

**100
MOST
IMPORTANT**

C++

PROGRAMS

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Note: All Above programs are compiled and executed with compiler Dev-c++
5.3.0.4.

1. Write a simple program to print your name, class.

```
#include <iostream>
using namespace std;
int main()
{
    cout << "My name is Bakran Ajas" << endl;
    cout << "Class: 11-B ." << endl;
    return 0;
}
```


2. Write C++ program to calculate sum of two numbers

```
#include<iostream>
using namespace std;
int main()
{
int sum,a,b;
cout<<"Enter value of a:"<<endl;
cin>>a;
cout<<"Enter value of b:"<<endl;
cin>>b;
cout<<"The sum of a and b is "<<(a+b);
return 0;
}
```


3. Write C++ Program to print your name 100 times.

```
#include<iostream>
#include<conio.h>
using namespace std;
int main()
{

    int i;
    for(i=1;i<=100;++i)
        cout<<"Your Name"<<"\n";
    return 0;
}
```


4. Write C++ program to swap two numbers using macros

```
#include<iostream>
#include<conio.h>
#define SWAP(a,b) {int temp; temp=a; a=b; b=temp;}
using namespace std;
int main()
{
    int x,y;
    cout<<"Enter two numbers:";
    cin>>x>>y;
    cout<<"x="<<x<<" y="<<y;
    SWAP(x,y);
    cout<<"\nx="<<x<<" y="<<y;
    return 0;
}
```


5. Write C++ Program To Accept Student Roll No, Marks in 3 Subjects and Calculate Total, Average and Print it.

```
#include <stdio.h>
#include<iostream>
#include <conio.h>
using namespace std;
int main()

{
int r,b,c,d, tot, avg;
cout<<"ENTER STUDENT ROLL NO ; "<<endl;
cin>>r;
cout<<"ENTER FIRST SUBJECT MARKS ;"<<endl;
cin>>b;
cout<<"ENTER SECOND SUBJECT MARKS;"<<endl;
cin>>c;
cout<<"ENTER THIRD SUBJECT MARKS ;"<<endl;
cin>>d;
tot=b+c+d;
avg=tot/3;
cout<<"\n\n\t\t Lovely Professional University \n\n";
cout<<"\t STUDENT RNO : "<<r<<endl;
cout<<"\t FIRST SUBJECT MARKS : "<<b<<endl;
cout<<"\t SECOND SUBJECT MARKS : "<<c<<endl;
cout<<"\t THIRD SUBJECT MARKS : "<<d<<endl;
cout<<"\t AVERAGE MARKS : "<<avg<<endl;
```



```
return 0;
```

```
}
```

6. Write C++ Program to Read Three Numbers And Print The Biggest Of Given Three Numbers

```
#include <stdio.h>
#include<iostream>
#include <conio.h>
using namespace std;
int main( )
{
int a,b,c,big=0;
cout<<"ENTER VALUE FOR A:";
cin>>a;
cout<<"ENTER VALUE FOR B:";
cin>>b;
cout<<"ENTER VALUE FOR C:";
cin>>c;
if (a>big)
big=a ;
if(b>big)
big=b;
if (c>big)
big=c;
cout<<"BIGGEST OF ABOVE GIVEN THREE NUMBER IS "<<big;
return 0;
}
```


7. Write C++ Program to print numeric pyramid

```
#include <stdio.h>
#include<iostream>
#include <conio.h>
using namespace std;
main()
{
    int i,j;
    for(i=1;i<=5;i++)
    {
        for(j=1;j<=i;j++)
        cout<<j;
        cout<<"\n";
    }
    return 0;
}
```


8. Write C++ Program to convert binary number to decimal number

```
#include<iostream>
#include<conio.h>
#include<math.h>
using namespace std;
int main()
{
    unsigned long i,n,num=0,d;
    cout<<"Enter any Binary number:";
    cin>>n;
    cout<<"\n\nThe Decimal conversion of "<<n<<" is ";
    for(i=0;n!=0;++i)
    {
        d=n%10;
        num=(d)*(pow(2,i))+num;
        n=n/10;
    }
    cout<<num;
    return 0;
}
```


9. Write C++ Program to convert a decimal number to binary number

```
#include<iostream>
#include<conio.h>
using namespace std;
int main()
{
    int d,n,i,j,a[50];
    cout<<"Enter a number:";
    cin>>n; cout<<"\nThe binary conversion of "<<n<<" is 1";
    for(i=1;n!=1;++i)
    {
        d=n%2;
        a[i]=d;
        n=n/2;
    }
    for(j=i-1;j>0;--j)
        cout<<a[j];
    return 0;
}
```


10. Write program to display number in hexadecimal form

```
#include <iostream.h>
int main()
{
    int x;
    cout << "Enter an integer:" << endl;
    cin >> x;
    // hex keyword displays a number in hexadecimal form.
    cout << "x=" << hex << x << endl;
    cin.get();
    return 0;
}
```


11. Write a program to swap two numbers using a third variable called temp.

```
#include <iostream.h>

int main()
{
    int a = 40;
    int b = 20;
    int temp;
    cout << "Value of a (before swap): " << a << endl;
    cout << "Value of b (before swap): " << b << endl;
    temp=a;
    a=b;
    b=temp;
    cout << "Value of a (after swap): " << a << endl;
    cout << "Value of b (after swap): " << b << endl;
    return 0;
}
```


12. Write a c++ Program to print ODD numbers from 1 to 10

```
#include <iostream>
using namespace std;
int main( )
{
    int i;
    for (i=1; i<=10; i+=2)
        cout<<i<<" ";
    return 0;
}
```


13. Write a c++ Program to print natural numbers from 1 to 10 in Reverse

```
#include <iostream>
using namespace std;
int main( )
{
    int i;
    for (i=10; i>=1; i--)
        cout<<i<<" ";
    return 0;
}
```


14. Write a c++ Program to accept a string in any case and print it by another case.

```
#include <iostream>
#include<conio.h>
#include<stdio.h>
using namespace std;
int main( )
{
char ch;
cout<<"enter a string :";
while(( ch=getchar( ))!='\n')
{
if(ch>='A' && ch<='Z')
putchar(ch+32);
else
if(ch>='a' && ch<='z')
putchar(ch-32);
else
putchar(ch);
}
cout<<"is the string";
return 0;
}
```


15. Write C++ Program to check whether a given number is perfect or not.

```
#include <stdio.h>
#include<iostream>
#include <conio.h>
using namespace std;
int main( )
{
int i,n,s=0;
cout<<"enter the number";
cin>>n;
for(i=1;i<n/2;i++)
if(n%i==0)
s+=i;
if(s==n)
cout<<"the number is perfect no";
else
cout<<"the number is not perfect ";
return 0;
}
```


16. Write C++ Program to print table of any number

```
#include<iostream>
#include<conio.h>
using namespace std;
int main()
{
    int i,n;
    cout<<"Enter number for which you want to generate table:";
    cin>>n;
    cout<<"\n\n";
    for(i=1;i<=10;++i)
        cout<<"\t"<<n<<"*"<<i<<"="<<n*i<<"\n";
    return 0;
}
```


17. Write C++ Program to read 'n' number and print them in matrix terms in all orders.

```
#include <stdio.h>
#include<iostream>
# include <conio.h>
using namespace std;
int main( )
{
int i,n,c,p,q,r,k,a[20];
cout<<"enter the array size";
cin>>n;
cout<<"enter the elements";
for(i=1;i<=n;i++)
cin>>a[i];
i=1;
while(i<=n)
{
if(n%i==0)
{
r=i;
c=n/i;
k=1;
for(p=1;p<=r;p++)
{
for(q=1;q<=c;q++)
cout<<a[k++];
```



```
cout<<"\n";
```

```
}
```

```
i++;
```

```
return 0;
```

```
}
```

```
}
```

```
}
```


18. Write C++ Program to accept two numbers and print the sum of given two numbers by using pointers

```
#include <stdio.h>
#include<iostream>
#include <conio.h>
using namespace std;
int main( )
{
int a, b,c;
a=10;
b=20;
c=*&a+*&b;
cout<<c;
return 0;
}
```


