**-:C++ Programing language:-**

**C++ Basic Structure:-**

**Turbo c editor partten:-**

#include<iostream>

int main()

{

int l,b,a;

cout<<"enter length";

cin>>l;

cout<<"enter breadth";

cin>>b;

a=l\*b;

cout<<"area of rectangle is"<<a;

return 0;

}

**Vs code editor partten:-**

#include<iostream>

int main()

{

int l,b,a;

std::cout<<"enter length";

std::cin>>l;

std::cout<<"enter breadth";

std::cin>>b;

a=l\*b;

std::cout<<"area of rectangle is"<<a;

return 0;

}

**Or**

#include<iostream>

using namespace std;

int main()

{

int l,b,a;

cout<<"enter length";

cin>>l;

cout<<"enter breadth";

scin>>b;

a=l\*b;

cout<<"area of rectangle is"<<a;

return 0;

}

**Array:- an array is collection of similar data items;**

**array always run 0 .**

**Two formate for array:-**

**1. 1d array**

**2. 2d array**

**Basic:-**

#include<iostream>

//using namespace std;

int main(){

int a[10],i,sum=0;

std::cout<<"Enter ten value in array=\n";

for(i=0;i<=9;i++)

{

std::cin>>a[i];

}

for(i=0;i<=9;i++)

{

sum=sum+a[i];

}

std::cout<<sum;

return 0;

}

**1. 1d array:-**

//Enter ten values and print sum avg;

#include<iostream>

using namespace std;

int main()

{

int a[10],b,sum=0;

float avg;

cout<<"Enter 10 value in array=\n";

for(b=0;b<=9;b++)

{

cin>>a[b];

}

for(b=0;b<=9;b++)

{

sum=sum+a[b];

}

avg=float(sum)/10;

cout<<"sum="<<sum;

cout<<"avg="<<avg;

return 0;

}

**//Enter 10 value in array and print largest, smallest value;**

#include<iostream>

using namespace std;

int main()

{

int a[10],b,l,s;

cout<<"Enter 10 value in array";

for(b=0;b<=9;b++)

{

cin>>a[b];

}

l=a[0];

s=a[0];

for(b=0;b<=9;b++)

{

if(a[b]>l)

{

l=a[b];

}

if(s>a[b])

{

s=a[b];

}

}

cout<<"largest value=\n"<<l;

cout<<"smallest value="<<s;

return 0;

}

**//Enter 10 value and count positive, negative in array formate;**

#include<iostream>

using namespace std;

int main()

{

int a[10],i,pc=0,nc=0;

cout<<"Enter 10 value in array";

for(i=0;i<=9;i++)

{

cin>>a[i];

}

pc=0;

nc=0;

for(i=0;i<=9;i++)

{

if(a[i]>0)

{

pc++;

}

if(a[i]<0)

{

nc++;

}

}

cout<<"Positive value="<<pc;

cout<<"\nnegative value="<<nc;

}

**//Enter ten value and print even in array formate;**

#include<iostream>

using namespace std;

int main(){

int a[10],b;

cout<<"Enter ten value in array=\n";

for(b=0;b<=9;b++)

{

cin>>a[b];

}

for(b=0;b<=9;b++)

{

if(a[b]%2==0)

{

cout<<"\t"<<a[b];

}

}

return 0;

}

**//Enter ten value and print odd in array formate;**

#include<iostream>

using namespace std;

int main(){

int a[10],b;

cout<<"Enter ten value in array=\n";

for(b=0;b<=9;b++)

{

cin>>a[b];

}

for(b=0;b<=9;b++)

{

if(a[b]%2==1)

{

cout<<"\t"<<a[b];

}

}

return 0;

}

**//Enter 10 value in array and count prime no;**

#include<iostream>

using namespace std;

int main(){

int a[10],b,c,i=0,count=0;

cout<<"Enter 10 value in array=\n";

for(b=0;b<=9;b++)

{

cin>>a[b];

}

cout<<"All prime no.=\n";

for(b=0;b<=9;b++)

{

i=0;

for(c=2;c<a[b];c++)

{

if(a[b]%c==0)

{

i=1;

break;

}

}

if(i==0)

{

count++;

cout<<"\t"<<a[b];

}

}

cout<<"\nCount prime no.="<<count;

return 0;

}

**//Enter 10 value in array and count perfect no;**

#include<iostream>

using namespace std;

int main(){

int a[10],b,c,i,sum=0,count=0;

cout<<"Enter 10 value in array=\n";

for(b=0;b<=9;b++)

{

cin>>a[b];

}

cout<<"perfect no.=";

for(b=0;b<=9;b++)

{

sum=0;

for(c=1;c<a[b];c++)

{

if(a[b]%c==0)

{

sum=sum+c;

}

}

if(sum==a[b])

{

cout<<"\t"<<c;

count++;

}

}

cout<<"\nTotal count="<<count;

return 0;

}

**//Enter 10 value in array and count armstrong no.**

#include<iostream>

using namespace std;

int main(){

int a[10],b,c,i,count=0,sum=0,ac=0,p,r,f,x;

cout<<"Enter 10 value in array=\n";

for(b=0;b<=9;b++)

{

cin>>a[b];

}

cout<<"armstrong no.=";

for(b=0;b<=9;b++)

{

count=0;

for(i=a[b];i>0;i=i/10)

{

count++;

}

sum=0;

for(x=a[b];x!=0;x=x/10)

{

r=x%10;

f=1;

p=count;

while(p>=1)

{

f=f\*r;

p--;

}

sum=sum+f;

}

if(sum==a[b])

{

ac++;

cout<<"\t"<<sum;

}

}

cout<<"\nTotal count="<<ac;

return 0;

}

**//Enter 10 value and count palindrome from array;**

#include<iostream>

using namespace std;

int main(){

int a[10],b,c,i,count=0,r;

cout<<"Enter 10 value in array=\n";

for(b=0;b<=9;b++)

{

cin>>a[b];

}

cout<<"Palindrome no.=";

count=0;

for(b=0;b<=9;b++)

{

i=0;

for(c=a[b];c>0;c=c/10)

{

r=c%10;

i=(i\*10)+r;

}

if(i==a[b])

{

count++;

cout<<"\t"<<i;

}

}

cout<<"\nTotal count="<<count;

return 0;

}

**//Enter ten value in array and search a value;(print found not found)**

#include<iostream>

using namespace std;

int main(){

int a[10],b,x,c,r,f;

cout<<"Enter 10 value in array=\n";

for(b=0;b<=9;b++)

{

cin>>a[b];

}

cout<<"Enter search element=";

cin>>x;

for(b=0;b<=9;b++)

{

if(a[b]==x)

{

f=1;

break;

}

}

if(f==1)

{

cout<<"Element is found";

}

else

{

cout<<"Element is not found";

}

return 0;

}

**//Enter 10 value in array and find the difference between largest and smallest element;**

#include<iostream>

using namespace std;

int main(){

int a[10],b,l,s,d;

cout<<"Enter 10 value in array=\n";

for(b=0;b<=9;b++)

{

cin>>a[b];

}

l=a[0];

s=a[0];

for(b=0;b<=9;b++)

{

if(a[b]>l)

{

l=a[b];

}

if(a[b]<s)

{

s=a[b];

}

}

cout<<"Largest values="<<l;

cout<<"\nSmallest values="<<s;

d=l-s;

cout<<"\nDifference between largest,smallest value="<<d;

return 0;

}

**//Enter 10 value in array and interchange first five elements with last five elements**

#include<iostream>

using namespace std;

int main(){

int a[10],b,t;

cout<<"Enter 10 value in array=\n";

for(b=0;b<=9;b++)

{

cin>>a[b];

}

for(b=0;b<=4;b++)

{

t=a[b];

a[b]=a[b+5];

a[b+5]=t;

}

cout<<"After interchange of element=";

for(b=0;b<=9;b++)

{

cout<<"\n"<<a[b];

}

return 0;

}

**//Enter ten value in array and insert a new no. in given position.**

#include<iostream>

using namespace std;

int main(){

int a[11],b,p,c,i;

cout<<"Enter ten value in array=\n";

for(b=0;b<=9;b++)

{

cin>>a[b];

}

cout<<"Enter position=";

cin>>p;

cout<<"Insert New no.=";

cin>>c;

cout<<"Insert element after in array=";

for(b=9;b>=p-1;b--)

{

a[b+1]=a[b];

}

a[p-1]=c;

for(b=0;b<=10;b++)

{

cout<<"\n"<<a[b];

}

return 0;

}

**//Enter 10 value in array and delete a no. in given position;**

#include<iostream>

using namespace std;

int main(){

int a[10],b,c=0,p,z;

cout<<"Enter 10 value in array=\n";

for(b=0;b<=9;b++)

{

cin>>a[b];

}

cout<<"Enter a no. you want to delete=";

cin>>p;

for(b=0;b<=9;b++)

{

if(a[b]==p)

{

c=1;

break;

}

}

if(c==1)

{

for(z=b;z<=9;z++)

{

a[z]=a[z+1];

}

cout<<"Now latest array are=\n";

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

{

cout<<"\n"<<a[b];

}

}

else

{

for(b=0;b<=9;b++)

{

cout<<"\n"<<a[b];

}

}

return 0;

}

**//Enter 10 value in array and short in assending order;**

#include<iostream>

using namespace std;

int main(){

int a[30],b,i,j,o;

cout<<"Enter ten value in array=\n";

for(b=0;b<=9;b++)

{

cin>>a[b];

}

for(b=0;b<=9;b++)

{

for(i=b+1;i<=9;i++)

{

if(a[b]>a[i])

{

o=a[b];

a[b]=a[i];

a[i]=o;

}

}

}

cout<<"The element arranged in assending order=";

for(b=0;b<=9;b++)

{

cout<<"\n"<<a[b];

}

return 0;

}

**//Enter 10 value in array and duplicate value will be print zero;**

#include<iostream>

using namespace std;

int main(){

int a[10],b,i;

cout<<"Enter 10 value in array=\n";

for(b=0;b<=9;b++)

{

cin>>a[b];

}

cout<<"After zero duplicate value are=";

for(b=0;b<=9;b++)

{

for(i=b+1;i<=9;i++)

{

if(a[b]==a[i])

{

a[i]=0;

}

}

}

for(b=0;b<=9;b++)

{

cout<<"\n"<<a[b];

}

return 0;

}

**//Enter 10 value in array and print binary code;**

#include<iostream>

using namespace std;

int main(){

int a[10],b,c,l,u,m,s,i,x;

cout<<"Enter 10 value in array=\n";

for(b=0;b<=9;b++)

{

cin>>a[b];

}

cout<<"Enter value to find=";

cin>>x;

l=0;

u=9;

while(l<=u)

{

m=(l+u)/2;

if(a[m]==x)

{

cout<<"value is found "<<m+1;

cout<<"positive value="<<a[m];

break;

}

else if(a[m]<x)

{

l=m;

}

else

{

u=m;

}

}

return 0;

}

**//Enter value in array and search binary or not;**

#include<iostream>

using namespace std;

int main(){

int a[100],b,x,i=0;

cout<<"Enter element in array=\n";

cin>>x;

for(b=x;b>0;b=b/2)

{

a[i]=b%2;

i++;

}

for(b=i-1;b>=0;b--)

{

cout<<a[b];

}

return 0;

}

**//Enter value in array and print with oquta(18)**

#include<iostream>

using namespace std;

int main(){

int a[100],b,x,i=0;

cout<<"Enter element in array=";

cin>>x;

for(b=x;b>0;b=b/8)

{

a[i]=b%8;

i++;

}

for(b=i-1;b>=0;b--)

{

cout<<" "<<a[b];

}

return 0;

}

**//10=A**

**//11=B**

**//12=C**

**//13=D**

**//14=E**

**//15=F**

**//Type for pattern in using array:-**

**//Enter element and print this type--->431--->1 10 15--->1 A F**

//hexza(16)

#include<iostream>

using namespace std;

int main(){

int a[100],b,x,i=0;

cout<<"Enter element in array=";

cin>>x;

for(b=x;b>0;b=b/16)

{

a[i]=b%16;

i++;

}

for(b=i-1;b>=0;b--)

{

if(a[b]==10)

{

cout<<" A ";

}

else if(a[b]==11)

{

cout<<"B ";

}

else if(a[b]==12)

{

cout<<"C ";

}

else if(a[b]==13)

{

cout<<"D ";

}

else if(a[b]==14)

{

cout<<"E ";

}

else if(a[b]==15)

{

cout<<"F ";

}

else

{

cout<<a[b];

}

}

return 0;

}

**2.2d array:-**

**/\***

**1 2 3**

**a[0][0] a[0][1] a[0][2]**

**4 5 6**

**a[1][0] a[1][1] a[1][2]**

**7 8 9**

**a[2][0] a[2][1] a[2][2]**

**\*/**

**//print this formate;**

#include<iostream>

using namespace std;

int main(){

int a[3][3],i,j;

cout<<"Enter three by three matrix\n";

for(i=0;i<=2;i++)

