**Function Overloading**

#include<iostream>

#include<cmath>

using namespace std;

class cal

{

public:

void calculate()

{

cout<<"Welcome to function overloading programme..\n\n\n";

}

int calculate(int a)

{

if(a<0)

cout<<"Absolute value : " << abs(a) << "\n";

else

cout<<"Absolute value : " << a << "\n";

}

float calculate(int b, float c)

{

float s,r;

r=b;

s=r+c;

cout<<"Sum of numbers : "<< s <<"\n";

}

void calculate(int m, int n ,int o)

{

int temp;

if(m>=n && m>=o)

cout<< m <<" is maximum\n";

else if(n>=m && n>=o)

cout<< n <<" is maximum\n";

else

cout<< o <<" is maximum\n";

}

};

int main()

{

int a,b,m,n,o;

float c;

cal obj;

cout<<"Function with 0 parameter : \n";

obj.calculate();

cal obj1;

cout<<"Function with 1 parameter : \n";

cout<<"Enter the integer : ";

cin>>a;

obj1.calculate(a);

cout<<"\n";

cal obj2;

cout<<"Function with 2 parameter : \n";

cout<<"Enter the integer value : ";

cin>>b;

cout<<"Enter the float value : ";

cin>>c;

obj2.calculate(b,c);

cout<<"\n";

cal obj3;

cout<<"Function with 3 parameter : \n";

cout<<"Enter the integer value : ";

cin>>m;

cout<<"Enter the integer value : ";

cin>>n;

cout<<"Enter the integer value : ";

cin>>o;

obj3.calculate(m,n,o);

return 0;

}

------------------------------------------------------------------------

2) Constructor

#include<iostream>

using namespace std;

class rectangle

{

private:

int length;

int breadth;

public:

rectangle()

{

length=0;

breadth=0;

}

rectangle(int s)

{

length=s;

breadth=s;

}

rectangle(int l, int b)

{

length=l;

breadth=b;

}

~rectangle()

{

cout<<"\nObject destroyed successfully!!\n";

}

void area()

{

int a=length\*breadth;

cout<<"Area is : "<<a<<endl;

}

};

int main()

{

cout<<"\nDefault constructor\n";

rectangle r1;

r1.area();

cout<<"\nconstructor with 1 parameter\n";

rectangle r2(2);

r2.area();

cout<<"\nconstructor with 2 parameters\n";

rectangle r3(2,7);

r3.area();

cout<<"\nImplicit constructor\n";

rectangle r4(r3);

r4.area();

cout<<"\nExplicit constructor\n";

rectangle r5= rectangle (5,6);

r5.area();

return 0;

}

-------------------------------------------------------------

3) **Friend function Salary Sum**

#include<iostream>

#include<string>

using namespace std;

class employee

{

string name;

int salary;

public:

employee()

{

cin.ignore();

cout<<"\nEnter employee name : ";

getline(cin,name);

cout<<"Enter the salary of employee : ";

cin>>salary;

}

~employee()

{

cout<<"Object destroyed successfully !!"<<"\n";

}

friend int add(employee e[], int n);

friend void names(employee e[], int n);

};

int add(employee e[], int n)

{

int total=0,i;

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

{

total=total + e[i].salary;

}

return total;

}

void names(employee e[], int n)

{

int i;

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

cout<<"Name of "<<i+1<<" employee : "<<e[i].name<<"\n";

}

int main()

{

int i,n;

cout<<"Enter the total number of employees to input : ";

cin>>n;

employee e1[n];

cout<<"\n\t\tNames of employees are \n";

names(e1,n);

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

e1[i];

cout<<"\nTotal Salary is : "<<add(e1,n)<<"\n";

cout<<"\n";

return 0;

}

--------------------------------------------------------------------------------

4.)**Bank Ass Array of Object**

#include<iostream>

#include<string>

using namespace std;

class bank

{

private:

string name;

int ac\_no;

string ac\_type;

long int balance;

public:

void get();

void display();

};

void bank :: get(void)

{

cin.ignore();

cout<<"Enter your name : ";

getline(cin,name);

cout<<"Enter your ac number : ";

cin>>ac\_no;

cin.ignore();

cout<<"Enter your ac type : ";

getline(cin,ac\_type);

cout<<"Enter your balance : ";

cin>>balance;

}

void bank :: display(void)

{

cout<<"Your name : "<<name;

cout<<"\nYour ac number : "<<ac\_no;

cout<<"\nYour ac type : "<<ac\_type;

cout<<"\nYour balance : "<<balance;

}

int main()

{

int i,j,n;

cout<<"Enter number of user data to input : ";

cin>>n;

bank b[n];

cout<<"\t\tEnter your details \n";