19. Write a c++ Program to accept a string in upper case and print it by lower case.

```
# include <stdio.h>
# include <conio.h>
# include <iostream>
using namespace std;
int main( )
{
char ch,c;
cout<<"enter a string in upper case:";
while(( ch=getchar( ))!="\n")
{
c=ch+32;
putchar(c);
}
cout<<" is in lower case";
return 0;
}
```


20. Write a c++ Program to accept any single digit number and print it in words.

```
# include <stdio.h>
# include <conio.h>
# include <iostream>
using namespace std;
int main( )
{
int n;
cout<<"enter a number :";
cin>>n;
switch(n)
{
case 0: cout<<"ZERO";
break;
case 1: cout<<"ONE";
break;
case 2: cout<<"TWO";
break;
case 3: cout<<"THREE";
break;
case 4: cout<<"FOUR";
break;
case 5: cout<<"FIVE";
break;
case 6: cout<<"SIX";
```

```
break;
case 7: cout<<"SEVEN";
break;
case 8: cout<<"EIGHT";
break;
case 9: cout<<"NINE";
break;
default:
cout<<"please enter the number between 0 and 9";
}
return 0;
}
```


21. Write C++ program to reverse a number

```
#include<iostream>
#include<conio.h>
using namespace std;
int main()
{
    long n,rev=0,d;
    cout<<"Enter the number:";
    cin>>n;
    while(n!=0)
    {
        d=n%10;
        rev=(rev*10)+d;
        n=n/10;
    }
    cout<<"The reversed number is "<<rev;
    return 0;
}
```


22. Write C++ program to find largest number of a list of numbers entered through keyboard

```
#include<iostream>
#include<conio.h>
using namespace std;
int main()
{
    int i,n,x,large=0;
    cout<<"How many numbers?";
    cin>>n;
    for(i=0;i<n;++i)
    {
        cout<<"\nEnter number "<<i+1<<":";
        cin>>x;
        if(x>large)
            large=x;
    }
    cout<<"\n\nThe largest number is "<<large;
    return 0;
}
```


23. Write C++ Program to calculate and print the sum of even and odd integers of the first n natural numbers.

```
#include<iostream>
#include<conio.h>
using namespace std;
int main()
{
    int n,i,sumeven=0,sumodd=0;
    cout<<"Enter value of n:";
    cin>>n;
    for(i=1;i<=n;++i)
    {
        if(i%2==0)
            sumeven+=i;
        else
            sumodd+=i;
    }
    cout<<"\nSum of even Numbers is "<<sumeven;
    cout<<"\nSUM of odd Numbers is "<<sumodd;
    return 0;
}
```


24. Write C++ Program to find area of a triangle when there sides are given.

```
#include <stdio.h>
#include<iostream>
# include <conio.h>
#include<math.h>
using namespace std;
int main( )
{
int a,b,c;
float s, area;
cout<<"enter there sides of the triangle";
cin>>a>>b>>c;
if((a+b)<c || (b+c)<a || (a+c)<b)
cout<<"finding area is not possible";
else
s=(a+b+c)/2;
area=sqrt(s*(s-a)*(s-b)*(s-c));
cout<<"area="<<area;
return 0;
}
```


25. Write C++ Program to find whether a number is divisible by '11' or not without actual division.

```
#include<stdio.h>
#include<conio.h>
#include<iostream>
#include<math.h>
using namespace std;
int main( )
{
int a,b,n,evensum=0,oddsum=0,div;
cout<<"enter a number";
cin>>n;
a=n;
b=n/10;
while(a>0)
{
oddsum=oddsum+(a%10);
a=a/10;
}
while(b>0)
{
evensum=evensum+(b%10);
b=b/10;
}
div=abs(evensum-oddsum);
if(div%11==0)
```

```
cout<<"The number is divisible by 11";  
else  
cout<<"The number is not divisible by 11";  
return 0; }
```

26. Write C++ Program to check whether a number is prime number or not

```
#include<iostream>
#include<conio.h>
using namespace std;
int main()
{
    int n,i,flag=1;
    cout<<"Enter any number:";
    cin>>n;
    for(i=2;i<=n/2;++i)
    {
        if(n%i==0)
        {
            flag=0;
            break;
        }
    }
    if(flag)
        cout<<"\n"<<n<<" is a Prime number";
    else
        cout<<"\n"<<n<<" is not a Prime number";
    return 0;
}
```


27. Write C++ Program to print following series using function: $x + x^3/3! + x^5/5! + \dots + x^n/n!$

```
#include<iostream>
#include<conio.h>
using namespace std;
int main()
{
    int x,n;
    double sum(int,int);
    double res;
    cout<<"x + x^3/3! + x^5/5! +.....+ x^n/n!";
    cout<<"\n\nEnter value of x and n:";
    cin>>x>>n;
    res=sum(x,n);
    cout<<"\nSum of series is "<<res;
    getch();
}
double sum(int a,int b)
{
    long power(int,int);
    int i,j;
    double s=0,fac=1;
    long p;
    for(i=1;i<=b;i+=2)
    {
        p=power(a,i);
```

```
    for(j=1;j<=i;++j)
    {
        fac*=j;
    }
    s+=p/fac;
    fac=1;
}
return(s);
}
long power(int x,int i)
{
    long res=1,j;
    for(j=1;j<=i;++j)
    {
        res*=x;
    }
    return(res);
}
```


28. Write C++ program to find sum of series $1 + 2 + 3 + \dots + n$

```
#include<iostream>
#include<conio.h>
using namespace std;
int main()
{
    int i,n,sum=0;
    cout<<"1+2+3+.....+n";
    cout<<"\nEnter the value of n:";
    cin>>n;
    for(i=1;i<=n;++i)
        sum+=i;
    cout<<"\nSum="<<sum;
    return 0;
}
```


29. Write C++ program to find sum of series
 $1/2 + 4/5 + 7/8 + \dots$

```
#include<iostream>
#include<conio.h>
using namespace std;
int main()
{
    int i,n;
    float sum=0,x,a=1;
    cout<<"1/2+4/5+7/8+.....";
    cout<<"\n\nHow many terms(ex: 1,2,3...n)?";
    cin>>n;

    for(i=0;i<n;++i)
    {
        x=a/(a+1);
        sum+=x;
        a+=3;
    }
    cout<<"\nSum="<<sum;
    return 0;
}
```


30. Write C++ program to find sum of series
 $1+x+x^2+\dots+x^n$

```
#include<iostream>
#include<conio.h>
#include<math.h>
using namespace std;
int main()
{
    long i,n,x,sum=1;
    cout<<"1+x+x^2+.....+x^n";
    cout<<"\n\nEnter the value of x and n:";
    cin>>x>>n;
    for(i=1;i<=n;++i)
        sum+=pow(x,i);
    cout<<"\nSum="<<sum;
    return 0;
}
```


31. Write C++ program to find sum of series
 $1^2+3^2+5^2+\dots+n^2$.

```
#include<iostream>
#include<conio.h>
using namespace std;
int main()
{
    int n,i;
    long sum=0;
    cout<<"1^2+3^2+5^2+.....+n^2\n\n Enter Value of n:";
    cin>>n;
    for(i=1;i<=n;i+=2)
        sum+=(i*i);
    cout<<"\n Sum of given series is "<<sum;
    return 0;
}
```


32. Write C++ Program to print given series: 1 2 4 8 16 32 64 128

```
#include<iostream>
#include<conio.h>
using namespace std;
int main()
{
    int i;
    for(i=1;i<=128;i*=2)
        cout<<i<<" ";
    return 0;
}
```


33. Write C++ Program to Print following series: 1 -4 7 -10.....-40

```
#include<iostream>
#include<conio.h>
using namespace std;
int main()
{
    int i,a=-1,b;
    for(i=1;i<=40;i+=3)
    {
        a*=-1;
        b=i;
        b*=a;
        cout<<b<<" ";
    }
    return 0;
}
```