{

for(j=0;j<=2;j++)

{

cin>>a[i][j];

}

}

cout<<"Now 3 by 3 matrix are\n";

for(i=0;i<=2;i++)

{

for(j=0;j<=2;j++)

{

cout<<" "<<a[i][j];

}

cout<<"\n";

}

return 0;

}

**//Enter 2 matrix and print sum;**

**// a= 1 2 3 b= 1 2 3**

**// 4 5 6 4 5 6**

**// 7 8 9 7 8 9**

#include<iostream>

using namespace std;

int main(){

int a[3][3],b[3][3],i,j,d[3][3];

cout<<"Enter 3 by 3 matrix in a=\n";

for(i=0;i<=2;i++)

{

for(j=0;j<=2;j++)

{

cin>>a[i][j];

}

}

cout<<"Enter 3 by 3 matrix in b=\n";

for(i=0;i<=2;i++)

{

for(j=0;j<=2;j++)

{

cin>>b[i][j];

}

}

cout<<"Now 3 by 3 matrix in a are\n";

for(i=0;i<=2;i++)

{

for(j=0;j<=2;j++)

{

cout<<" "<<a[i][j];

}

cout<<"\n";

}

cout<<"Now 3 by 3 matrix in b are\n";

for(i=0;i<=2;i++)

{

for(j=0;j<=2;j++)

{

cout<<" "<<b[i][j];

}

cout<<"\n";

}

cout<<"Sum of 3 by 3 matrix\n";

for(i=0;i<=2;i++)

{

for(j=0;j<=2;j++)

{

d[i][j]=a[i][j]+b[i][j];

cout<<" "<<d[i][j];

}

cout<<"\n";

}

return 0;

}

**//Enter 3 by 3 matrix and print sum;**

#include<iostream>

using namespace std;

int main(){

int a[3][3],i,j,sum=0;

cout<<"Enter 3 by 3 matrix\n";

for(i=0;i<=2;i++)

{

for(j=0;j<=2;j++)

{

cin>>a[i][j];

}

}

cout<<"Now 3 by 3 matrix are\n";

for(i=0;i<=2;i++)

{

for(j=0;j<=2;j++)

{

cout<<" "<<a[i][j];

sum=sum+a[i][j];

}

cout<<"\n";

}

cout<<"Sum of matrix="<<sum;

return 0;

}

**//Enter 3 by 3 matrix and print**

**//1 4 7**

**//2 5 8**

**//3 6 9**

#include<iostream>

using namespace std;

int main(){

int a[3][3],i,j;

cout<<"Enter 3 by 3 matrix\n";

for(i=0;i<=2;i++)

{

for(j=0;j<=2;j++)

{

cin>>a[i][j];

}

}

cout<<"Now 3 by 3 matrix are\n";

for(i=0;i<=2;i++)

{

for(j=0;j<=2;j++)

{

cout<<" "<<a[j][i];

}

cout<<"\n";

}

return 0;

}

**//Enter 3 by 3 matrix and print Sum;**

**//1 2 3 = 6**

**//4 5 6 = 15**

**//7 8 9 =24**

#include<iostream>

using namespace std;

int main(){

int a[3][3],i,j,sum=0;

cout<<"Enter 3 by 3 matrix\n";

for(i=0;i<=2;i++)

{

for(j=0;j<=2;j++)

{

cin>>a[i][j];

}

}

cout<<"Now 3 by 3 matrix are\n";

for(i=0;i<=2;i++)

{

for(j=0;j<=2;j++)

{

cout<<" "<<a[i][j];

}

cout<<"\n";

}

for(i=0;i<=2;i++)

{

sum=0;

for(j=0;j<=2;j++)

{

sum=sum+a[i][j];

}

cout<<"\nsum is="<<sum;

}

return 0;

}

**//Enter 10 value and print sum this type;**

**// 1 2 3**

**// 4 5 6**

**// 7 8 9**

**// --------**

**// 12 15 18**

#include<iostream>

using namespace std;

int main(){

int a[3][3],i,j,sum=0;

cout<<"Enter 3 by 3 matrix\n";

for(i=0;i<=2;i++)

{

for(j=0;j<=2;j++)

{

cin>>a[i][j];

}

}

cout<<"Now 3 by 3 matrix are\n";

for(i=0;i<=2;i++)

{

for(j=0;j<=2;j++)

{

cout<<" "<<a[i][j];

}

cout<<"\n";

}

cout<<"---------\n";

for(i=0;i<=2;i++)

{

sum=0;

for(j=0;j<=2;j++)

{

sum=sum+a[j][i];

}

cout<<" "<<sum;

}

return 0;

}

**//Enter 3 by 3 matrix**

**// 1 2 3**

**// 4 5 6**

**// 7 8 9 and print 4 5 6;**

#include<iostream>

using namespace std;

int main(){

int a[3][3],i,j;

cout<<"Enter 3 by 3 matrix\n";

for(i=0;i<=2;i++)

{

for(j=0;j<=2;j++)

{

cin>>a[i][j];

}

}

cout<<"Now matrix are:\n";

for(j=0;j<=2;j++)

{

cout<<" "<<a[1][j];

}

return 0;

}

**//Enter 3 by 3 matrix**

**// 1 2 3**

**// 4 5 6**

**// 7 8 9 and print 2 5 8;**

#include<iostream>

using namespace std;

int main(){

int a[3][3],i,j;

cout<<"Enter 3 by 3 matrix:\n";

for(i=0;i<=2;i++)

{

for(j=0;j<=2;j++)

{

cin>>a[i][j];

}

}

cout<<"Now madile matrix are:\n";

for(i=0;i<=2;i++)

{

cout<<" "<<a[i][1];

}

return 0;

}

**//Enter 3 by 3 matrix**

**// 1 2 3**

**// 4 5 6**

**// 7 8 9 and print 1 5 9;**

#include<iostream>

using namespace std;

int main(){

int a[3][3],i,j;

cout<<"Enter 3 by 3 matrix\n";

for(i=0;i<=2;i++)

{

for(j=0;j<=2;j++)

{

cin>>a[i][j];

}

}

cout<<"Now matrix are:\n";

for(i=0;i<=2;i++)

{

cout<<" "<<a[i][i];

}

return 0;

}

**//Enter 3 by 3 matrix**

**// 1 2 3**

**// 4 5 6**

**// 7 8 9 and print 3 5 9;**

#include<iostream>

using namespace std;

int main(){

int a[3][3],i,j;

cout<<"Enter 3 by 3 matrix\n";

for(i=0;i<=2;i++)

{

for(j=0;j<=2;j++)

{

cin>>a[i][j];

}

}

cout<<"Now matrix are:\n";

for(i=0;i<=2;i++)

{

cout<<" "<<a[i][2-i];

}

return 0;

}

**//Enter 2 matrix and print result**

**// 1 2 3 //6 3 7**

**// 4 5 6 //1 4 3**

**// 7 8 9 //9 5 7**

**//result**

**//35 26 34**

**//83 62 85**

**//131 98 136**

#include<iostream>

using namespace std;

int main(){

int a[3][3],b[3][3],c[3][3],i,j,k;

cout<<"Enter first 3 by 3 matrix:\n";

for(i=0;i<=2;i++)

{

for(j=0;j<=2;j++)

{

cin>>a[i][j];

}

}

cout<<"Enter second 3 by 3 matrix:\n";

for(i=0;i<=2;i++)

{

for(j=0;j<=2;j++)

{

cin>>b[i][j];

}

}

cout<<"Result for first and second matrix:\n";

for(i=0;i<=2;i++)

{

for(j=0;j<=2;j++)

{

c[i][j]=0;

for(k=0;k<=2;k++)

{

c[i][j]=c[i][j]+a[i][k]\*b[k][j];

}

cout<<" "<<c[i][j];

}

cout<<"\n";

}

return 0;

}

**Function:-**

**Function are two type in c;**

**1. library function --> cout(),clrscr(),gets()...**

**2. user difine function :**

**user define function are four type in c++;**

**1. simple function**

**2. return function**

**3. parameter no return function**

**4. parameter with return function**

**\*solution mothad:- 4===>all**

**3--->1,3**

**1.Simple function:-**

**//Calculate area of rectangle**

#include<iostream>

using namespace std;

void area(){

int l,b,x;

cout<<"Enter lenght=";

cin>>l;

cout<<"Enter breath=";

cin>>b;

x=l\*b;

cout<<"Area of rectangle="<<x;

}

int main(){

area();

return 0;

}

**//Calculate area of triangle**

#include<iostream>

using namespace std;

void area(){

float b,h,x;

cout<<"Enter base=";

cin>>b;

cout<<"Enter hight";

cin>>h;

x=(b\*h)/2;

cout<<"Area of rectangle="<<x;

}

int main(){

area();

return 0;

}

**//Calculate area of circle;**

#include<iostream>

using namespace std;

void area(){

float r,x;

cout<<"Enter radius=";

cin>>r;

x=3.14\*r\*r;

cout<<"Area of circle="<<x;

}

int main(){

area();

return 0;

}

**//Calculate area of circle circumference;**

#include<iostream>

using namespace std;

void area(){

float r,k;

cout<<"Enter radius=";

cin>>r;

k=2\*3.14\*r;

cout<<"Area of circle="<<k;

}

int main(){

area();

return 0;

}

**//Enter x value and print factorial number;**

#include<iostream>

using namespace std;

int factorial(){

int f=1,x;

cout<<"Enter value of x=";

cin>>x;

while(x>=1)

{

f=f\*x;

x--;

}

cout<<"Factorial="<<f;

}

int main(){

factorial();

return 0;

}

**//Enter 10 value in array and print sum;**

#include<iostream>

using namespace std;

void add(){

int a[10],sum=0,b;

cout<<"Enter ten value in array=";

for(b=0;b<=9;b++)

{

cin>>a[b];

}

for(b=0;b<=9;b++)

{

sum=sum+a[b];

}

cout<<"\ntotal sum="<<sum;

}

int main(){

add();

return 0;

}

**//Enter ten value in array and search value use with function;**

#include<iostream>

using namespace std;

void search(){

int a[10],b,f,x;

cout<<"Enter ten value in array=";

for(b=0;b<=9;b++)

{

cin>>a[b];

}

cout<<"Enter search element=";

cin>>x;

for(b=0;b<=9;b++)

{

if(a[b]==x)

{

f=1;

break;

}

}

if(f==1)

{

cout<<"Element is found";

}

else{

cout<<"Element is not found";

}

}

int main(){

search();

return 0;

}

**//table of x use with function;**

#include<iostream>

using namespace std;

void table(){

int x,i,j;

cout<<"Enter table number=";

cin>>x;

for(i=1;i<=10;i++)

{

j=x\*i;

cout<<x<<"x"<<i<<"="<<j;

cout<<endl;

}

}

int main(){

table();

return 0;

}

**//Enter no. and print palindrom or not using with function;**

#include<iostream>

using namespace std;

void palindrom(){

int a,x=0,r,b;

cout<<"Enter no.=";

cin>>a;

for(b=a;a>0;a=a/10)

{

r=a%10;

x=(x\*10)+r;

}

if(x==b)

{

cout<<"It is palindrom";

}

else

{

cout<<"It is not palindrom";

}

}

int main(){

palindrom();

return 0;

}

**//Enter ten value in array and print interchange first five value to last five values;**

#include<iostream>

using namespace std;

void interchange(){

int a[10],b,t;

cout<<"Enter ten value in array=\n";

for(b=0;b<=9;b++)

{

cin>>a[b];

}

for(b=0;b<=4;b++)

{

t=a[b];

a[b]=a[b+5];

a[b+5]=t;

}

cout<<"After interchange of Element:";

for(b=0;b<=9;b++)

{

cout<<"\n"<<a[b];

//cout<<endl;

}

}

int main(){

interchange();

return 0;

}

**//Enter string and count vowels using function;**

#include<iostream>

#include<string.h>

using namespace std;

void vowel(){

int l=0,x,vc=0,i;

char b[20];

cout<<"Enter string=";

gets(b);

l=strlen(b);

for(i=0;i<l-1;i++)

{

if(b[i]=='a'|| b[i]=='e'||b[i]=='i'||b[i]=='o'||b[i]=='u')

{

vc++;

}

}

cout<<"Total vowel in string="<<vc;

}

int main(){

vowel();

return 0;

}

**//Enter string and print reverse string with using function;**

#include<iostream>

#include<string.h>

using namespace std;

void reverse(){

int a,l=0;

char b[20];

cout<<"Enter string=";

gets(b);

l=strlen(b);

for(a=l-1;a>=0;a--)

{

cout<<b[a];

}

}

int main(){

reverse();

return 0;

