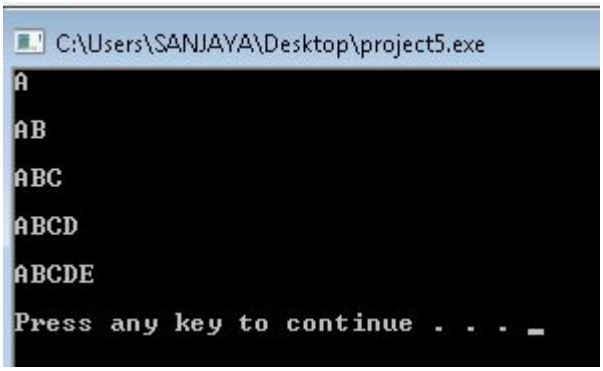


67)

```
#include <stdio.h>

int main()
{
    int i, j;
    for(i=1;i<=5;i++)
    {
        for(j=1;j<=i;j++)
        {
            printf("%c",'A'-1 + i);
        }
        printf("\n\n");
    }
system("pause");
    return 0;
}
```

68)

```
#include <stdio.h>
int main()
{
    int i,j;
    for(i=1;i<=5;i++)
    {
        for(j=1;j<=i;j++)
        {
            printf("%c",'A' + j-1);
        }
        printf("\n\n");
    }
system("pause");
    return 0;
}
```



69)C Program to Store Information of Single Variable

```
#include <stdio.h>
struct student{
    char name[50];
    int roll;
    float marks;
};
int main()
{
    struct student s;
    printf("Enter information of students:\n\n");
    printf("Enter name: ");
    scanf("%s",s.name);
    printf("Enter roll number: ");
    scanf("%d",&s.roll);
    printf("Enter marks: ");
    scanf("%f",&s.marks);
    printf("\nDisplaying Information\n");
    printf("Name: %s\n",s.name);
    printf("Roll: %d\n",s.roll);
```

```
    printf("Marks: %f\n",s.marks);
    system("pause");
    return 0;
}
```

```
Enter information of students:

Enter name: sanjaya
Enter roll number: 639
Enter marks: 90

Displaying Information
Name: sanjaya
Roll: 639
Marks: 90.000000
Press any key to continue . . .
```

70)Using structure:

```
#include <stdio.h>
#include <conio.h>
#include <string.h>
struct details
{
 char name[30];
 int age;
 float salary;
};
int main()
{
 struct details detail;
 printf("\nEnter name: ");
 gets(detail.name);
 printf("\nEnter age:");
 scanf("%d",&detail.age);
 printf("\nEnter Salary:");
 scanf("%f",&detail.salary);
 printf("\n\n\n");
 printf("Name of the Employee : %s \n",detail.name);
 printf("Age of the Employee : %d \n",detail.age);
 printf("Salary of the Employee : %f \n",detail.salary);
getch();
```

```
C:\Users\SANJAYA\Desktop\project5.exe

Enter name: suman basel

Enter age:22

Enter Salary:200000


Name of the Employee : suman basel
Age of the Employee : 22
Salary of the Employee : 200000.000000
```

```
}
```