34. Write C++ program to swap values of two variables using pass by reference method

```
#include<iostream>
#include<conio.h>
using namespace std;
int main()
{
    int a,b;
    void swap(int &,int &);
    cout<<"Enter two values:";
    cin>>a>>b;
    cout<<"\nBefor swapping:\na="<<a<<"\tb="<<b;
    swap(a,b);
    cout<<"\n\nAfter swapping:\na="<<a<<"\tb="<<b;
    return 0;
}

void swap(int & x,int & y)
{
    int temp;
    temp=x;
    x=y;
    y=temp;
}
```


35. Write C++ program to print truth table of $XY+Z$.

```
#include<iostream>
#include<conio.h>
using namespace std;
int main()
{
    int x,y,z;
    cout<<"X\tY\tZ\tXY+Z";
    for(x=0;x<=1;++x)
    for(y=0;y<=1;++y)
    for(z=0;z<=1;++z)
    {
        if(x*y+z==2)
            cout<<"\n\n"<<x<<"\t"<<y<<"\t"<<z<<"\t1";
        else
            cout<<"\n\n"<<x<<"\t"<<y<<"\t"<<z<<"\t"
<<x*y+z;
    }
    return 0;
}
```


36. Write C++ Program to find First three Pythagorean Triplet.

```
#include<iostream>
#include<conio.h>
using namespace std;
int main()
{
    int x,y,z;
    cout<<"X\tY\tZ\tXY+Z";
    for(x=0;x<=1;++x)
    for(y=0;y<=1;++y)
    for(z=0;z<=1;++z)
    {
        if(x*y+z==2)
            cout<<"\n\n"<<x<<"\t"<<y<<"\t"<<z<<"\t1";
        else
            cout<<"\n\n"<<x<<"\t"<<y<<"\t"<<z<<"\t"
<<x*y+z;
    }
    return 0;
}
```



```
        break;
    case '5': a[5]++;
        break;
    case '6': a[6]++;
        break;
    case '7': a[7]++;
        break;
    case '8': a[8]++;
        break;
    case '9': a[9]++;
        break;
}
i++;
}
```

```
for(i=0;i<10;i++)
{
    if(a[i]>1)
    {
        flag=0;
        break;
    }
}
```

```
if(flag)
    cout<<"\nNumber is Unique";
else
```

```
cout<<"\nNumber is Not Unique";
```

```
return 0;
```

```
}
```

38. Write a program to swap two numbers without using a third variable

```
#include <iostream.h>

int main()
{
    int a = 80;
    int b = 20;
    cout << "Value of a (before swap): " << a << endl;
    cout << "Value of b (before swap): " << b << endl;
    a = a + b;
    b = a - b;
    a = a - b;
    cout << "Value of a (after swap): " << a << endl;
    cout << "Value of b (after swap): " << b << endl;
    cin.get();
    return 0;
}
```


39. Write C++ program to calculate area of a circle, a rectangle or a triangle depending upon user's choice

```
#include<iostream>
#include<conio.h>
#include<math.h>
using namespace std;
int main()
{
    float a,b,c,s,r,area;
    int ch;
    cout<<"***Menu***\n1.Area of circle\n2.Area of Rectangle";
    cout<<"\n3.Area of triangle\nEnter your choice:";
    cin>>ch;

    switch(ch)
    {
        case 1:
        {
            cout<<"\nEnter radius of the circle:";
            cin>>r;
            area=3.14*r*r;
            break;
        }
        case 2:
        {
            cout<<"\nEnter length and breadth:";
```



```

        cin>>a>>b;
        area=a*b;
        break;
    }
    case 3:
    {
        cout<<"\nEnter three sides of the triangle:";
        cin>>a>>b>>c;
        s=(a+b+c)/2;
        area=sqrt(s*(s-a)*(s-b)*(s-c));
        break;
    }
    default: cout<<"\nWrong choice...!!!";
            break;
}

cout<<"Area="<<area;
return 0;
}

```


40. Write C++ Program to perform all arithmetic calculation using switch case

```
#include<iostream>
#include<conio.h>
using namespace std;
int main()
{

    float a,b,res;
    int ch,q;
    cout<<"Arithmetic Operatios";
    cout<<"\n\n1.Addition\n2.Subtraction\n3.Multiplication\n4.Division\n5.Λ";
    cout<<"\n  Enter your choice:";
    cin>>ch;

    switch(ch)
    {
    case 1:
    {
        cout<<"\n\nEnter two variables:";
        cin>>a>>b;
        res=a+b;
        cout<<"\n  Result="<<res;
    }
    break;
```

case 2:

```
{  
    cout<<"\n\nEnter two variables:";  
    cin>>a>>b;  
    res=a-b;  
    cout<<"\n  Result="<<res;  
}  
break;
```

case 3:

```
{  
    cout<<"\n\nEnter two variables:";  
    cin>>a>>b;  
    res=a*b;  
    cout<<"\n  Result="<<res;  
}  
break;
```

case 4:

```
{  
    cout<<"\n\nEnter two variables:";  
    cin>>a>>b;  
    if(a>=b)  
    {  
        res=a/b;  
        cout<<"\n  Result="<<res;  
    }  
}
```

```

else
    cout<<"\n\n\t1st variable should be greater than 2nd.!!!";
}
break;

case 5:
{
    cout<<"\n\nEnter two variables:";
    cin>>a>>b;
    if(a>=b)
    {
        q=a/b;
        res=a-(b*q);
        cout<<"\n Result="<<res;
    }
    else
        cout<<"\n\n\t1st variable should be greater than 2nd..!!!";
    }
    break;
}

return 0;
}

```


41. Write C++ Program to do arithmetic operations according to user choice using switch case

```
#include<iostream>
#include<conio.h>
using namespace std;
int main()
{
    int a,b;
    char c;
    cout<<"Enter any expression(ex:3*7):";
    cin>>a>>c>>b;

    switch(c)
    {
        case'+': cout<<"\nResult:"<<a+b;
        break;

        case'-': cout<<"\nResult:"<<a-b;
        break;

        case'*': cout<<"\nResult:"<<a*b;
        break;

        case'/': cout<<"\nResult:"<<a/b;
        break;
```

```
case'%': cout<<"\nResult:"<<a%b;  
break;  
}  
return 0; }
```


42. Write a program to check given number is multiple of number entered by user.

```
//lets say given number is 78.
#include <iostream.h>
int main()
{
    int check_num;
    int num=78;
    cout << Enter an integer:";
    cin >> check_num;

    // use % operator to check remainder
    if(check_num%78)
        cout<<num<<"is not multiple of "<<check_num<<endl;
    else
        cout<<num<<"is multiple of "<<check_num<<endl;

    return 0;
}
```


43. Write a program to check given year is leap or not.

```
//conditions for leap year are as follows
// leap years occur in years exactly divisible by four,
// except that years ending in 00 are leap years
// only if they are divisible by 400.
#include <iostream.h>
#include <conio.h>
int main()
{
    int year;
    cout << "Enter a year (e.g. 2004): ";
    cin >> year;
    if ((year % 400 == 0) || ((year % 100 != 0) && (year % 4 == 0)))
        cout << "The year " << year << " is a leap year" << endl;
    else
        cout << "The year " << year << " is NOT a leap year" << endl;
    getch();
    return 0;
}
```


44. Write a program to convert gallons to liters.

```
#include <iostream.h>

int main()
{
    float gallons, liters;
    cout << "Enter number of gallons: ";
    cin >> gallons; // Read the inputs from the user
    liters = gallons * 3.7854; // convert to liters
    cout << "Liters: " << liters << endl;
    return 0;
}
```


45. Write a C++ program to find the sum of individual digits of a positive integer.

```
#include<iostream.h>
#include<conio.h>
int main()
{
    int num, reminder, sum=0;
    cout<<"Enter the required number:";
    cin>>num;
    while(num>0)
    {
        reminder=num%10;
        sum=sum+reminder;
        num=num/10;
    }
    cout<<"Sum of individual digits of a positive integer is:"<< sum;
    return 0;
}
```