}

**//Enter string and count -->total space,words,vowel,conentes,digits and symbols;**

#include<iostream>

#include<string.h>

using namespace std;

void count(){

int i,l=0,count=0,vc=0,sc=0,cc=0,dc=0,syc=0;

char b[20];

cout<<"Enter string=";

gets(b);

l=strlen(b);

cout<<"Total Count="<<l;

for(i=0;i<=l-1;i++)

{

if(b[i]>=48 && b[i]==57)

{

dc++;

}

else if(b[i]==' ')

{

sc++;

}

else if(b[i]=='a'|| b[i]=='e'||b[i]=='i'||b[i]=='o'||b[i]=='u')

{

vc++;

}

else if(b[i]>=97 && b[i]<=122)

{

cc++;

}

else{

syc++;

}

}

cout<<"\n'Total Digit="<<dc;

cout<<"\nTotal Space="<<sc;

cout<<"\nTotal Vowel="<<vc;

cout<<"\nTotal Consonant="<<cc;

cout<<"\nTotal Symbols="<<syc;

}

int main(){

count();

return 0;

}

**//Enter string and find lenght with function;**

#include<iostream>

#include<string.h>

using namespace std;

void lenght(){

int i;

char b[20];

cout<<"Enter string=";

cin>>b;

for(i=0;b[i]!='\0';i++)

{}

cout<<"total lenght="<<i;

}

int main(){

lenght();

return 0;

}

**//Enter string and print palindrome or not with function;**

#include<iostream>

#include<string.h>

using namespace std;

int palindrome(){

int i,l,k=0,f=1;

char b[20];

cout<<"Enter string=";

cin>>b;

for(i=0;b[i]!=0;i++)

{}

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

{

for(l=i-1;l>=0;l--)

{

if(b[i]!=b[l])

{

cout<<"String is not palindrom";

f=0;

break;

}

}

}

if(f==1)

{

cout<<"String is palindrom";

}

}

int main(){

palindrome();

return 0;

}

**//Enter value and print power -->eg.-->pow(2,5)--->32;**

#include<iostream>

using namespace std;

void power(){

int a,b,p=1;

cout<<"Enter value=";

cin>>a;

cout<<"Enter power=";

cin>>b;

cout<<a<<"^"<<b<<"=";

while(b!=0)

{

p=p\*a;

b--;

}

cout<<p;

}

int main(){

power();

return 0;

}

**//Enter value and print hexa binary code;**

#include<iostream>

using namespace std;

void hexa(){

int a[100],b,x,i=0;

cout<<"Enter value and check hexa binary=";

cin>>x;

for(b=x;b>0;b=b/16)

{

a[i]=b%16;

i++;

}

for(b=i-1;b>=0;b--)

{

if(a[b]>=10 && a[b]<=15)

{

char k=a[b]+55;

cout<<" "<<k;

}

else

{

cout<<a[b];

}

}

}

int main(){

hexa();

return 0;

}

**//Enter binary and print value of binary;**

#include<iostream>

#include<math.h>

using namespace std;

void binary(){

int a[100],b,c,sum=0,x,p=0,r;

cout<<"Enter binary=";

cin>>b;

for(x=b;x>0;x=x/10)

{

r=x%10;

c=r\*pow(2,p);

sum=sum+c;

p++;

}

cout<<sum;

}

int main(){

binary();

return 0;

}

**2.Return function:-**

**//Calculate area of rectangle**

#include<iostream>

using namespace std;

int area(){

int l,b,x;

cout<<"Enter lenght=";

cin>>l;

cout<<"Enter breath=";

cin>>b;

x=l\*b;

return(x);

}

int main(){

int i;

i=area();

cout<<"Area of rectangle="<<i;

return 0;

}

**//Calculate area of triangle;**

#include<iostream>

using namespace std;

float area(){

float h,b,x;

cout<<"Enter base=";

cin>>b;

cout<<"Enter hight=";

cin>>h;

x=(b\*h)/2;

return(x);

}

int main(){

float i;

i=area();

cout<<"Area of triangle="<<i;

return 0;

}

**//Calculate area of circle;**

#include<iostream>

using namespace std;

float area(){

float r,x;

cout<<"Enter radius=";

cin>>r;

x=3.14\*r\*r;

return(x);

}

int main(){

float i=area();

cout<<"Area of circle="<<i;

return 0;

}

**//Calculate area of circle circumference;**

#include<iostream>

using namespace std;

float area(){

float r,k,x;

cout<<"Enter radius=";

cin>>r;

x=2\*3.14\*r;

return(x);

}

int main(){

float k;

k=area();

cout<<"Area of circle="<<k;

return 0;

}

**//Enter x value and print factorial number;**

#include<iostream>

using namespace std;

int factorial(){

int f=1,x;

cout<<"Enter value of x=";

cin>>x;

while(x>=1)

{

f=f\*x;

x--;

}

return(f);

}

int main(){

int k;

k=factorial();

cout<<"Factorial="<<k;

return 0;

}

**//Enter ten value in array and print sum with function;**

#include<iostream>

using namespace std;

int add(){

int a[10],b,sum=0;

cout<<"Enter ten value in array=\n";

for(b=0;b<=9;b++)

{

cin>>b[a];

}

for(b=0;b<=9;b++)

{

sum=sum+b[a];

}

return(sum);

}

int main(){

int i;

i=add();

cout<<"sum="<<i;

return 0;

}

**//Enter ten value in array and search value use with function;**

#include<iostream>

using namespace std;

int search(){

int a[10],b,f,x;

cout<<"Enter ten value in array=";

for(b=0;b<=9;b++)

{

cin>>a[b];

}

cout<<"Enter search element=";

cin>>x;

for(b=0;b<=9;b++)

{

if(a[b]==x)

{

f=1;

break;

}

}

return(f);

}

int main(){

int i=0;

i=search();

if(i==1)

{

cout<<"Element is found";

}

else{

cout<<"Element is not found";

}

return 0;

}

**//Enter no. and print palindrom or not using with function;**

#include<iostream>

using namespace std;

int palindrom(){

int a,x=0,r,b,f;

cout<<"Enter no.=";

cin>>a;

for(b=a;a>0;a=a/10)

{

r=a%10;

x=(x\*10)+r;

}

if(x==b){

f=1;

}

else{

f=0;

}

return(f);

}

int main(){

int i;

i=palindrom();

if(i==1)

{

cout<<"It is palindrom";

}

else

{

cout<<"It is not palindrom";

}

return 0;

}

**//Enter string and count vowels using function;**

#include<iostream>

#include<string.h>

using namespace std;

int vowel(){

int l=0,x,vc=0,i;

char b[20];

cout<<"Enter string=";

gets(b);

l=strlen(b);

for(i=0;i<l-1;i++)

{

if(b[i]=='a'|| b[i]=='e'||b[i]=='i'||b[i]=='o'||b[i]=='u')

{

vc++;

}

}

return(vc);

}

int main(){

int k;

k=vowel();

cout<<"Total vowel in string="<<k;

return 0;

}

**//Enter value and print power -->eg.-->pow(2,5)--->32;**

#include<iostream>

using namespace std;

int power(){

int a,b,p=1;

cout<<"Enter value=";

cin>>a;

cout<<"Enter power=";

cin>>b;

cout<<a<<"^"<<b<<"=";

while(b!=0)

{

p=p\*a;

b--;

}

return(p);

}

int main(){

int k;

k=power();

cout<<k;

return 0;

}

**3.Parameter with not return:-**

**//Calculate area of rectangle**

#include<iostream>

using namespace std;

void area(int i,int j){

int x;

x=i\*j;

cout<<"Area of rectangle="<<x;

}

int main(){

int l,b;

cout<<"Enter length=";

cin>>l;

cout<<"Enter breath=";

cin>>b;

area(l,b);

return 0;

}

**//Calculate area of triangle;**

#include<iostream>

using namespace std;

void area(int i,int j){

float x;

x=(i\*j)/2;

cout<<"Area of triangle="<<x;

}

int main(){

float h,b;

cout<<"Enter base=";

cin>>b;

cout<<"Enter hight=";

cin>>h;

area(b,h);

return 0;

}

**//Calculate area of circle;**

#include<iostream>

using namespace std;

void area(int i){

float x;

x=3.14\*i\*i;

cout<<"Area of circle="<<x;

}

int main(){

float r,x;

cout<<"Enter radius=";

cin>>r;

area(r);

return 0;

}

**//Calculate area of circle circumference;**

#include<iostream>

using namespace std;

void area(float i){

float x;

x=2\*3.14\*i;

cout<<"Area of circle="<<x;

}

int main(){

float r,k;

cout<<"Enter radius=";

cin>>r;

area(r);

return 0;

}

**//Enter x value and print factorial number;**

#include<iostream>

using namespace std;

void factorial(int i){

int f=1;

while(i>=1)

{

f=f\*i;

i--;

}

cout<<"Factorial ="<<f;

}

int main(){

int x;

cout<<"Enter value of x=";

cin>>x;

factorial(x);

return 0;

}

**//Enter 10 value in array and print sum;**

#include<iostream>

using namespace std;

void add(int j[]){

int sum=0,i;

for(i=0;i<=9;i++)

{

sum=sum+j[i];

}

cout<<"\ntotal sum="<<sum;

}

int main(){

int a[10],b;

cout<<"Enter ten value in array=";

for(b=0;b<=9;b++)

{

cin>>a[b];

}

add(a);

return 0;

}

**//Enter ten value in array and search value use with function;**

#include<iostream>

using namespace std;

void search(int j[]){

int f=0,i,x;

cout<<"Enter search element=";

cin>>x;

for(i=0;i<=9;i++)

{

if(j[i]==x)

{

f=1;

break;

}

}

if(f==1)

{

cout<<"Element is found";

}

else{

cout<<"Element is not found";

}

}

int main(){

int a[10],b;

cout<<"Enter ten value in array=";

for(b=0;b<=9;b++)

{

cin>>a[b];

}

search(a);

return 0;

}

**//table of x use with function;**

#include<iostream>

using namespace std;

void table(int k){

int i,j;

for(i=1;i<=10;i++)

{

j=k\*i;

cout<<k<<"x"<<i<<"="<<j;

cout<<endl;

}

}

int main(){

int x;

cout<<"Enter table number=";

cin>>x;

table(x);

return 0;

}

**//Enter no. and print palindrom or not using with function;**

#include<iostream>

using namespace std;

void palindrom(int i){

int r,b,x=0;

for(b=i;i>0;i=i/10)

{

r=i%10;

x=(x\*10)+r;

}

if(x==b)

{

cout<<"It is palindrom";

}

else

{

cout<<"It is not palindrom";

}

}

int main(){

int a;

cout<<"Enter no.=";

cin>>a;

palindrom(a);

return 0;

}

**//Enter ten value in array and print interchange first five value to last five values;**

#include<iostream>

using namespace std;

void interchange(int i[]){

int b,t;

for(b=0;b<=4;b++)

{

t=i[b];

i[b]=i[b+5];

i[b+5]=t;

}

cout<<"After interchange of Element:";

for(b=0;b<=9;b++)

{

cout<<"\n"<<i[b];

//cout<<endl;

}

}

int main(){

int a[10],b,t;

cout<<"Enter ten value in array=\n";

for(b=0;b<=9;b++)

{

cin>>a[b];

}

interchange(a);

return 0;

}

**//Enter string and count vowels using function;**

#include<iostream>

#include<string.h>

using namespace std;

void vowel(int k,char j[]){

int vc=0,i;

for(i=0;i<=k-1;i++)

{

if(j[i]=='a'|| j[i]=='e'||j[i]=='i'||j[i]=='o'||j[i]=='u')

{

vc++;

}

}

cout<<"Total vowel in string="<<vc;

}

int main(){

int l=0,x,vc=0,i;

char b[20];

cout<<"Enter string=";

gets(b);

l=strlen(b);

vowel(l,b);

return 0;

}

**//Enter string and print reverse string with using function;**

#include<iostream>

#include<string.h>

using namespace std;

void reverse(int k,char j[]){

int a;

for(a=k-1;a>=0;a--)

{

cout<<j[a];

}

}

int main(){

int l=0;

char b[20];

cout<<"Enter string=";

gets(b);

l=strlen(b);

reverse(l,b);

return 0;

}

**//Enter string and count -->total space,words,vowel,conentes,digits and symbols;**

#include<iostream>

#include<string.h>

using namespace std;

void count(int k,char j[]){

int count=0,vc=0,sc=0,cc=0,dc=0,syc=0,i;

for(i=0;i<=k-1;i++)

{

if(j[i]>=48 && j[i]==57)

{

dc++;

}

else if(j[i]==' ')

{

sc++;

}

else if(j[i]=='a'|| j[i]=='e'||j[i]=='i'||j[i]=='o'||j[i]=='u')

{

vc++;

}

else if(j[i]>=97 && j[i]<=122)

{

cc++;

}

else{

syc++;

}

}

cout<<"Total Count="<<k;

cout<<"\n'Total Digit="<<dc;

cout<<"\nTotal Space="<<sc;

cout<<"\nTotal Vowel="<<vc;

cout<<"\nTotal Consonant="<<cc;

cout<<"\nTotal Symbols="<<syc;

}

int main(){

int l=0;

char b[20];

cout<<"Enter string=";

gets(b);

l=strlen(b);

count(l,b);

return 0;

}

**//Enter string and find lenght with function;**

#include<iostream>

#include<string.h>

using namespace std;

void lenght(char j[]){

int i;

for(i=0;j[i]!='\0';i++)

{}

cout<<"total lenght="<<i;

}

int main(){

int i;

char b[20];

cout<<"Enter string=";

cin>>b;

lenght(b);

return 0;

}

**//Enter value and print power -->eg.-->pow(2,5)--->32;**

#include<iostream>

using namespace std;

void power(int i, int j){

int p=1;

while(j!=0)

{

p=p\*i;

j--;

}

cout<<p;

}

int main(){

int a,b;

cout<<"Enter value=";

cin>>a;

cout<<"Enter power=";

cin>>b;

cout<<a<<"^"<<b<<"=";

power(a,b);

return 0;

}

**4.Parameter with return:-**

**//Calculate area of rectangle**

#include<iostream>

using namespace std;

int area(int i,int j){

int k;

k=i\*j;

return(k);

}

int main(){

int l,b,x;

cout<<"Enter lenght=";

cin>>l;

cout<<"Enter breath=";

cin>>b;

x=area(l,b);

cout<<"Area of rectangle="<<x;

return 0;

}

**//Calculate area of triangle;**

#include<iostream>

using namespace std;

int area(int i,int j){

int k;

k=(i\*j)/2;

return(k);

}

int main(){

int h,b,x;

cout<<"Enter base=";

cin>>b;

cout<<"Enter hight=";

cin>>h;

x=area(b,h);

cout<<"Area of triangle="<<x;

return 0;

}

**//Calculate area of circle;**

#include<iostream>

using namespace std;

float area(float i){

float x;

x=3.14\*i\*i;

return(x);

}

int main(){

float r,k;

cout<<"Enter radius=";

cin>>r;

k=area(r);

cout<<"Area of circle="<<k;

return 0;

}

**//Calculate area of circle circumference;**

#include<iostream>

using namespace std;

float area(float i){

float x;

x=2\*3.14\*i;

return(x);

}

int main(){

float r,k;

cout<<"Enter radius=";

cin>>r;

k=area(r);

cout<<"Area of circle="<<k;

return 0;

}

**//Enter x value and print factorial number;**

#include<iostream>

using namespace std;

int factorial(int i){

int f=1;

while(i>=1)

{

f=f\*i;

i--;

}

return(f);

}

int main(){

int x,k;

cout<<"Enter value of x=";

cin>>x;

k=factorial(x);

cout<<"Factorial="<<k;

return 0;

}

**//Enter 10 value in array and print sum with function**

#include<iostream>

using namespace std;

int add(int i[]){

int sum=0,j;

for(j=0;j<=9;j++)

{

sum=sum+i[j];

}

return(sum);

}

int main()

{

int a[10],b,k;

cout<<"Enter 10 value in array=\n";

for(b=0;b<=9;b++)

{

cin>>b[a];

}

k=add(a);

cout<<"Total sum="<<k;

return 0;

}

**//Enter 10 value in array and search value use with function**

#include<iostream>

using namespace std;

int search(int i[]){

int j,x,f=0;

cout<<"Enter search value=";

cin>>x;

for(j=0;j<=9;j++)

{

if(i[j]==x)

{

f=1;

break;

}

}

return(f);

}

int main(){

int a[10],b,k=0;

cout<<"Enter 10 values in array=\n";

for(b=0;b<=9;b++)

{

cin>>a[b];

}

k=search(a);

if(k==1)

{

cout<<"Element is found";

}

else

{

cout<<"Element is not found";

}

return 0;

}

**//Enter no. and print palindrome or not using with function**

#include<iostream>

using namespace std;

int palindrome(int i){

int x=0,r;

for(i;i>0;i=i/10)

{

r=i%10;

x=(x\*10)+r;

}

return(x);

}

int main(){

int a,b,z;

cout<<"Enter No.=";

cin>>a;

b=a;

z=palindrome(a);

if(z==b)

{

cout<<"it is palindrome number";

}

else

{

cout<<"it is not palindrome number";

}

return 0;

}

**//enter string and count vowels using functions;**

#include<iostream>

#include<string.h>

using namespace std;

int vowel(int j, char k[]){

int i,vc=0;

for(i=0;i<=j-1;i++)

{

if(k[i]=='a'||k[i]=='e'|| k[i]=='i'|| k[i]=='o'|| k[i]=='u')

{

vc++;

}

}

return(vc);

}

int main(){

int l=0,x;

char b[20];

cout<<"Enter sentences=";

gets(b);

l=strlen(b);

x=vowel(l,b);

cout<<"Total vowel="<<x;

return 0;

}

**//Factorial of x using recursion;**

#include<iostream>

using namespace std;

int factorial(int i)

{

cout<<"Calling factorial"<<i;

cout<<endl;

if(i==1 || i==0)

{

return 1;

}

else{

return i\*factorial(i-1);

}

}

int main(){

int a=5;

cout<<"The value of factorial="<<a<<factorial(a);

return 0;

}

**//print fibonacci series using recursion ;**

#include<iostream>

using namespace std;

int fibo(int a)

{

if(a==1 || a==0)

{

return a;

}

else

{

return fibo(a-1) + fibo(a-2);

}

}

int main(){

int x,i;

cout<<"Enter terms=";

cin>>x;

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

{

cout<<"\t"<<fibo(i);

}

return 0;

}

**//Enter value and print power -->eg.-->pow(2,5)--->32;**

#include<iostream>

using namespace std;

int power(int i,int j){

int p=1;

while(j!=0)

{

p=p\*i;

j--;

}

return(p);

}

int main(){

int a,b,k;

cout<<"Enter value=";

cin>>a;

cout<<"Enter power=";

cin>>b;

cout<<a<<"^"<<b<<"=";

k=power(a,b);

cout<<k;

return 0;

}

**Structure:-**

**// enter day, month and year and print date**

#include<iostream>

using namespace std;

struct date{

int d,m,y;

};

int main(){

struct date i;

cout<<"Enter day,month,year=";

cin>>i.d>>i.m>>i.y;

cout<<"Date="<<i.d<<"/"<<i.m<<"/"<<i.y;

return 0;

}

**// enter roll, name and five subject marks of a student and find total, percenta and division**

#include<iostream>

using namespace std;

struct num{

int r,m,p,c,h,e,marks,div;

float per;

char n[20];

};

int main(){

struct num i;

cout<<"Enter roll no.=";

cin>>i.r;

cout<<"Maths num=";

cin>>i.m;

cout<<"Physics num=";

cin>>i.p;

cout<<"Chemistry num=";

cin>>i.c;

cout<<"Hindi num=";

cin>>i.h;

cout<<"English num=";

cin>>i.e;

cout<<"Enter name=";

cin.getline(i.n,20);

cin.ignore();

i.marks=i.m+i.p+i.c+i.h+i.e;

cout<<"Total marks="<<i.marks<<endl;

i.per=(float)i.marks/5;

cout<<"Percentage="<<i.per<<endl;

if(i.per>=60)

{

cout<<"1st division";

}

else if(i.per>=45)

{

cout<<"2nd division";

}

else if(i.per>=38)

{

cout<<"3rd division";

}

else

{

cout<<"Fail";

}

return 0;

}

**//enter code, name, and salary of employee and find hra,da,ta,gs,pf,ns**

#include<iostream>

#include<string.h>

using namespace std;

struct salary{

int salary,hra,da,ta,gs,pf,ns;

char n[20];

};

int main(){

struct salary i[5];

int j;

for(j=0;j<=4;j++){

cout<<"Enter salary=";

cin>>i[j].salary;

i[j].hra=(12\*i[j].salary)/100;

i[j].da=(20\*i[j].salary)/100;

i[j].ta=(5\*i[j].salary)/100;

i[j].pf=(15\*i[j].salary)/100;

i[j].gs=i[j].salary+i[j].hra+i[j].da+i[j].ta;

i[j].ns=i[j].gs-i[j].pf;

}

for(int k=0;k<=4;k++){

cout<<"Salary="<<i[k].salary<<endl;

cout<<"house rent allowence="<<i[k].hra<<endl;

cout<<"daily allowence="<<i[k].da<<endl;

cout<<"total ="<<i[k].ta<<endl;

cout<<"provient fund="<<i[k].pf<<endl;

cout<<"Gross salary="<<i[k].gs<<endl;

cout<<"Net salary="<<i[k].ns<<endl;

cout<<"------------------------------"<<endl;

}

return 0;

}

**// enter roll, name and five subject marks of a student and find total, percenta and division**

#include<iostream>

#include<string.h>

using namespace std;

struct num{

int r,m,p,c,h,e,marks;

float per;

char div[20];

};

int main(){

struct num i[5];

int j;

for(j=0;j<=1;j++)

{

cout<<"Enter roll no.=";

cin>>i[j].r;

cout<<"Maths num=";

cin>>i[j].m;

cout<<"Physics num=";

cin>>i[j].p;

cout<<"Chemistry num=";

cin>>i[j].c;

cout<<"Hindi num=";

cin>>i[j].h;

cout<<"English num=";

cin>>i[j].e;

i[j].marks=i[j].m+i[j].p+i[j].c+i[j].h+i[j].e;

cout<<"Total marks="<<i[j].marks<<endl;

i[j].per=(float)i[j].marks/5;

cout<<"Percentage="<<i[j].per<<endl;

if(i[j].per>=60)

{

strcpy(i[j].div,"1st");

}

else if(i[j].per<=60)

{

strcpy(i[j].div,"2nd");

}

else if(i[j].per>=40)

{

strcpy(i[j].div,"3rd");

}

else

{

strcpy(i[j].div,"Fail");

}

}

cout<<"\t\t-:Table Of Formate:-\t"<<endl;

cout<<"roll\t\ttotal\t\tpercentage\t\tdivision"<<endl;

cout<<"......................................................................."<<endl;

for(j=0;j<=1;j++)

{

cout<<i[j].r<<"\t\t"<<i[j].marks<<"\t\t"<<i[j].per<<"\t\t\t"<<i[j].div<<endl;

}

return 0;

}

**//enter your current date and enter your birth date and print how many year are old you**

#include<iostream>

using namespace std;

struct date

{

int x,y,z;

};

int main(){

struct date d,d1,age;

cout<<"Enter current date=";

cin>>d.x>>d.y>>d.z;

cout<<"Enter birth date=";

cin>>d1.x>>d1.y>>d1.z;

age.x=d.x-d1.x;

age.y=d.y-d1.y;

age.z=d.z-d1.z;

if(age.x<0)

{

age.x=age.x+30;

age.y=age.y-1;

}

if(age.y<0)

{

age.y=age.y+12;

age.z=age.z-1;

}

cout<<"your age="<<age.z<<" year "<<age.y<<" month "<<age.x<<" days"<<endl;

return 0;

}

**-:Class**:-

**1. a class is a backbone of object oriented programming**

**2. a class is a collection of variables and methods related to a particular object**

**// wap to find area of a rectangle**

#include<iostream>

using namespace std;

class rectangle

{

private:

int l,b,a;

public:

void setval() // this method is only setting the members variable of the class

{

l=5;

b=10;

}

void getarea() // this method is actually calculating the area of rectangle

{

a=l\*b;

}

void display() // this method is actually printing the area of rectangle

{

cout<<"area of rectangle is "<<a<<endl;

}

};

int main()

{

rectangle object; // create an object of class rectangle

object.setval(); // call the function setval of class rectangle

object.getarea(); // call the function getarea of the class rectangle

object.display(); // we can call this method becoz it is public

return(0);

}

**1. a class is a backbone of object oriented programming**

**2. a class is a collection of variables and methods related to a particular object**

**3. a structure is just a collection of variables (different data types) whereas a class is a collection of methods and variables**

**4. all of the activitives/processes should be in a seperate function of the class**

**5. all of the member variables of a class should be private and methods may be public**

**6. all of the functions related to class must be inside the class**

**7. a class should be created in a way that it can be reused any number of times in efficient manner**

**// below is an example of class as a collection of variables (just like strcuture)**

#include<iostream>

using namespace std;

class rectangle

{

private:

int l,b,a;

public:

void setval() // this method is only setting the members variable of the class

{

l=5;

b=10;

}

void getarea() // this method is actually calculating the area of rectangle

{

a=l\*b;