46. Write a C++ program to the number count of letters in a given text.

```
#include<iostream>
#include<conio.h>
#include<stdio.h>
using namespace std;
int main( )
{
char str[80];
int i, c1=0,c2=0;
cout<<"Enter the text:";
gets(str);
for(i=0; str[i]!='\0'; i++)
{
c1++;
if(str[i]==' ')
c2;
}
cout<<"Total Letters present in the given text :"<< c1-c2;
return 0;
}
```


47. Write a C++ program to sort a list of numbers in ascending order.

```
#include<iostream>
#include<conio.h>
using namespace std;
int main( )
{
int a[10], n, i, j, temp;
cout<<"Enter the no. of elements:";
cin>> n;
cout<<"Enter the array elements:";
for(i=0; i< n; i++)
cin>>a[i];
for( i=0; i< n; i++)
{
for(j=i; j< n-1; j++)
{
if(a[i]> a[j+1] )
{
temp= a[i];
a[i]= a[j+1];
a[j+1]= temp;
}
}
}
cout<<"Elements after sorting:";
```

```
for( i=0; i< n; i++)  
cout<< a[i]<<" ";  
return 0;  
}
```

48. Write a C++ program to find both the largest and smallest number in a array of integers.

```
#include<iostream>
#include<conio.h>
using namespace std;
int main()
{
int a[100], max, min, i, n;
cout<<"Enter number elements in the array? :";
cin>>n;
for( i=0; i< n ; i++)
{
cout<<"Enter the numbers: ";
cin>>a[ i ];
if(i==0)
{ max=a[i ];
  min=a[i ]; }
if(a[ i]>max)
max= a[i ];
if(a[i ]< min)
min= a[i ];
}
cout<<"Maximum : "<< max<<endl;
cout<<"Minimum : "<< min;
getch( );
}
```


49. Write a program to find the largest of two numbers.

```
#include <iostream>
using namespace std;
int main()
{
    int a, b;
    cout << "Enter first number: ";
    cin >> a;
    cout << "Enter second number: ";
    cin >> b;
    if(a < b)
        cout << "First number is less than second.\n";
    return 0;
}
```


50. Write a program to generate square root of 1 to 10.

```
#include <iostream>
#include <math.h>
using namespace std;
int main()
{
    int num;
    double sqroot;
    for(num=1; num < 10; num++) {
        sqroot = sqrt((double) num); //casting num from integer to double

        cout << num << " " << sqroot << "\n";
    }
    return 0;
}
```


51. Write a program to find out entered number.

```
#include <iostream>
using namespace std;
int main()
{
    int choice;
    cout << "Enter an integer number: 1 - 5 " ;
    cin >> choice;
    switch (choice)
    {
        case 1:
            cout << "You entered 1.";
            break;
        case 2:
            cout << "You entered 2.";
            break;
        case 3:
            cout << "You entered 3.";
            break;
        case 4:
            cout << "You entered 4.";
            break;
        case 5:
            cout << "You entered 5.";
            break;
        default:
```

```
        cout << "Invalid input.";
    }

    return 0; }
```

52. Write a program to calculate GCD of two numbers.

```
#include<iostream>
using namespace std;
int gcd (int, int); //func. declaration.
int main( )
{
    int a, b, ans;
    cout<<"Enter the two integer values:";
    cin>> a >>b;
    ans= gcd(a, b); // calling function.
    cout<<"GCD for given numbers is :" << ans;
    return 0;
}
int gcd( int x, int y) //called function.
{
    int z;
    z=x%y;
    if(z==0)
        return y;
    gcd(y,z); //recursive function
}
```


53. Write a program to calculate factorial of a number.

```
#include<iostream>
using namespace std;
int fact( int); // function declaration
int main( )
{
    int num,result;
    cout<<"Enter the required number:";
    cin>>num;
    result = fact( num);
    cout<<"Factorial is :" << result;
    return 0;
}
int fact(int n)
{
    int ft;
    for( ft=1; n>=1; n--)
        ft=ft*n;
    return ft;
}
```


54. Write a C++ program to generate all the prime numbers between 1 to n, where n is a value supplied by the user.

```
#include<iostream>
#include<conio.h>
using namespace std;
int main( )
{
int n, x, flag,ct;

cout<<"Enter the n value:";
cin>> n;
cout<<"Prime Numbers:";
for( ct=1; ct<=n; ct++)
{
x=2; flag=0;
while(x<=ct/2)
{
if(ct%x==0) { flag=1; break; }
x++;
}
if(flag==0)
cout<< ct<<" ";
}
return 0;
}
```


55. Write a C++ program to generate the first n terms of the sequence.

```
#include<iostream>
#include<conio.h>
using namespace std;
int main( )
{
int frst=0, sec=1, t, n, ct;
cout<<"Enter the no. of terms:";
cin>>n;
cout<<"Fibonacci series:";
cout<< frst <<" "<< sec<<" ";
for( ct=3; ct<=n; ct++)
{
t=frst+sec;
cout<< t<<" ";
frst=sec;
sec=t;
}
return 0;
}
```


56. Write a C++ program to sort a list of names in ascending order.

```
#include<iostream>
#include<conio.h>
#include<stdio.h>
#include<string.h>
using namespace std;
int main()
{
char st[10][10],temp[10];
int i, j, n;
cout<<"Enter the no. of names:";
cin>>n;
cout<<"Enter the different names:";
for(i=0; i< n; i++)
cin>>st[i];
for(i=0; i< n; i++)
{
for(j=i; j< n-1; j++)
{
if(strcmp(st[i], st[j+1]) >0)
{
strcpy(temp,st[i]);
strcpy(st[i],st[j+1]);
strcpy(st[j+1],temp);
}
}
```

```
}  
}  
cout<<"Given names after ascending order:";  
for(i=0;i<5;i++)  
cout<< st[i] <<" ";  
return 0;  
}
```


57. Write a program to find absolute value of the integer.

```
#include <iostream>
using namespace std;
int main()
{
    int number;
    int abs_number;
    cout << "Enter an integer (positive or negative): ";
    cin >> number;
    if(number >= 0)
    {
        abs_number = number;
    }
    else
        abs_number = -number;
    cout << "The absolute value of " << number << " is " << abs_number;
    cout << endl;
    return 0;
}
```


58. Write a program for addition of 2 matrices.

```
#include<iostream>
using namespace std;
main()
{
    int m, n, c, d, first[10][10], second[10][10], sum[10][10];
    cout << "Enter the number of rows and columns of matrix ";
    cin >> m >> n;
    cout << "Enter the elements of first matrix\n";
    for ( c = 0 ; c < m ; c++ )
        for ( d = 0 ; d < n ; d++ )
            cin >> first[c][d];
    cout << "Enter the elements of second matrix\n";
    for ( c = 0 ; c < m ; c++ )
        for ( d = 0 ; d < n ; d++ )
            cin >> second[c][d];
    for ( c = 0 ; c < m ; c++ )
        for ( d = 0 ; d < n ; d++ )
            sum[c][d] = first[c][d] + second[c][d];
    cout << "Sum of entered matrices:-\n";
    for ( c = 0 ; c < m ; c++ )
    {
        for ( d = 0 ; d < n ; d++ )
            cout << sum[c][d] << "\t";
        cout << endl;
    }
}
```

```
    }  
    return 0;  
}
```

59. Write a program to find average of number three numbers

```
#include<iostream>
#include<conio.h>
using namespace std;
int main()
{
int a,b,c,d;
cout<<"Enter the first no. "<<endl;
cin>>a;
cout<<"Enter the second no. "<<endl;
cin>>b;
cout<<"Enter the third no. "<<endl;
cin>>c;
d=(a+b+c)/3 ;
cout<<"The average of the 3 numbers is"<<d<<endl;
return 0;
}
```


60. Write a program to check whether given string is palindrome or not

```
#include<iostream>
#include<conio.h>
using namespace std;
int main()
{
    int i,j,len,flag=1;
    char a[20];
    cout<<"Enter a string:";
    cin>>a;
    for(len=0;a[len]!='\0';++len);
    for(i=0,j=len-1;i<len/2;++i,--j)
    {
        if(a[j]!=a[i])
            flag=0;
    }
    if(flag==1)
        cout<<"\nThe string is Palindrome";
    else
        cout<<"\nThe string is not Palindrome";
    return 0;
}
```