}

void display() // this method is actually printing the area of rectangle

{

cout<<"area of rectangle is "<<a<<endl;

}

};

int main()

{

rectangle object; // create an object of class rectangle

object.setval(); // call the function setval of class rectangle

object.getarea(); // call the function getarea of the class rectangle

object.display(); // we can call this method becoz it is public

return(0);

}

**//enter lenght and breadth to find area of a rectangle**

#include<iostream>

using namespace std;

class rectangle

{

private:

int l,b,a;

public:

void setval(int x,int y)

{

l=x;

b=y;

}

void getarea() // this method is actually calculating the area of rectangle

{

a=l\*b;

}

void display() // this method is actually printing the area of rectangle

{

cout<<"area of rectangle is "<<a<<endl;

}

};

int main()

{

int l,b;

rectangle object; // create an object of class rectangle

cout<<"Enter lenght="<<endl;

cin>>l;

cout<<"Enter breadth="<<endl;

cin>>b;

object.setval(l,b);

object.getarea(); // call the function getarea of the class rectangle

object.display(); // we can call this method becoz it is public

return(0);

}

**//Enter radius and find circle and circumference;**

#include<iostream>

using namespace std;

class circle{

private:

float r,a,b;

public:

void setval(float x)

{

r=x;

}

void getarea()

{

a=3.14\*r\*r;

}

void getcircle()

{

b=2\*3.14\*r;

}

void display()

{

cout<<"Area of circle is "<<a<<endl;

cout<<"Area of circle circumference is "<<b<<endl;

}

};

int main(){

circle object;

float r;

cout<<"Enter radius="<<endl;

cin>>r;

object.setval(r);

object.getarea();

object.getcircle();

object.display();

return 0;

}

**//Enter qty rate year and find simple interest and compound**

#include<iostream>

#include<math.h>

using namespace std;

class si{

private:

float p,r,t,si,ci;

public:

void setval(float i, float j, float k)

{

p=i;

r=j;

t=k;

}

void getsi()

{

si=(p\*r\*t)/100;

}

void getci()

{

ci=p\*pow((1+r/100),t)-p;

}

void display()

{

cout<<"Simple interest is "<<si<<endl;

cout<<"Compound interest is "<<ci<<endl;

}

};

int main(){

float p,r,t;

si object;

cout<<"Enter principal=";

cin>>p;

cout<<"Enter rate=";

cin>>r;

cout<<"Enter time=";

cin>>t;

object.setval(p,r,t);

object.getsi();

object.getci();

object.display();

return 0;

}

**// enter code, name, and salary of employee and find hra,da,ta,gs,pf,ns**

#include<iostream>

#include<string.h>

using namespace std;

class salary{

private:

int salary,hra,da,ta,gs,pf,ns;

char n[20];

public:

void setval(int i,char j[])

{

salary=i;

strcpy(n,j);

}

void gethra()

{

hra=(12\*salary)/100;

}

void getda()

{

da=(20\*salary)/100;

}

void getta()

{

ta=(5\*salary)/100;

}

void getpf()

{

pf=(15\*salary)/100;

}

void getgs()

{

gs=salary+hra+da+ta;

}

void getns()

{

ns=gs-pf;

}

void display()

{

cout<<"Name="<<n<<endl;

cout<<"Salary="<<salary<<endl;

cout<<"House Rent Allowence="<<hra<<endl;

cout<<"Daily Allowence="<<da<<endl;

cout<<"Total="<<ta<<endl;

cout<<"Provient Fund="<<pf<<endl;

cout<<"Gross Salary="<<gs<<endl;

cout<<"Net Salary="<<ns<<endl;

}

};

int main(){

salary object;

int salary,hra,da,ta,gs,pf,ns;

char n[20];

cout<<"Enter Name=";

cin.getline(n,20);

cout<<"Enter salary=";

cin>>salary;

object.setval(salary,n);

object.gethra();

object.getda();

object.getta();

object.getpf();

object.getgs();

object.getns();

object.display();

return 0;

}

**// enter roll, name and five subject marks of a student and find total, percenta and division**

#include<iostream>

#include<string.h>

using namespace std;

class marks{

private:

int r,m,p,c,h,e,marks;

char div[20],n[20];

float per;

public:

void setval(int i,int j,int k,int x,int y,int z,char a[])

{

r=i;

m=j;

p=k;

c=x;

h=y;

e=z;

strcpy(n,a);

}

void getmarks()

{

marks=m+p+c+h+e;

}

void getper()

{

per=(float)marks/5;

}

void getdiv()

{

if(per>=60)

{

strcpy(div,"1st");

}

else if(per<60)

{

strcpy(div,"2nd");

}

else if(per>=40)

{

strcpy(div,"3rd");

}

else

{

strcpy(div,"Fail");

}

}

void display()

{

cout<<"------------------------------";

cout<<"Name :"<<n<<endl;

cout<<"Roll no. :"<<r<<endl;

cout<<"Total Marks :"<<marks<<endl;

cout<<"Percentage :"<<per<<endl;

cout<<"Division :"<<div<<endl;

}

};

int main(){

marks object;

int r,m,p,c,h,e;

char n[20];

cout<<"Enter Name=";

cin.getline(n,20);

cin.ignore();

cout<<"Enter Roll no.=";

cin>>r;

cout<<"Maths=";

cin>>m;

cout<<"Physice=";

cin>>p;

cout<<"Chemistry=";

cin>>c;

cout<<"Hindi=";

cin>>h;

cout<<"English=";

cin>>e;

object.setval(r,m,p,c,h,e,n);

object.getmarks();

object.getper();

object.getdiv();

object.display();

return 0;

}

**//Enter three value and print sum,avg,min,max;**

#include<iostream>

using namespace std;

class add{

private:

int a,b,c,sum=0,avg,min,max;

public:

void setval(int i, int j, int k)

{

a=i;

b=j;

c=k;

}

void getsum()

{

sum=a+b+c;

}

void getavg()

{

avg=sum/3;

}

void getmax()

{

if(a>b)

{

if(a>c)

max=a;

else

max=c;

}

else

{

if(b>c)

max=b;

else

max=c;

}

}

void getmin()

{

if(a<b)

{

if(a<c)

min=a;

else

min=c;

}

else

{

if(b<c)

min=b;

else

min=c;

}

}

void display()

{

cout<<"Sum is="<<sum<<endl;

cout<<"Avg is="<<avg<<endl;

cout<<"Max is="<<max<<endl;

cout<<"Min is="<<min<<endl;

}

};

int main(){

add object;

int a,b,c;

cout<<"Enter three value=";

cin>>a>>b>>c;

object.setval(a,b,c);

object.getsum();

object.getavg();

object.getmax();

object.getmin();

object.display();

return 0;

}

**//Enter x value and find factorial;**

#include<iostream>

using namespace std;

class fact{

private:

int f=1,x;

public:

void setval(int a)

{

x=a;

}

void getfact()

{

while(x>=1)

{

f=f\*x;

cout<<x<<endl;

x--;

}

}

void display()

{

cout<<"Factorital of "<<f;

}

};

int main(){

fact object;

int x;

cout<<"Enter number=";

cin>>x;

object.setval(x);/

object.getfact();

object.display();

return 0;

}

**//Enter three value and print sum,avg,min,max;**

#include<iostream>

using namespace std;

class add{

private:

int a[10],b,sum=0,avg,min,max;

public:

void setval(int i[])

{

for(b=0;b<=9;b++)

{

a[b]=i[b];

}

}

void getsum()

{

for(b=0;b<=9;b++)

{

sum=sum+a[b];

}

}

void getavg()

{

avg=sum/3;

}

void getmax()

{

max=a[0];

for(b=0;b<=9;b++)

{

if(a[b]>max)

{

max=a[b];

}

}

}

void getmin()

{

min=a[0];

for(b=0;b<=9;b++)

{

if(a[b]<min)

{

min=a[b];

}

}

}

void display()

{

cout<<"Sum is="<<sum<<endl;

cout<<"Avg is="<<avg<<endl;

cout<<"Max is="<<max<<endl;

cout<<"Min is="<<min<<endl;

}

};

int main(){

add object;

int a[10],b;

cout<<"Enter ten value =";

for(b=0;b<=9;b++)

{

cin>>a[b];

}

object.setval(a);

object.getsum();

object.getavg();

object.getmax();

object.getmin();

object.display();

return 0;

}

**//enter ten value and insert new element in arrat using class function;**

#include<iostream>

using namespace std;

class insert{

private:

int a[11],b,p,c;

public:

void setval(int i[], int j, int k)

{

for(b=0;b<=9;b++)

{

a[b]=i[b];

}

p=j;

c=k;

}

void getinsert()

{

for(b=9;b>=p-1;b--)

{

a[b+1]=a[b];

}

a[p-1]=c;

}

void display()

{

for(b=0;b<=10;b++)

{

cout<<a[b]<<endl;

}

}

};

int main(){

insert object;

int a[11],b,p,c;

cout<<"Enter ten value =";

for(b=0;b<=9;b++)

{

cin>>a[b];

}

cout<<"Enter Position =";

cin>>p;

cout<<"Enter Insert =";

cin>>c;

object.setval(a,p,c);

object.getinsert();

object.display();

return 0;

}

**//Enter ten value and delete element in array using class function;**

#include<iostream>

using namespace std;

class del{

private:

int a[10],b,d,f=0,z;

public:

void setval(int i[], int j)

{

for(b=0;b<=9;b++)

{

a[b]=i[b];

}

d=j;

}

void getdelete()

{

for(b=0;b<=9;b++)

{

if(a[b]==d)

{

for(z=b;z<=9;z++)

{

a[z]=a[z+1];

}

break;

}

}

}

void display()

{

cout<<"Now latest array are=\n";

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

{

cout<<a[b]<<endl;

}

}

};

int main(){

del object;

int a[10],b,d;

cout<<"Enter ten value =";

for(b=0;b<=9;b++){

cin>>a[b];

}

cout<<"Enter a no. you want to delete =";

cin>>d;

object.setval(a,d);

object.getdelete();

object.display();

return 0;

}

**//Enter ten value and duplicatevalue zero in array using function;**

#include<iostream>

using namespace std;

class same{

private:

int a[10],b,i;

public:

void setval(int j[])

{

for(b=0;b<=9;b++)

{

a[b]=j[b];

}

}

void getduplicate()

{

for(b=0;b<=9;b++)

{

for(i=b+1;i<=9;i++)

{

if(a[b]==a[i])

{

a[i]=0;

}

}

}

}

void display()

{

for(b=0;b<=9;b++)

{

cout<<a[b]<<endl;

}

}

};

int main(){

same object;

int a[10],b;

cout<<"Enter ten value =";

for(b=0;b<=9;b++)

{

cin>>a[b];

}

object.setval(a);

object.getduplicate();

object.display();

return 0;

}

**//Enter ten value and search element using class;**

#include<iostream>

using namespace std;

class search{

private:

int a[10],b,s,f=0;

public:

void setval(int i[],int j)

{

for(b=0;b<10;b++)

{

a[b]=i[b];

}

s=j;

}

void getfind()

{

for(b=0;b<10;b++)

{

if(a[b]==s)

{

f=1;

break;

}

}

}

void display()

{

if(f==1)

{

cout<<"Element is found"<<endl;

}

else

{

cout<<"Element is not found"<<endl;

}

}

};

int main(){

search object;

int a[10],b,s;

cout<<"Enter ten value in array:"<<endl;

for(b=0;b<10;b++)

{

cin>>a[b];

}

cout<<"Enter search element:"<<endl;

cin>>s;

object.setval(a,s);

object.getfind();

object.display();

return 0;

}

**Banking application**

**ac no.=**

**name=**

**ac type=**

**balance=**

**withdraw=**

**deposit=**

**print them**

**Actype :-**

**1. saving - min bal 5000 deposit limit - 2500**

**2. current - min bal 20000 deposit limit - 5000**

**3. fixed - no partial withdraw facility deposit limit - 10000**

#include<iostream>

#include<string.h>

using namespace std;

class Bank {

private:

int acno;

long int amt;

char name[30],accounttype[30];

long balance;

public:

void OpenAccount()

{

cout<<"Enter Account Number:";

cin >> acno;

cout<<"Account Type:";

cin>>accounttype;

cout<<"Enter Name:";

cin>>name;

cout<<"Enter Balance:";

cin>>balance;

cout<<"---------------------------\n";

}

void getShowAccount()

{

cout<<"Account Number: "<< acno<<endl;

cout<<"Account Type: "<<accounttype<<endl;

cout<<"Name: "<<name<<endl;

cout<<"Balance: "<<balance<<endl;

cout<<"---------------------------\n";

}

void getDeposit(int amt)

{

if(strcmp(accounttype,"saving")==0)

{

if(amt<=2500)

{

balance=balance+amt;