61. Write a program to Print ASCII value of Digits, Uppercase and Lowercase alphabates.

```
#include<conio.h>
#include<iostream>
#include<dos.h>
#include<process.h>
using namespace std;
int main()
{
    char ch,a[]={"I just love to Learn Programming "};
    int j=0;
    cout<<"Uppercase Alphabates\n\n";
    for(int i=65;i<91;++i)
    {
        j++;
        ch=i;
        cout<<ch<<":"<<i<<"\t";
        if(j==10)
        {
            cout<<"\n";
            j=0;
        }
    }
    j=0;
    cout<<"\n\nLowercase Alphabates\n\n";
    for(int i=97;i<123;++i)
```



```

{
    j++;
    ch=i;
    cout<<ch<<":"<<i<<"\t";
    if(j==10)
    {
        cout<<"\n";
        j=0;
    }
}
cout<<"\n\n\nDigits\n\n";
for(int i=48;i<58;i++)
{
    ch=i;
    cout<<ch<<":"<<i<<"\t";
}
cout<<"\n\n\n\n\t\t";
for(int i=0;a[i]!='\0';++i)
{
    cout<<a[i];

}
return 0;
}

```


62. Write a C++ Program to raise any number x to a positive power n.

```
#include<iostream>
#include<conio.h>
#include<math.h>          //for pow() function
using namespace std;
int main()
{
    int x,n,res;
    cout<<"Enter value of x and n:";
    cin>>x>>n;
    res=pow(x,n);
    cout<<"\nResult="<<res;
    return 0;
}
```


63. Write a C++ Program to convert given inches into equivalent yard, feet and inches.

```
#include<iostream>
#include<conio.h>
using namespace std;
int main()
{
    int y,f,i;
    cout<<"Enter inches:";
    cin>>i;
    y=i/432;
    i=i%432;
    f=i/12;
    i=i%12;
    cout<<"Yard="<<y<<"\nFeet="<<f<<"\nInches="<<i;
    return 0;
}
```


64. Write a C++ Program to Find ASCII value of a character.

```
#include<iostream>
#include<conio.h>
using namespace std;
int main()
{
    char ch,c;
    int cha;
    cout<<"Enter a character:";
    cin>>ch;
    cha=ch;
    cout<<"\nASCII value of "<<ch<<" is "<<cha;
    return 0;
}
```


65. Write C++ Program to reverse all the strings stored in an array

```
#include<iostream>
#include<conio.h>
#include<string.h>
#include<stdio.h>
using namespace std;
int main()
{
    char a[3][50];
    int i,j,k,len;
    cout<<"Enter 3 strings:\n";
    for(i=0;i<3;i++)
    {
        gets(a[i]);
    }
    cout<<"\nThe list of original strings:\n" ;
    for(i=0;i<3;i++)
    {
        cout<<a[i]<<"\n";
    }
    cout<<"\nThe list of changed string:\n";

    for(i=0;i<3;i++)
    {
        len=strlen(a[i]);
```

```
for(j=0,k=len-1;k>=0;j++,k--)  
{  
    cout<<a[i][k];  
}  
cout<<"\n";  
}  
return 0;  
}
```


66. Write C++ Program to concatenate two strings

```
#include<iostream>
#include<conio.h>
#include<stdio.h>
using namespace std;
int main()
{
    char str1[30],str2[30],str3[60];
    int i,j;
    cout<<"Enter first string:";
    gets(str1);
    cout<<"\nEnter second string:";
    gets(str2);
    for(i=0;str1[i]!='\0';++i)
        str3[i]=str1[i];
    for(j=0;str2[j]!='\0';++j)
        str3[i+j]=str2[j];
    str3[i+j]='\0';
    cout<<"\nThe concatenate string is "<<str3;
    return 0;
}
```


67. Write C++ Program to convert first alphabet of every word in a string from lowercase to uppercase.

```
#include<iostream>
#include<conio.h>
#include<stdio.h>
#include<ctype.h>
using namespace std;
int main()
{
    char a[50];
    int i;
    cout<<"Enter a string:";
    gets(a);
    cout<<"\n";
    if(islower(a[0]))
    a[0]=toupper(a[0]);
    for(i=0;a[i]!='\0';++i)
    {
        if(a[i]==' ')
            if(islower(a[i+1]))
                a[i+1]=toupper(a[i+1]);
    }
    cout<<"The new string is:"<<a;
    return 0;
}
```


68. Write C++ Program to reverse a string.

```
#include<iostream>
#include<conio.h>
#include<stdio.h>
using namespace std;
int main()
{
    char a[20],a1[20];
    int i,j;
    cout<<"Enter any String:"<<"\n";
    gets(a);  cout<<"Reverse of the string is: ";
    for(i=0;a[i]!='\0';++i);
    for(j=i-1;j>=0;--j)
        cout<<a[j];
    return 0;
}
```


69. Write C++ Program to find length of a string.

```
#include<iostream>
#include<conio.h>
#include<stdio.h>
using namespace std;
int main()
{
    char a[30];
    int i;
    cout<<"Enter a string:";
    gets(a);
    for(i=0;a[i]!='\0';++i);
    cout<<"\nLenth of the sting "<<a<<" is "<<i;
    return 0;
}
```


70. Write C++ Program to Find Substring in String (Pattern Matching)

```
#include<iostream>
#include<cstdlib>
using namespace std;
int main()
{
    int i,j,temp;
    char str[100]={"This is a pattern matching"};
    char substr[20]={"pattern"};
    for(i=0;str[i]!='\0';i++)
    {
        j=0;
        if(str[i]==substr[j])
        {
            temp=i+1;
            while(str[i]==substr[j])
            {
                i++;
                j++;
            }

            if(substr[j]=='\0')
            {
                cout<<"The substring is present in given string at position "
```

```
<<temp<<"\n";
    exit(0);
}
else
{
    i=temp;
    temp=0;
}
}
}
```

```
if(temp==0)
    cout<<"The substring is not present in given string\n";
return 0;
}
```


71. Write C++ Program to Remove Spaces From String

```
#include<iostream>
#include<stdio.h>
using namespace std;
int main()
{
    int i,j=0;
    char str[30];
    cout<<"Enter a String:\n";
    gets(str);
    for(i=0;str[i]!='\0';++i)
    {
        if(str[i]!=' ')
            str[j++]=str[i];
    }
    str[j]='\0';
    cout<<"\nString After Removing Spaces:\n"<<str;
    return 0;
}
```


72. Write a C++ Program to find Compound Interest.

```
#include<iostream>
#include<conio.h>
#include<math.h>
using namespace std;
int main()
{
    float p,r,t,ci;
    cout<<"Enter Principle,Rate and Time ";
    cin>>p>>r>>t;
    ci=pow(p*(1+r/100),t);
    cout<<"\n"<<"Compound Interest = "<<ci<<"%";
    return 0;
}
```


73. Write a C++ Program to Convert given no. of days into years, weeks and days

```
#include<iostream>
#include<conio.h>
using namespace std;
int main()
{
    int y,d,w;

    cout<<"Enter No. of days:";
    cin>>d;
    y=d/365;
    d=d%365;
    w=d/7;
    d=d%7;
    cout<<"\nYears: "<<y<<"\nWeeks: "<<w<<"\nDays: "<<d;
    return 0;
}
```


74. Write a C++ program to find cube of a number using macros.

```
#include<iostream>
#include<conio.h>
#define CUBE(x) (x*x*x)
using namespace std;
int main()
{
    int n,cube;
    cout<<"Enter a number:";
    cin>>n;
    cube=CUBE(n);
    cout<<"Cube="<<cube;
    return 0;
}
```


75. Write a C++ program to multiply two matrices.

```
#include<iostream>
#include<conio.h>
using namespace std;
int main()
{

    int a[5][5],b[5][5],c[5][5],m,n,p,q,i,j,k;
    cout<<"Enter rows and columns of first matrix:";
    cin>>m>>n;
    cout<<"Enter rows and columns of second matrix:";
    cin>>p>>q;
    if(n==p)//condition for matrix multiplication.
    {
        cout<<"\nEnter first matrix:\n";
        for(i=0;i<m;++i)
            for(j=0;j<n;++j)
                cin>>a[i][j];
        cout<<"\nEnter second matrix:\n";
        for(i=0;i<p;++i)
            for(j=0;j<q;++j)
                cin>>b[i][j];
        cout<<"\nThe new matrix is:\n";
        for(i=0;i<m;++i)
        {
            for(j=0;j<q;++j)
```

```
{
    c[i][j]=0;
    for(k=0;k<n;++k)
        c[i][j]=c[i][j]+(a[i][k]*b[k][j]);
    cout<<c[i][j]<<" ";
}
cout<<"\n";
}
else
    cout<<"\nSorry!!!! Matrix multiplication can't be done, condition not
satisfied";
return 0;
}
```


76. Write a C++ program to insert an element in an array.

```
#include<iostream>
#include<conio.h>
using namespace std;
int main()
{
    int a[20],n,x,i,pos=0;
    cout<<"Enter size of array:";
    cin>>n;
    cout<<"Enter the array in ascending order:\n";
    for(i=0;i<n;++i)
        cin>>a[i];
    cout<<"\nEnter element to insert:";
    cin>>x;
    for(i=0;i<n;++i)
        if(a[i]<=x&& x<a[i+1])
        {
            pos=i+1;
            break;
        }
    for(i=n+1;i>pos;--i)
        a[i]=a[i-1];
    a[pos]=x;
    cout<<"\n\nArray after inserting element:";
    for(i=0;i<n+1;i++)
        cout<<a[i]<<" ";
```

```
return 0;
```

```
}
```

77. Write a C++ program to find largest and second largest no from a 2D array.

```
#include<iostream>
#include<conio.h>
using namespace std;
int main()
{
    int a[5][5],big1,big2,n,m,i,j;
    cout<<"Enter no of rows and columns(max 5):";
    cin>>m>>n;
    cout<<"Enter the array:\n";
    for(i=0;i<m;i++)
        for(j=0;j<n;++j)
            cin>>a[i][j];
    big1=a[0][0];
    for(i=0;i<m;++i)
        for(j=0;j<n;++j)
        {
            if(a[i][j]>big1)
                big1=a[i][j];
        }
    big2=a[0][0];
    for(i=0;i<m;++i)
        for(j=0;j<n;++j)
        {
            if(a[i][j]>big2&&a[i][j]<big1)
```

```
    big2=a[i][j];  
}  
cout<<"\n\nLargest number:"<<big1;  
cout<<"\nSecond largest number:"<<big2;  
return 0;  
}
```


78. Write a C++ program to do linear search in Array.

```
#include<iostream>
#include<conio.h>
using namespace std;
int main()
{
    int a[20],n,x,i,flag=0;
    cout<<"How many Elements?";
    cin>>n;
    cout<<"\nEnter Elements of the Array\n";
    for(i=0;i<n;++i)
        cin>>a[i];
    cout<<"\nEnter Element to search:";
    cin>>x;
    for(i=0;i<n;++i)
    {
        if(a[i]==x)
        {
            flag=1;
            break;
        }
    }
    if(flag)
        cout<<"\nElement is Found at position "<<i+1;
    else
        cout<<"\nElement not found";
```

```
return 0;  
}
```


79. Write a C++ Program to find element in Array using Binary search

```
#include<conio.h>
#include<iostream>
using namespace std;
int main()
{
    int search(int [],int,int);
    int n,i,a[100],e=-3,res;
    cout<<"How Many Elements:";
    cin>>n;
    cout<<"\nEnter Elements of Array in Accending order\n";
    for(i=0;i<n;++i)
    {
        cin>>a[i];
    }
    cout<<"\nEnter element to search:";
    cin>>e;
    res=search(a,n,e);
    if(res!=0)
        cout<<"\nElement is Founded at "<<res+1<<"st position";
    else
        cout<<"\nElement is not found....!!!";
    getch();
}
int search(int a[],int n,int e)
```

```
{
int f,l,m;
f=0;
l=n-1;
while(f<=l)
{
    m=(f+l)/2;
    if(e==a[m])
        return(m);
    else
        if(e>a[m])
            f=m+1;
        else
            l=m-1;
}
return 0;
}
```


80. Write a C++ Program to find highest and lowest element of a Matrix.

```
#include<iostream>
#include<conio.h>
using namespace std;
int main()
{
    int m,n,a[10][10],i,j,high,low;
    cout<<"Enter no. of rows and coloumns:";
    cin>>m>>n;
    cout<<"\nEnter matrix:\n";
    for(i=0;i<m;++i)
    {
        for(j=0;j<n;++j)
            cin>>a[i][j];
    }

    for(i=0;i<m;++i)
    {
        high=a[0][0];
        low=a[0][0];
        for(j=0;j<n;++j)
        {
            if(a[i][j]>high)
                high=a[i][j];
            else
                if(a[i][j]<low)
```

```
        low=a[i][j];  
    }  
}  
cout<<"\nHeighst Element:"<<high<<"\nLowest Element:"<<low<<"\n";  
return 0;  
}
```


81. Write a C++ Program and Algorithm for Selection Sort.

```
#include<iostream>
using namespace std;
int main()
{
    int i,j,n,loc,temp,min,a[30];
    cout<<"Enter the number of elements:";
    cin>>n;
    cout<<"\nEnter the elements\n";
    for(i=0;i<n;i++)
    {
        cin>>a[i];
    }

    for(i=0;i<n-1;i++)
    {
        min=a[i];
        loc=i;
        for(j=i+1;j<n;j++)
        {
            if(min>a[j])
            {
                min=a[j];
                loc=j;
            }
        }
    }
}
```

```
        temp=a[i];
        a[i]=a[loc];
        a[loc]=temp;
    }
    cout<<"\nSorted list is as follows\n";
    for(i=0;i<n;i++)
    {
        cout<<a[i]<<" ";
    }
    return 0;

}
```


82. Write a C++ Program and Algorithm for Insertion Sort

```
#include<iostream>
using namespace std;
int main()
{
    int i,j,n,temp,a[30];
    cout<<"Enter the number of elements:";
    cin>>n;
    cout<<"\nEnter the elements\n";
    for(i=0;i<n;i++)
    {
        cin>>a[i];
    }
    for(i=1;i<=n-1;i++)
    {
        temp=a[i];
        j=i-1;
        while((temp<a[j])&&(j>=0))
        {
            a[j+1]=a[j];    //moves element forward
            j=j-1;
        }

        a[j+1]=temp;    //insert element in proper place
    }
    cout<<"\nSorted list is as follows\n";
```

```
for(i=0;i<n;i++)  
{  
    cout<<a[i]<<" ";  
}  
return 0;  
}
```


83. Write a C++ Program to convert a lowercase alphabet to uppercase or vice-versa.

```
#include<iostream>
#include<conio.h>
using namespace std;
int main()
{

    char ch;
    cout<<"Enter any Alphabet:";
    cin>>ch;
    if(ch>='a'&&ch<='z')
    {
        cout<<"\n\tYou have entered a lowercase alphabet";
        ch=ch-32;

        cout<<"\n\nThe uppercase alphabet is "<<ch;
    }
    else
    {
        cout<<"\n\tYou have entered an Uppercase alphabet";
        ch=ch+32;
        cout<<"\n\nThe lowercase alphabet is "<<ch;
    }
    return 0;
}
```


84. Write a C++ Program to print three numbers in descending order

```
#include<iostream>
#include<conio.h>
using namespace std;
int main()
{

    int a,b,c,big1,big2,big3;
    cout<<"Enter three numbers:";
    cin>>a>>b>>c;

    big1=a;
    if(b>big1)
        big1=b;
    else
        if(c>big1)
            big1=c;
    if(big1==a)
    {
        if(b>c)
        {
            big2=b;
            big3=c;
        }
    }
```

```
else
{
    big2=c;
    big3=b;
}
}
else
{
    if(big1==b)
        if(a>c)
        {
            big2=a;
            big3=c;
        }
        else
        {
            big2=c;
            big3=a;
        }
    else
    {
        if(a>b)
        {
            big2=a;
            big3=b;
        }
        else
```



```
{  
    big2=b;  
    big3=a;  
}  
}  
}  
cout<<"\n\n\tNumbers in descending order.....\n\t\t";  
cout<<big1<<" "<<big2<<" "<<big3;  
return 0; }
```