}

else

{

cout<<"You can not enter 2500 below amount to deposit this account";

}

}

else if(strcmp(accounttype,"current")==0)

{

if(amt<=5000)

{

balance=balance+amt;

}

else

{

cout<<"You can not enter 5000 below amount to deposit this account";

}

}

else if(strcmp(accounttype,"fixed")==0)

{

if(amt<=10000)

{

balance=balance+amt;

}

else

{

cout<<"You can not enter 10000 below amount to deposit this account";

}

}

}

void getWithdrawal(int amt)

{

if(strcmp(accounttype,"saving")==0)

{

if(balance-amt>=5000)

{

balance = balance-amt;

}

else

{

cout<<"Not Sufficient Balance For Withdraw";

}

}

else if(strcmp(accounttype,"current")==0)

{

if(balance-amt>=2000)

{

balance = balance-amt;

}

else

{

cout<<"Not Sufficient Balance For Withdraw";

}

}

else if(strcmp(accounttype,"fixed")==0)

{

cout<<"No Partial Withdraw Facility";

}

}

};

int main()

{

Bank object;

int found=0,a,ch;

long int amt;

object.OpenAccount();

do{

// display options

cout<<"\n\tMAIN MANU\n\n1:Show Account Details\n2:Deposit\n3:Withdraw\n4:Exit"<<endl;

cout<<"Please input your choice: ";

cin>>ch;

switch(ch){

case 1: // displating account info

object.getShowAccount();

break;

case 2: // deposit operation

cout<<"Enter Amount you want to deposit? ";

cin>>amt;

object.getDeposit(amt);

break;

case 3: // withdraw operation

cout<<"Enter Amount you want to withdraw? ";

cin>>amt;

object.getWithdrawal(amt);

break;

case 4: // exit

cout<<"Have a nice day"<<endl;

break;

default:

cout<<"Wrong Option"<<endl;

}

} while(ch!=4);

return 0;

}

**Class in Array**:-

**Array of Objects - we can create an array of objects also in c++. it is just like array of structures in C . advantage is that when we create an arry of object , all of the members of that object also gets copied so we need not to create array for those members seperately.**

**// enter 10 values in array and count a. perfect b. prime c. palindrome d. armstrong**

#include<iostream>

using namespace std;

class count {

private:

int a[10],b,c,i,p,r,f,x;

int count=0,sum=0,primecount=0,perfectcount=0,palindromecount=0,armstrongcount=0;

public:

void setval(int m[]) {

for(b=0;b<10;b++)

{

a[b]=m[b];

}

}

void getprime(){

for(b=0;b<10;b++)

{

i=0;

for(c=2;c<a[b];c++)

{

if(a[b]%c==0)

{

i=1;

break;

}

}

if(i==0)

{

primecount++;

}

}

}

void getperfect(){

for(b=0;b<=9;b++)

{

sum=0;

for(c=1;c<a[b];c++)

{

if(a[b]%c==0)

{

sum=sum+c;

}

}

if(sum==a[b])

{

perfectcount++;

}

}

}

void getpalindrome(){

for(b=0;b<=9;b++)

{

i=0;

for(c=a[b];c>0;c=c/10)

{

r=c%10;

i=(i\*10)+r;

}

if(i==a[b])

{

palindromecount++;

}

}

}

void getarmstrong(){

for(b=0;b<=9;b++)

{

count=0;

for(i=a[b];i>0;i=i/10)

{

count++;

}

sum=0;

for(x=a[b];x!=0;x=x/10)

{

r=x%10;

f=1;

p=count;

while(p>=1)

{

f=f\*r;

p--;

}

sum=sum+f;

}

if(sum==a[b])

{

armstrongcount++;

}

}

}

void display() {

cout<<"Total Prime No: "<<primecount<<endl;

cout<<"Total Perfect No: "<<perfectcount<<endl;

cout<<"Total Palindrome No: "<<palindromecount<<endl;

cout<<"Total Armstrong No: "<<armstrongcount<<endl;

}

};

int main(){

count object;

int a[10],b;

cout<<"Enter 10 value in array: "<<endl;

for(b=0;b<10;b++)

{

cin>>a[b];

}

object.setval(a);

object.getprime();

object.getperfect();

object.getpalindrome();

object.getarmstrong();

object.display();

return 0;

}

**// enter roll, name and five subject marks of a student and find total, percenta and division for five student**

#include<iostream>

#include<string.h>

using namespace std;

class marks{

private:

int r,marks[5],i,total;

char div[20],n[20];

public:

float per;

void setval(int i, int k[], char a[])

{

int q;

r=i;

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

{

marks[q]=k[q];

}

strcpy(n,a);

}

void getmarks()

{

total=0;

for(i=0;i<=4;i++)

{

total=total+marks[i];

}

}

void getper()

{

per=(float)total/5;

}

void getdiv()

{

if(per>=60)

{

strcpy(div,"1st");

}

else if(per<60)

{

strcpy(div,"2nd");

}

else if(per>=40)

{

strcpy(div,"3rd");

}

else

{

strcpy(div,"Fail");

}

}

void display()

{

cout<<r<<"\t\t"<<n<<"\t\t"<<total<<"\t\t"<<per<<"\t\t"<<div;

}

};

int main(){

marks object[5]; // this statement is create an array of objects

marks faltu;

int marks[5],r,i,j,t;

char n[20];

float per[5];

for(i=0;i<3;i++)

{

cout<<"Enter Roll no.=";

cin>>r;

cout<<"enter five subject marks\n";

for(j=0;j<=4;j++)

{

cin>>marks[j];

}

cout<<"Enter Name=";

cin>>n;

object[i].setval(r,marks,n);

object[i].getmarks();

object[i].getper();

object[i].getdiv();

}

for(i=0;i<3;i++)

{

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

{

if(object[i].per<object[j].per)

{

faltu=object[i];

object[i]=object[j];

object[j]=faltu;

}

}

}

cout<<"\t\t-:Table Of Formate:-\t"<<endl;

cout<<"-------------------------------------------------------\n";

cout<<"Roll\t\tName\t\tTotal\t\tPercentage\tDivision\tRank\n";

cout<<"-------------------------------------------------------\n";

for(i=0;i<3;i++)

{

object[i].display();

cout<<"\t"<<i+1<<endl;

}

return 0;

}

**// enter code, name, and salary of employee and find hra,da,ta,gs,pf,ns**

#include<iostream>

#include<string.h>

using namespace std;

class income{

private:

int salary,hra,da,ta;

char n[20];

public:

int gs,pf,ns;

void setval(int i, char k[])

{

salary=i;

strcpy(n,k);

}

void gethra()

{

hra=(12\*salary)/100;

}

void getda()

{

da=(20\*salary)/100;

}

void getta()

{

ta=(5\*salary)/100;

}

void getgs()

{

gs=salary+hra+da+ta;

}

void getpf()

{

pf=(15\*salary)/100;

}

void getns()

{

ns=gs-pf;

}

void display()

{

cout<<salary<<"\t\t"<<n<<"\t\t"<<gs<<"\t\t"<<pf<<"\t\t"<<ns<<endl;

}

};

int main(){

income object[5];

int salary,i,gssum=0,pfsum=0,nssum=0;

char n[20];

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

{

cout<<"Enter Salary: ";

cin>>salary;

cout<<"Enter Name: ";

cin>>n;

object[i].setval(salary,n);

object[i].gethra();

object[i].getda();

object[i].getta();

object[i].getgs();

object[i].getpf();

object[i].getns();

}

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

{

gssum=gssum+object[i].gs;

pfsum=pfsum+object[i].pf;

nssum=nssum+object[i].ns;

}

cout<<"\t\t\t-:Table Of Formate:-\t"<<endl;

cout<<"Salary"<<"\t\t"<<"Name"<<"\t\t"<<"Gs"<<"\t\t"<<"Pf"<<"\t\t"<<"Ns"<<"\n";

cout<<"---------------------------------------------------------------------\n";

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

{

object[i].display();

}

cout<<"---------------------------------------------------------------------\n";

cout<<"Total:\t\t\t\t"<<gssum<<"\t\t"<<pfsum<<"\t\t"<<nssum;

return 0;

}

**Class within string**:-

**//Enter sentence and count**

**1.Digits 48-57**

**2.Vowels**

**3.Consonants**

**4.Words**

**5.Symbols**

**6.Capital letters 65-90**

**7.Small letters 97-122**

**8.Repetative letters**

#include<iostream>

#include<string.h>

using namespace std;

class words{

private:

int l,i,j,dc,vc,conc,wc,syc,capitalc,smallc,repetc;

char b[200];

public:

void setval(int x,char k[])

{

l=x;

for(i=0;i<=l-1;i++)

{

b[i]=k[i];

}

}

void getDigits()

{

dc=0;

for(i=0;i<=l-1;i++)

{

if(b[i]>=48 && b[i]<=57)

{

dc++;

}

}

}

void getVowels()

{

vc=0;

for(i=0;i<=l-1;i++)

{

if(b[i]=='a'|| b[i]=='e' || b[i]=='i' || b[i]=='o' || b[i]=='u' || b[i]=='A'|| b[i]=='E' || b[i]=='I' || b[i]=='O' || b[i]=='U')

{

vc++;

}

}

}

void getConsonants()

{

conc=0;

for(i=0;i<=l-1;i++)

{

if(b[i]>=65&& b[i]<=90)

{

if(b[i]!='A' && b[i]!='E'&& b[i]!='I'&& b[i]!='O'&& b[i]!='U')

{

conc++;

}

}

else if(b[i]>=97 && b[i]<=122)

{

if(b[i]!='a' && b[i]!='e'&& b[i]!='i'&& b[i]!='o'&& b[i]!='u')

{

conc++;

}

}

}

}

void getWords()

{

wc=0;

for(i=0;i<=l-1;i++)

{

if(b[i]==' ')

{

wc++;

}

}

}

void getsymbols()

{

syc=0;

for(i=0;i<=l-1;i++)

{

if(!(b[i]>=65 && b[i]<=90) && !(b[i]>=97 && b[i]<=122) && !(b[i]>=48 && b[i]<=57) && !(b[i]==' '))

{

syc++;

}

}

}

void getCapitalLetters()

{

capitalc=0;

for(i=0;i<=l-1;i++)

{

if(b[i]>=65 && b[i]<=90)

{

capitalc++;

}

}

}

void getSmallLetter()

{

smallc=0;

for(i=0;i<=l-1;i++)

{

if(b[i]>=97 && b[i]<=122)

{

smallc++;

}

}

}

void getRepetativesLatters()

{

repetc=0;

for(i=0;i<=l-1;i++)

{

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

{

if(b[i]==b[j])

{

repetc++;

}

}

}

}

void display()

{

cout<<"Total Letters: "<<l<<endl;

cout<<"Total Digits: "<<dc<<endl;

cout<<"Total Vowels: "<<vc<<endl;

cout<<"Total Consonants: "<<conc<<endl;

cout<<"Total Words : "<<wc+1<<endl;

cout<<"Total Symbols: "<<syc<<endl;

cout<<"Total Capital Letter: "<<capitalc<<endl;

cout<<"Total Small Letter: "<<smallc<<endl;

cout<<"Total Repetatives Letter: "<<repetc<<endl;

}

};

int main(){

words object;

int l,i;

char b[200];

cout<<"Enter sentence: ";

gets(b);

l=strlen(b);

object.setval(l,b);

object.getDigits();

object.getVowels();

object.getConsonants();

object.getWords();

object.getsymbols();

object.getCapitalLetters();

object.getSmallLetter();

object.getRepetativesLatters();

object.display();

return 0;

}

**// enter string in find sub string.**

#include<iostream>

#include<string.h>

using namespace std;

class sub{

private:

int l,i;

char b[200],sub[200];

public:

void setval(int x, char k[])

{

l=x;

for(int i=0;i<=l-1;i++)

{

b[i]=k[i];

}

}

void getsubs(int start, int end)

{

int j=0;

for(i=start;i<=end;i++,j++)

{

sub[j]=b[i];

}

sub[j]='\0';

}

void display()

{

cout<<"Sub String: "<<sub;

}

};

int main(){

sub object;

int l,p,q;

char b[200];

cout<<"Enter sentence: ";

gets(b);

l=strlen(b);

cout<<"enter starting index: ";

cin>>p;

cout<<"Enter ending index: ";

cin>>q;

object.setval(l,b);

object.getsubs(p,q);

object.display();

return 0;

}

**//Enter string and sort string length wise(ram is a good boy--> a is ram boy good)**

#include<iostream>

#include<string.h>

using namespace std;

int main(){

char str[20],temp[20][20];

int j=0,k=0;

cin.getline(str,20);

for(int i=0;str[i]!='\0';i++)

{

if(str[i]==' ')

{

temp[j][k] = '\0';

j++;

k=0;

}

else if(str[i+1]=='\0')