85. Write C++ Program to find whether a square matrix is a) symmetric b) skew symmetric c) none of two.

```
#include <stdio.h>
#include<iostream>
# include <conio.h>
using namespace std;
int main( )

{

int a[10][10],i,j,m,n,c=0,c1=0;
cout<<"enter the array size";
cin>>n;
cout<<"enter the elements";
for(i=1;i<=m;i++)
for(j=1;j<=n;j++)
cin>>a[i][j];
for(i=1;i<=m;i++)
for(j=1;j<=n;j++)
{
if(a[i][j]==a[j][i])
c=1;
else
if(a[i][j]!=a[j][i])
c1=1;
}
```

```
cout<<"the given matrix is \n";
for(i=1;i<=m;i++)
{
for(j=1;j<=n;j++)
cout<<"%4d"<<a[i][j];
cout<<"\n";
}
if(c==0)
cout<<"the given matrix is symmetric";
else
if(c1==0)
cout<<"the matrix is skew symmetric";
else
cout<<"none of two";
return 0;
}
```


86. Write a C++ Program to calculate roots of quadratic equation $ax^2+bx+c=0$

```
#include<iostream>
#include<conio.h>
#include<math.h> //to calculate square root
using namespace std;
int main()
{

float root1,root2,a,b,c,d;
cout<<"Quadratic Equation is  $ax^2+bx+c=0$ ";
cout<<" Enter values of a,b and c:";
cin>>a>>b>>c;
d=(b*b)-(4*a*c);
if(d>0)
{
    cout<<"\nTwo real and distinct roots";
    root1=(-b+sqrt(d))/(2*a);
    root2=(-b-sqrt(d))/(2*a);
    cout<<"\nRoots are "<<root1<<" and "<<root2;
}
else
if(d==0)
{
    cout<<"\nTwo real and equal roots";
    root1=root2=-b/(2*a);
```

```
        cout<<"\nRoots are "<<root1<<" and "<<root2;
    }
    else
        cout<<"\nRoots are COMPLEX and IMAGINARY....!!!";
    return 0;
}
```


87. Write a C++ Program to find quotient and remainder of two numbers.

```
#include<iostream>
#include<conio.h>
using namespace std;

int main()
{
    int a,b,q,r;
    cout<<"Enter two numbers:";
    cin>>a>>b;
    if(a>b)
    {
        q=a/b;
        r=a%b;
        cout<<"\nQuotient="<<q;
        cout<<"\nRemainder="<<r;
    }
    else
        cout<<"\nFirst no. should be greater than second no....!!!";
    return 0;
}
```


88. Write a C++ Program to Find LCM and HCF of two numbers

```
#include<iostream>
#include<conio.h>
using namespace std;
int main()
{
    int a,b,hcf,lcm,max,min,r;
    cout<<"Enter two numbers:";
    cin>>a>>b;
    if(a>b)
    {
        max=a;
        min=b;
    }
    else
    if(b>a)
    {
        max=b;
        min=a;
    }
    if(a==b)
        hcf=a;
    else
    {
        do
```

```
{  
    r=max%min;  
    max=min;  
    min=r;  
}while(r!=0);  
hcf=max;  
}  
lcm=(a*b)/hcf;  
cout<<"\nLCM="<<lcm<<"\nHCF="<<hcf;  
return 0;  
}
```


89. Write a c++ Program to accept a number and check the given number is Armstrong or not.

```
#include<iostream>
# include <stdio.h>
# include <conio.h>
using namespace std;
int main( )
{
int n, a, b, c, d;
cout<<" Enter a Three Digit Number: ";
cin>>n;
a=n/100;
b=((n/10)%10);
c=n%10;
d=a*a*a+b*b*b +c*c*c;
if (n==d)
cout<<"The Given Number is Armstrong  number";
else
cout<< "The Given Number is Not Armstrong number";
return 0;
}
```


90. Write C++ Program to Count Occurrence of a Word in a Text File

```
#include<iostream>
#include<fstream.h>
#include<string.h>
using namespace std;

int main()
{
    ifstream fin("test.txt"); //opening text file
    int count=0;
    char ch[20],c[20];
    cout<<"Enter a word to count:";
    gets(c);
    while(fin)
    {
        fin>>ch;
        if(strcmp(ch,c)==0)
            count++;
    }
    cout<<"Occurrence="<<count<<"\n";
    fin.close(); //closing file
    return 0;
}
```


91. Write C++ Program to Count no. of alphabates, digits and spaces present in a file test.TXT

```
#include<fstream.h>
#include<conio.h>
int main()
{
    ifstream fin("test.txt");
    char ch;
    int i,a=0,s=0,d=0;
    while(fin)
    {
        fin.get(ch);
        i=ch;
        if(i>63&&i<91 || i>96&&i<123)
            a++;
        else
            if(ch==' ')
                s++;
            else
                if(i>47&&i<58)
                    d++;
    }
    cout<<"No. OF Alphabates:"<<a;
    cout<<"\nNo. Of Digits:"<<d;
    cout<<"\nNo. Of Spaces:"<<s;
    return 0;
```

}

90. Write C++ Program to read from a text file and than write in another text file.

```
#include<fstream.h>
#include<iostream>
using namespace std;
int main()
{
    ofstream fout("sare1.txt"); //create a file to write
    ifstream fin("sare1.txt");
    fout<<"Hello....!!";
    fout.close();                //closing the file
    fout.open("sare2.txt"); //create file to write
    char ch;
    while(fin) //loop wiill run till end of file
    {
        fin>>ch;    //reading data from file
        fout<<ch;    //writing data to file
    }
    fin.close();
    fout.close();
    return 0;
}
```


91. Write C++ Program to Count Number of Words, Lines and Total Size of a Text File

```
#include<iostream.h>
#include<fstream.h>
int main()
{
    ifstream fin("story.txt"); //opening text file
    int line=1,word=1,size; //will not count first word and last line so
    initial value is 1
    char ch;
    fin.seekg(0,ios::end); //bring file pointer position to end of file
    size=fin.tellg(); //count number of bytes till current postion for file
    pointer
    fin.seekg(0,ios::beg); //bring position of file pointer to beginning of
    file
    while(fin)
    {
        fin.get(ch);
        if(ch==' ' | ch=='\n')
            word++;
        if(ch=='\n')
            line++;
    }

    cout<<"Lines="<<line<<"\nWords="<<word<<"\nSize="<<size<<"\n";
    fin.close(); //closing file
    return 0;
```

}

92. Write C++ Program to Remove Spaces from String

```
#include<iostream>
#include<stdio.h>
using namespace std;
int main()
{
    int i,j=0;
    char str[30];
    cout<<"Enter a String:\n";
    gets(str);
    for(i=0;str[i]!='\0';++i)
    {
        if(str[i]!=' ')
            str[j++]=str[i];
    }
    str[j]='\0';
    cout<<"\nString After Removing Spaces:\n"<<str;
    return 0;
}
```