{

temp[j][k] = str[i];

temp[j][k+1] = '\0';

j++;

}

else

{

temp[j][k] = str[i];

k++;

}

}

int lengths[j][2];

for(int i=0;i<j;i++)

{

lengths[i][0] = i;

lengths[i][1] = strlen(temp[i]);

}

for(int i=0;i<j;i++)

{

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

{

if(lengths[i][1] > lengths[p][1])

{

int temparr[1][2];

temparr[0][0] = lengths[i][0];

temparr[0][1] = lengths[i][1];

lengths[i][0] = lengths[p][0];

lengths[i][1] = lengths[p][1];

lengths[p][0] = temparr[0][0];

lengths[p][1] = temparr[0][1];

}

}

}

for(int i=0;i<j;i++)

{

cout<<temp[lengths[i][0]]<<" ";

}

return 0;

}

**//Enter x and find factorial of x;**

#include<iostream>

using namespace std;

class factorial{

private:

int f=1,x,i;

public:

void setval(int a)

{

x=a;

}

void getfact()

{

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

{

f=f\*i;

}

}

void display()

{

cout<<"Factorial of "<<f<<endl;

}

};

int main(){

factorial object;

int x;

cout<<"Enter x: ";

cin>>x;

object.setval(x);

object.getfact();

object.display();

return 0;

}

**Outside the class deinfation –**

**in this method a function is only declared inside the class but it is created outside the class using scope resolution**

**operator (::) .**

**//Enter x and find factorial of x with outside the class defination**

#include<iostream>

using namespace std;

class factorial{

private:

int f,x,i;

public:

void setval(int a)

{

x=a;

}

void getfact();

void display()

{

cout<<"Factorial of "<<f<<endl;

}

};

void factorial :: getfact()

{

f=1;

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

{

f=f\*i;

}

}

int main(){

factorial object;

int x;

cout<<"Enter x: ";

cin>>x;

object.setval(x);

object.getfact();

object.display();

return 0;

}

**Object as function argument:-**

**//Enter three value and find average.**

#include<iostream>

using namespace std;

class average{

public:

int a,b,c;

void setval(int i,int j,int k)

{

a=i;

b=j;

c=k;

}

void display()

{

cout<<"first value "<<a<<endl;

cout<<"Second value"<<b<<endl;

cout<<"Third value "<<c<<endl;

}

};

void getaverage(average obj) **// getaverage naam ka function kuch bhi return nahin kar raha**

**lekin average class ke object ko recv kar raha hai**

{

float m;

m=(obj.a+obj.b+obj.c)/3;

cout<<"average is "<<m<<endl;

}

int main(){

average object;

int a,b,c;

cout<<"Enter three value: ";

cin>>a>>b>>c;

object.setval(a,b,c);

object.display();

getaverage(object); **// this line demonstrates object as function argument.**

return 0;

}

**Object as function argument - if an object of a class is passed to a function as an argument, then it is called as object as function argument. advantage is that when we pass an object as a function argument, all of the members of that class also gets automatically transfered , so we need not to transfer them individually.**

**//enter 10 values in array and count 3 digit prime values in it. (object as function argument)**

#include<iostream>

using namespace std;

class count{

public:

int a[10],i,primecount=0;

void setval(int k[])

{

for(i=0;i<10;i++)

{

a[i]=k[i];

}

}

};

void getprime(count x)

{

int i,b,f,primecount=0,l;

for(i=0;i<10;i++)

{

f=0;

if(x.a[i]>99&&x.a[i]<1000){

for(b=2;b<x.a[i];b++)

{

if(x.a[i]%b==0)

{

f=1;

break;

}

}

if(f==0)

{

primecount++;

}

}

}

cout<<"Total Prime count: "<<primecount;

}

int main(){

count object;

int a[10],i;

cout<<"Enter 10 value: ";

for(i=0;i<10;i++)

{

cin>>a[i];

}

object.setval(a);

getprime(object);

return 0;

}

**// dot product of two matrics**

#include<iostream>

using namespace std;

class matrix{

public:

int a[3][3],c[3][3],i,j;

void setval(int x[][3])

{

for(i=0;i<3;i++)

{

for(j=0;j<3;j++)

{

a[i][j]=x[i][j];

}

}

}

void display()

{

for(i=0;i<3;i++)

{

for(j=0;j<3;j++)

{

cout<<" "<<a[i][j];

}

cout<<"\n";

}

}

};

void getmatrix(matrix p, matrix q)

{

int i,j,c[3][3],k;

cout<<"Result for first and second matrix:\n";

for(i=0;i<=2;i++)

{

for(j=0;j<=2;j++)

{

c[i][j]=0;

for(k=0;k<=2;k++)

{

c[i][j]=c[i][j]+p.a[i][k]\*q.a[k][j];

}

cout<<" "<<c[i][j];

}

cout<<"\n";

}

}

int main(){

matrix object1,object2;

int a[3][3],b[3][3],c[3][3],i,j;

cout<<"Enter First matrix:\n";

for(i=0;i<3;i++)

{

for(j=0;j<3;j++)

{

cin>>a[i][j];

}

}

cout<<"Enter Second matrix:\n";

for(i=0;i<3;i++)

{

for(j=0;j<3;j++)

{

cin>>b[i][j];

}

}

object1.setval(a);

object1.display();

object2.setval(b);

object2.display();

getmatrix(object1,object2);

return 0;

}

**//enter current date,birth date and print your current age;**

#include<iostream>

using namespace std;

class age{

public:

int a,b,c,age;

void setval(int i,int j,int k)

{

a=i;

b=j;

c=k;

}

};

void getage(age p, age q)

{

int a,b,c,date,month,year;

date=p.a-q.a;

month=p.b-q.b;

year=p.c-q.c;

if(date<0)

{

date=date+30;

month=month-1;

}

if(month<0)

{

month=month+12;

year=year-1;

}

cout<<"Age is: "<<year<<" Year "<<month<<" Month "<<date<<" Days";

}

int main(){

age object1,object2;

int a,b,c,x,y,z;

cout<<"Enter Current Date: ";

cin>>a>>b>>c;

cout<<"Enter Birth Date: ";

cin>>x>>y>>z;

object1.setval(a,b,c);

object2.setval(x,y,z);

getage(object1,object2);

return 0;

}

**Returning Objects** - **agar koi function class ke object ko return kare to ise returning objects kehte hain**

**//Enter current date and birth date and find your current age;**

#include<iostream>

using namespace std;

class age{

public:

int d,m,y,age;

void setval(int i,int j,int k)

{

d=i;

m=j;

y=k;

}

void displayumar()

{

cout<<"your age is "<<y<<" years ,"<<m<<" months and "<<d<< " days";

}

};

age getage(age p, age q)

{

age umar;

umar.d=p.d-q.d;

umar.m=p.m-q.m;

umar.y=p.y-q.y;

if(umar.d<0)

{

umar.d=umar.d+30;

umar.m=umar.m-1;

}

if(umar.m<0)

{

umar.m=umar.m+12;

umar.y=umar.y-1;

}

return(umar);

}

int main(){

age object1,object2,finalage;

int d,m,y,x,s,z;

cout<<"Enter Current Date: ";

cin>>d>>m>>y;

cout<<"Enter Birth Date: ";

cin>>x>>s>>z;

object1.setval(d,m,y);

object2.setval(x,s,z);

finalage=getage(object1,object2);

finalage.displayumar();

return 0;

}

**// add two time periods and add them**

#include<iostream>

using namespace std;

class time{

public:

int h,m,s,t;

void setval(int i,int j,int k)

{

h=i;

m=j;

s=k;

}

void displaytime()

{

cout<<"Time is: "<<h<<" hours "<<m<<" minutes "<<s<<" seconds";

}

};

time gettime(time p,time q)

{

time t;

t.h=p.h+q.h;

t.m=p.m+q.m;

t.s=p.s+q.s;

if(t.h>60)

{

t.h=t.h+60;

t.m=t.m-1;

}

if(t.m>60)

{

t.m=t.m+60;

t.s=t.s-1;

}

return(t);

}

int main(){

time object1,object2,finaltime;

int h,m,s,x,y,z;

cout<<"Enter Current Time: ";

cin>>h>>m>>s;

cout<<"Add time periods: ";

cin>>x>>y>>z;

object1.setval(h,m,s);

object2.setval(x,y,z);

finaltime=gettime(object1,object2);

finaltime.displaytime();

return 0;

}

**// enter name and surname and concatenate them**

#include<iostream>

#include<string.h>

using namespace std;

class name{

public:

char n[20],s[20],f,l,sl;

void setval(char i[])

{

strcpy(n,i);

}

void displayname()

{

cout<<"Name:"<<n;

}

};

name getname(name p, name q)

{

name f;

int i,j=0;

for(i=0;p.n[i]!='\0'; j++,i++)

{

f.n[j]=p.n[i];

}

f.n[j]=' ';

j++;

for(i=0;q.n[i]!='\0'; j++,i++)

{

f.n[j]=q.n[i];

}

f.n[j]='\0';

return(f);

}

int main(){

name object1,object2,finalname;

char n[20],s[20];

cout<<"Enter Name: ";

cin>>n;

cout<<"Enter Surname: ";

cin>>s;

object1.setval(n);

object2.setval(s);

finalname=getname(object1,object2);

finalname.displayname();

return 0;

}

**Method overloading :-**

if there are multiple functions in a class or a program with same name but different signatures then it is called as method overloading.

**//find simple interst**

#include<iostream>

using namespace std;

void si(){

int amt,rate,year,si;

amt=3400;

rate=4.4;

year=5;

si=amt\*rate\*year/100;

cout<<"simple interst is "<<si<<endl;

}

void si(int aa){

int amt,rate,year,si;

amt=aa;

rate=4.4;

year=5;

si=amt\*rate\*year/100;

cout<<"simple interst is "<<si<<endl;

}

void si(int aa,int rr) {

int amt,rate,year,si;

amt=aa;

rate=rr;

year=5;

si=amt\*rate\*year/100;

cout<<"simple interst is "<<si<<endl;

}

void si(int aa,int rr,int yy) {

int amt,rate,year,si;

amt=aa;

rate=rr;

year=yy;

si=amt\*rate\*year/100;

cout<<"simple interst is "<<si<<endl;

}

int main(){

si();

si(12000);

si(15000,4);

si(9000,5.5,6);

return 0;

}

#include<iostream>

using namespace std;

void si() {

int amt,rate,year,si;

cout<<"Enter amt: ";

cin>>amt;

cout<<"Enter rate: ";

cin>>rate;

cout<<"Enter year: ";

cin>>year;

si=amt\*rate\*year/100;

cout<<"simple interst is "<<si<<endl;

cout<<"-------------------------------\n";

}

void si(int aa) {

int amt,rate,year,si;

amt=aa;

cout<<"Enter rate: ";

cin>>rate;

cout<<"Enter year: ";

cin>>year;

si=amt\*rate\*year/100;

cout<<"simple interst is "<<si<<endl;

cout<<"------------------------------\n";

}

void si(int aa,int rr) {

int amt,rate,year,si;

amt=aa;

rate=rr;

cout<<"Enter year: ";

cin>>year;

si=amt\*rate\*year/100;

cout<<"simple interst is "<<si<<endl;

cout<<"------------------------------\n";

}

void si(int aa,int rr,int yy) {

int amt,rate,year,si;

amt=aa;

rate=rr;

year=yy;

si=amt\*rate\*year/100;

cout<<"simple interst is "<<si<<endl;

cout<<"------------------------------\n";

}

int main(){

int aa,rr,yy;

// question 1

si();

// question 2

cout<<"Enter amt: ";

cin>>aa;

si(aa);

// question 3

cout<<"Enter amt: ";

cin>>aa;

cout<<"Enter rate: ";

cin>>rr;

si(aa,rr);

// question 4

cout<<"Enter amt: ";

cin>>aa;

cout<<"Enter rate: ";

cin>>rr;

cout<<"Enter year: ";

cin>>yy;

si(aa,rr,yy);

return 0;

}

#include<iostream>

using namespace std;

class smi{

private:

int amt,rate,year,si;

public:

void getsi() {

int amt,rate,year,si;

cout<<"Enter amt: ";

cin>>amt;

cout<<"Enter rate: ";

cin>>rate;

cout<<"Enter year: ";

cin>>year;

si=amt\*rate\*year/100;

cout<<"simple interst is "<<si<<endl;

cout<<"-------------------------------\n";

}

void getsi(int aa) {

int amt,rate,year,si;

amt=aa;

cout<<"Enter rate: ";

cin>>rate;

cout<<"Enter year: ";

cin>>year;

si=amt\*rate\*year/100;

cout<<"simple interst is "<<si<<endl;

cout<<"------------------------------\n";