93. Write C++ program for overloading binary operators, addition, subtraction, multiplication, division and comparison

```
#include<iostream>
#include<conio.h>
#include<process.h>
using namespace std;
class demo
{
    float a,b;
    public:
    void getdata();
    void display();
    demo operator +(demo);
    demo operator -(demo);
    demo operator *(demo);
    demo operator /(demo);
    int operator ==(demo);
};

void demo::getdata()
{
    cout<<"Enter values of a and b:";
    cin>>a>>b;
}

void demo::display()
```

```
{  
    cout<<"a="<<a<<"\tb="<<b;  
}
```

```
demo demo::operator +(demo d1)
```

```
{  
    demo d2;  
    d2.a=a+d1.a;  
    d2.b=b+d1.b;  
    return d2;  
}
```

```
demo demo::operator -(demo d1)
```

```
{  
    demo d2;  
    d2.a=a-d1.a;  
    d2.b=b-d1.b;  
    return d2;  
}
```

```
demo demo::operator *(demo d1)
```

```
{  
    demo d2;  
    d2.a=a*d1.a;  
    d2.b=b*d1.b;  
    return d2;  
}
```

```
demo demo::operator /(demo d1)
```

```
{
```

```
    demo d2;
```

```
    d2.a=a/d1.a;
```

```
    d2.b=b/d1.b;
```

```
    return d2;
```

```
}
```

```
int demo::operator ==(demo d1)
```

```
{
```

```
    if((a==d1.a)&&(b==d1.b))
```

```
        return 1;
```

```
    else
```

```
        return 0;
```

```
}
```

```
int main()
```

```
{
```

```
    int ch;
```

```
    demo d1,d2,d3;
```

```
    cout<<"First Object:\n";
```

```
    d1.getdata();
```

```
    cout<<"\nSecond Object:\n";
```

```
    d2.getdata();
```

```
cout<<"\n\nOperator Overloadig Menu";
```

```
cout<<"\n\n1.Addition\n2.Subtraction\n3.Multiplication\n4.Division\n5.Compariso
```

```
cout<<"\n\nEnter your choice(1-6):";
```

```
cin>>ch;
```

```
switch(ch)
```

```
{
```

```
    case 1: d3=d1+d2;
```

```
        cout<<"\nThird Object:\n";
```

```
        d3.display();
```

```
        break;
```

```
    case 2: d3=d1-d2;
```

```
        cout<<"\nThird Object:\n";
```

```
        d3.display();
```

```
        break;
```

```
    case 3: d3=d1*d2;
```

```
        cout<<"\nThird Object:\n";
```

```
        d3.display();
```

```
        break;
```

```
    case 4: d3=d1/d2;
```

```
        cout<<"\nThird Object:\n";
```

```
        d3.display();
```

```
break;

case 5: if(d1==d2)
        cout<<"\nObjects are Equal";
        else
        cout<<"\nObjects are Not
Equal";

        break;

case 6: exit(0);
        break;

default: cout<<"Wrong Choice!!!Press any key to
exit";

        getch();
    }
    getch();
    return 0; }
```

94. Write C++ program to swap two numbers using class

```
#include<iostream>
#include<conio.h>
using namespace std;
class swap
{
    int a,b;
    public:
    void getdata();
    void swapv();
    void display();
};

void swap::getdata()
{
    cout<<"Enter two numbers:";
    cin>>a>>b;
}

void swap::swapv()
{
    a=a+b;
    b=a-b;
    a=a-b;
}
```

```
void swap::display()
{
    cout<<"a="<<a<<"\tb="<<b;
}
```

```
int main()
{

    swap s;

    s.getdata();
    cout<<"\nBefore swap:\n";
    s.display();

    s.swapv();
    cout<<"\n\nAfter swap:\n";
    s.display();

    getch();
    return 0;
}
```


95. Write C++ program to add, subtract, multiply and divide two complex numbers using structures.

```
#include<iostream>
#include<conio.h>
#include<math.h>
using namespace std;
struct complex
{
    float rel;
    float img;
}s1,s2;

int main()
{

    float a,b;
    cout<<"Enter real and imaginary part of 1st complex number:";
    cin>>s1.rel>>s1.img;
    cout<<"Enter real and imaginary part of 2nd complex number:";
    cin>>s2.rel>>s2.img;

    //Addition
    a=(s1.rel)+(s2.rel);
    b=(s1.img)+(s2.img);
    cout<<"\nAddition: "<<"("<<a<<")"<<"+ "<<"("<<b<<")"<<"i";
```

```

//Subtraction
a=(s1.rel)-(s2.rel);
b=(s1.img)-(s2.img);
cout<<"\nSubtraction: "<<"("<<a<<)"<<"+"<<"("<<b<<)"<<"i";

//Multiplication
a=((s1.rel)*(s2.rel))-((s1.img)*(s2.img));
b=((s1.rel)*(s2.img))+((s2.rel)*(s1.img));
cout<<"\nMultiplication: "<<"("<<a<<)"<<"+"<<"("<<b<<)"<<"i";

//Division
a=((((s1.rel)*(s2.rel))+((s1.img)*
(s2.img)))/(pow(s2.rel,2)+pow(s2.img,2)));
b((((s2.rel)*(s1.img))-((s1.rel)*(s2.img)))/(pow(s2.rel,2)+pow(s2.img,2)));
cout<<"\nDivision: "<<"("<<a<<)"<<"+"<<"("<<b<<)"<<"i";

getch();
}

```


96. Write C++ Program to Compare Two Strings Using Pointers

```
#include<iostream>
#include<stdio.h>
using namespace std;
int main()
{
    char str1[50],str2[50];
    int str_cmp(char*,char*);
    cout<<"Enter first string:";
    gets(str1);
    cout<<"Enter second string:";
    gets(str2);

    if(str_cmp(str1,str2))
        cout<<"\nStrings are equal";
    else
        cout<<"\nStrings are not equal";

    return 0;
}

int str_cmp(char *s1,char *s2)
{
    while(*s1==*s2)
    {
```

```
if(*s1=='\0' || *s2=='\0')  
    break;
```

```
    s1++;  
    s2++;  
}
```

```
if(*s1=='\0' && *s2=='\0')  
    return 1;
```

```
return 0;  
}
```


99. Write C++ program to perform a PUSH operation on a dynamically allocated stack

```
#include<iostream>
#include<conio.h>
using namespace std;
struct Node
{
    int data;
    Node *next;
}*top,*p;

Node* newnode(int x)
{
    p=new Node;
    p->data=x;
    p->next=NULL;
    return(p);
}

void push(Node *q)
{
    if(top==NULL)
        top=q;
    else
    {
        q->next=top;
    }
}
```

```
    top=q;
}
}
```

```
void showstack(Node *q)
{
    while(q!=NULL)
    {
        cout<<q->data<<" ";
        q=q->next;
    }
}
```

```
int main()
{

    int x;
    char ch='y';
    Node *nptr;
    while(ch=='y' || ch=='Y')
    {
        cout<<"\nEnter the data(int type):";
        cin>>x;
        nptr=newnode(x);
        push(nptr);
        cout<<"\nThe stack is:";
        showstack(top);
    }
}
```



```
cout<<"\n\nWhat push more(y/n):";  
cin>>ch;  
}  
return 0;  
}
```

100. Write C++ Program for Linked List Representation of Linear Queue

```
#include<iostream>

#include<stdlib.h>

using namespace std;

using namespace std;

struct node
{
    int data;
    struct node *next;
}*front=NULL,*rear,*temp;

void ins()
{
    temp=new node;
    cout<<"Enter data:";
    cin>>temp->data;
    temp->next=NULL;

    if(front==NULL)
        front=rear=temp;
    else
    {
        rear->next=temp;
        rear=temp;
    }
}
```

```
    }  
    cout<<"Node has been inserted\n";  
}
```

```
void del()  
{  
    if(front==NULL)  
        cout<<"Queue is empty\n";  
    else  
    {  
        temp=front;  
        front=front->next;  
        cout<<"Deleted node is "<<temp->data<<"\n";  
        delete(temp);  
    }  
}
```

```
void dis()  
{  
    if(front==NULL)  
        cout<<"Queue is empty\n";  
    else  
    {  
        temp=front;  
        while(temp->next!=NULL)
```

```

        {
            cout<<temp->data<<"->";
            temp=temp->next;
        }

        cout<<temp->data;
    }
}

main()
{
    int ch;
    while(1)
    {
        cout<<"\n*** Menu ***"
        <<"\n1.Insert\n2.Delete\n3.Display\n4.Exit";
        cout<<"\n\nEnter your choice(1-4):";
        cin>>ch;
        cout<<"\n";

        switch(ch)
        {
            case 1: ins();
                    break;
            case 2: del();
                    break;

```

```
        case 3: dis();  
                break;  
        case 4: exit(0);  
                break;  
        default: cout<<"Wrong Choice!!!";  
    }  
}  
  
return 0;  
}
```