}

void getsi(int aa,int rr) {

int amt,rate,year,si;

amt=aa;

rate=rr;

cout<<"Enter year: ";

cin>>year;

si=amt\*rate\*year/100;

cout<<"simple interst is "<<si<<endl;

cout<<"------------------------------\n";

}

void getsi(int aa,int rr,int yy) {

int amt,rate,year,si;

amt=aa;

rate=rr;

year=yy;

si=amt\*rate\*year/100;

cout<<"simple interst is "<<si<<endl;

cout<<"------------------------------\n";

}

};

int main(){

smi object;

int aa,rr,yy;

// question 1

object.getsi();

// question 2

cout<<"Enter amt: ";

cin>>aa;

object.getsi(aa);

// question 3

cout<<"Enter amt: ";

cin>>aa;

cout<<"Enter rate: ";

cin>>rr;

object.getsi(aa,rr);

// question 4

cout<<"Enter amt: ";

cin>>aa;

cout<<"Enter rate: ";

cin>>rr;

cout<<"Enter year: ";

cin>>yy;

object.getsi(aa,rr,yy);

return 0;

}

**Default Argument:-**

**//Example base**

#include<iostream>

using namespace std;

int main(){

float amount;

float value(float p,int n,float r=0.15); //prototype

void printline(char ch='\*', int len=40); //prototype

printline(); //user default values for arguments

amount=value(5000.00,5); //default for 3rd argument

cout<<"\n Final value = "<<amount<<"\n\n";

printline('='); //use default value for 2nd argument

return 0;

}

/\*-----------------------------------------------------\*/

float value(float p,int n,float r){

int year = 1;

float sum = p;

while (year<=n) {

sum=sum\*(1+r);

year=year+1;

}

return(sum);

}

void printline(char ch, int len)

{

for(int i=1;i<=len;i++) cout<<ch;

cout<<"\n";

}

**//find simple interst with using defaltu argument**

#include<iostream>

using namespace std;

int main(){

float si;

float simpleinterst(float p, float r, float y=2);

si=simpleinterst(2000,20);

cout<<"Simple Interst: "<<si<<endl;

return 0;

}

float simpleinterst(float p, float r, float y){

float si;

si=p\*r\*y/100;

return(si);

}

**//find simple interst with using defaltu argument**

#include<iostream>

using namespace std;

void si(){

float si;

float simpleinterst(float p, float r, float y=2);

si=simpleinterst(2000,200);

cout<<"Simple Interst: "<<si<<endl;

}

void si(float p){

float si;

float simpleinterst(float p, float r , float y=2);

si=simpleinterst(p,20);

cout<<"Simple Intrest: "<<si<<endl;

}

void si(float p, float r){

float si;

float simpleinterst(float p , float r , float y=2);

si=simpleinterst(p,r);

cout<<"Simple Intrest: "<<si<<endl;

}

void si(float p, float r , float y){

float si;

float simpleinterst(float p, float r, float y);

si=simpleinterst(p,r,y);

cout<<"Simple Intrest: "<<si<<endl;

}

int main(){

si();

si(1200);

si(1200,20);

si(2000,20,4);

return 0;

}

float simpleinterst(float p, float r, float y){

float si;

si=p\*r\*y/100;

return(si);

}

**Static Class Member:-**

**Basic Meaning of Static Storage Class**

**1**. static variable is automatically initialized to zero

**2**. static variable is initialized only once.

**Use of Static in Object Oriented Programming**

**1**. a static variable is shared between the objects of the class.

**2**. a static variable is not maintained seperately for all the object of class.

**3**. a static variable is automatically initialized to zero

**4**. a static variable is necessary to be declared outisde the class with the help of scope resolution operator **(::)**

#include<iostream>

using namespace std;

class item{

static int count;

int number;

public:

void getdata(int a)

{

number=a;

count++;

}

void getcount(void)

{

cout<<"count: "<<endl;

cout<<count<<"\n";

}

};

int item :: count;

int main(){

item a,b,c; //count is initilized to zera

a.getcount(); // display count

b.getcount();

c.getcount();

a.getdata(100);

b.getdata(200);

c.getdata(300);

cout<<"After reading data"<<"\n";

a.getcount();

b.getcount();

c.getcount();

return 0;

}

**//print value of a using static member class**

#include<iostream>

using namespace std;

int main() {

int i;

for(i=1;i<=10;i++)

{

static int a;

cout<<a<<endl;

a++;

}

return(0);

}

**Static Member Function:-**

**1**. A static member function is shared between the objects of the class.

**2**. A static member function is called using the class name, not the object.

we call it like **classname::function()**

#include<iostream>

using namespace std;

class test{

int code;

static int count;

public:

void setcode(void)

{

code= ++count;

}

void showcode(void)

{

cout<<"object number: "<<code<<"\n";

}

static void showcount(void)

{

cout<<"count: "<<count<<"\n";

}

};

int test::count;

int main(){

test t1,t2;

t1.setcode();

t2.setcode();

test::showcount();

test t3;

t3.setcode();

test::showcount();

t1.showcode();

t2.showcode();

t3.showcode();

return 0;

}

**Friend Function:-**

**A friend funcition possessec certain special charaacteristics:**

**1**. it is not in the scope of the class to which it has been declared as friend.

**2**. since it is not in the scope of the class, it cannot be called using the object if that class.

**3**. it can be invoked like a normal function without the help of any object.

**4**. unlike member function, it cannot access the member names directly and has to use an object name and dot membership operator with each member name (e.g. A.x)

**5**. it can be declared either in the public or the private part of a class without affecting its meaning.

**6**. usually, it has the objects as argument.

**7**. private variables using as a public variables with friend function.

#include<iostream>

using namespace std;

class sample{

int a;

int b;

public:

void setval()

{

a=25;

b=40;

}

friend float mean(sample s);

};

float mean(sample s)

{

return(s.a + s.b)/2.0;

}

int main(){

sample x; //object x

x.setval();

cout<<"Mean value = "<<mean(x)<<"\n";

return 0;

}

**//friend function with in two class**

#include<iostream>

using namespace std;

class num;

class sample{

int a,b;

public:

void setval()

{

a=25;

b=40;

}

friend void mean(sample s , num n);

};

class num{

int x,y;

public:

void setval()

{

x=10;

y=15;

}

friend void mean(sample s, num n);

};

void mean(sample s , num n)

{

float q,p;

p=(s.a + s.b)/2.0;

cout<<p<<endl;

q=(n.x + n.y)/2.0;

cout<<q<<endl;

}

int main(){

sample i; //object x

i.setval();

num j;

j.setval();

mean(i,j);

return 0;

}

**//friend function with in two class**

#include<iostream>

using namespace std;

class num;

class sample{

int a,b,i,j;

public:

void setval()

{

a=25;

b=40;

}

friend num mean(sample s , num n);

};

class num{

int x,y;

public:

void setval()

{

x=10;

y=15;

}

void display()

{

cout<<x<<endl;

cout<<y<<endl;

}

friend num mean(sample s, num n);

};

num mean(sample s , num n)

{

num q;

q.x=(s.a + n.x)/2.0;

q.y=(s.b+n.y)/2;

return(q);

}

int main(){

num r;

sample i;

i.setval();

num j;

j.setval();

r=mean(i,j);

r.display();

return 0;

}

**//enter current date , birth date and find current age using one friend class;**

#include<iostream>

using namespace std;

class mydate{

int d,m,y;

public:

void setval(int a, int b, int c)

{

d=a;

m=b;

y=c;

}

void displayage()

{

cout<<"Your Age: "<<y<<" Year "<<m<<" Month "<<d<<" Days ";

}

friend mydate age(mydate t, mydate t1);

};

mydate age(mydate t , mydate t1){

mydate s;

int date,year,month;

s.d=t.d-t1.d;

s.m=t.m-t1.m;

s.y=t.y-t1.y;

if(s.d<0)

{

s.d=s.d+30;

s.m=s.m-1;

}

if(s.m<0)

{

s.m=s.m+12;

s.y=s.y-1;

}

return(s);

}

int main(){

mydate obj1,obj2,finalage;

int d,m,y,d1,m1,y1;

cout<<"Enter current date, month, year: "<<endl;

cin>>d>>m>>y;

cout<<"Enter birth date, month, year: "<<endl;

cin>>d1>>m1>>y1;

obj1.setval(d,m,y);

obj2.setval(d1,m1,y1);

finalage=age(obj1,obj2);

finalage.displayage();

return 0;

}

**//enter current date , birth date and find current age using two friend class;**

#include<iostream>

using namespace std;

class birth;

class date{

int d,m,y;

public:

void setval(int a, int b, int c)

{

d=a;

m=b;

y=c;

}

friend void age(birth b , date t);

};

class birth{

int i,j,k;

public:

void setval(int x, int y, int z)

{

i=x;

j=y;

k=z;

}

friend void age(birth b , date t);

};

void age(birth b ,date t){

int date,year,month;

date=t.d-b.i;

month=t.m-b.j;

year=t.y-b.k;

if(date<0)

{

date=date+30;

month=month-1;

}

if(month<0)

{

month=month+12;

year=year-1;

}

cout<<"Your Age: "<<year<<" Year "<<month<<" Month "<<date<<" Days ";

}

int main(){

int d,m,y,i,j,k;

cout<<"Enter current date, month, year: "<<endl;

cin>>d>>m>>y;

cout<<"Enter birth date, month, year: "<<endl;

cin>>i>>j>>k;

date p;

p.setval(d,m,y);

birth q;

q.setval(i,j,k);

age(q,p);

return 0;

}

**// dot product of two matrics wiht using friend function.**

#include<iostream>

using namespace std;

class matrix{

int a[3][3],i,j;

public:

void setval(int x[][3])

{

for(i=0;i<3;i++)

{

for(j=0;j<3;j++)

{

a[i][j]=x[i][j];

}

}

}

friend void matric(matrix p, matrix q);

};

void matric(matrix p, matrix q){

int i,j,c[3][3],k;

cout<<"Result for first and second matrix:\n";

for(i=0;i<=2;i++)

{

for(j=0;j<=2;j++)

{

c[i][j]=0;

for(k=0;k<=2;k++)

{

c[i][j]=c[i][j]+p.a[i][k]\*q.a[k][j];

}

cout<<" "<<c[i][j];

}

cout<<"\n";

}

}

int main(){

matrix obj1,obj2;

int a[3][3],b[3][3],c[3][3],i,j;

cout<<"Enter First matrix:\n";

for(i=0;i<3;i++)

{

for(j=0;j<3;j++)

{

cin>>a[i][j];

}

}

cout<<"Enter Second matrix:\n";

for(i=0;i<3;i++)

{

for(j=0;j<3 ;j++)

{

cin>>b[i][j];

}

}

obj1.setval(a);

obj2.setval(b);

matric(obj1,obj2);

return 0;

}

**// dot product of two matrics without using friend function.**

#include<iostream>

using namespace std;

class matrix{

public:

int a[3][3],b[3][3],c[3][3],i,j;

void setval(int x[][3])

{

for(i=0;i<3;i++)

{

for(j=0;j<3;j++)

{

a[i][j]=x[i][j];

}

}

}

void display()

{

for(i=0;i<=2;i++)

{

for(j=0;j<=2;j++)

{

cout<<" "<<c[i][j];

}

cout<<"\n";

}

}

};

matrix getmatric(matrix p, matrix q){

matrix m;

int i,j,c[3][3],k;

cout<<"Result for first and second matrix:\n";

for(i=0;i<=2;i++)

{

for(j=0;j<=2;j++)

{

m.c[i][j]=0;

for(k=0;k<=2;k++)

{

m.c[i][j]=m.c[i][j]+p.a[i][k]\*q.a[k][j];

}

}

}

return(m);

}

int main(){

matrix obj1,obj2,multi;

int a[3][3],b[3][3],c[3][3],i,j;

cout<<"Enter First matrix:\n";

for(i=0;i<3;i++)

{

for(j=0;j<3;j++)

{

cin>>a[i][j];

}

}

cout<<"Enter Second matrix:\n";

for(i=0;i<3;i++)

{

for(j=0;j<3;j++)

{

cin>>b[i][j];

}

}

obj1.setval(a);

obj2.setval(b);

multi=getmatric(obj1,obj2);

multi.display();

return 0;

}

**Swaping Class:-**

**//Enter two value and swaping**

#include<iostream>

using namespace std;

class second;

class first{

int a;

public:

void setval()

{

a=5;

}

void display()

{

cout<<"first a : "<<a<<endl;

}

friend void swap(first &f, second &s);

};

class second{

int a1;

public:

void setval()

{

a1=50;

}

void display()

{

cout<<"second a : "<<a1<<endl;

}

friend void swap(first &f, second &s);

};

void swap(first &f, second &s){

int x;

x=f.a;

f.a=s.a1;

s.a1=x;

}

int main(){

first i;

i.setval();

second j;

j.setval();

swap(i,j);

i.display();

j.display();

return 0;

}