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

{

cout<<"Owner number "<<i+1<<"\n";

b[i].get();

}

cout<<"\n\t\tYour details are : \n";

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

{

cout<<"\nOwner number "<<j+1<<"\n";

b[j].display();

}

cout<<"\n";

return 0;

}

-------------------------------------------------------------------------------

**Exception Handling**

**#include<iostream>**

**using namespace std;**

**class job**

**{**

**public:**

**int eno;**

**float salary;**

**job()**

**{**

**cout<<"Enter employee number : ";**

**cin>>eno;**

**cout<<"Enter salary : ";**

**cin>>salary;**

**try**

**{**

**if(eno<0)**

**throw eno;**

**if(isdigit(eno))**

**throw eno;**

**}**

**catch(int a)**

**{**

**cout<<"\nError!! Employee number must be integer type : "<<a<<"\n";**

**}**

**try**

**{**

**if(salary<=60000 || salary>=100000)**

**throw salary;**

**}**

**catch(float b)**

**{**

**cout<<"\nInvalid salary input : "<<b<<"\n";**

**}**

**}**

**friend void display();**

**};**

**void display(job j)**

**{**

**cout<<"Employee number : "<<j.eno<<endl;**

**cout<<"Employee salary : "<<j.salary<<endl;**

**}**

**int main()**

**{**

**job j;**

**cout<<"\n\t\tDATA\n";**

**display(j);**

**}**

-----------------------------------------------------------------------------

**Template**

#include<iostream>

using namespace std;

template<class T>

void sort(T arr[], int SIZE)

{

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

{

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

if(arr[i]>arr[j])

{

T temp;

temp=arr[i];

arr[i]=arr[j];

arr[j]=temp;

}

}

}

int main()

{

int N,i,j;

cout<<"Enter the no of elements : ";

cin>>N;

int array[N];

float array1[N];

cout<<"Enter integer array elements :"<<endl;

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

{

cin>>array[i];

}

sort(array,N);

cout<<"after sorting they are :"<<endl;

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

{

cout<<array[i]<<"\t";

}

cout<<"\nEnter floating array elements:"<<endl;

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

{

cin>>array1[j];

}

sort(array1,N);

cout<<"after sorting they are :"<<endl;

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

{

cout<<array1[j]<<"\t";

}

cout<<"\n";

}

--------------------------------------------------------------------------

**File Handling**

**#include<iostream>**

**#include<fstream> //importing predefined fstream class which contains file operation arguments**

**using namespace std;**

**int main()**

**{**

**char ch; //declaring type variable as char**

**ifstream obj1; //Created object for reading**

**ofstream obj2; //Created object for writing**

**obj1.open("file1.txt"); //opened file 1 for reading**

**obj2.open("file2.txt"); //opened file 2 for reading**

**obj1.get(ch); //get character from file 1**

**while(!obj1.eof()) //read character from file1 till the end of file**

**{**

**obj2.put(ch); //put is used to write character to file2**

**cout<<ch; //to display character written in file2**

**obj1.get(ch); //get is used to display all the character's from file 1 till end of file**

**}**

**obj1.close(); //closing file 1**

**obj2.close(); //closing file 2**

**}**

**----------------------------------------------------------------------**

**Area**

**#include<iostream>**

**using namespace std;**

**class area**

**{**

**private:**

**int l;**

**int b;**

**int r;**

**public:**

**void rectangle(int l,int b);**

**void circle(float r);**

**void triangle(float b,float h);**

**};**

**void area :: rectangle(int l,int b)**

**{**

**int a1=l\*b;**

**cout<<"Area is :"<<a1;**

**}**

**void area :: triangle(float b,float h)**

**{**

**float a3=0.5\*b\*h;**

**cout<<"Area is :"<<a3;**

**}**

**void area :: circle(float r)**

**{**

**float pi=3.14;**

**float a2=pi\*r\*r;**

**cout<<"Area is : "<<a2;**

**}**

**int main()**

**{**

**int m,l1,l2,r1,h1,b1;**

**area ar;**

**cout<<"MENU\n1. Rectangle\n2. Circle\n3. triangle\n";**

**while(m!=4)**

**{**

**cout<<"\nEnter your choice : ";**

**cin>>m;**

**switch(m)**

**{**

**case 1:**

**{**

**cout<<"Enter the length : ";**

**cin>>l1;**

**cout<<"Enter the breadth : ";**

**cin>>l2;**

**ar.rectangle(l1,l2);**

**break;**

**}**

**case 2:**

**{**

**cout<<"Enter radius : ";**

**cin>>r1;**

**ar.circle(r1);**

**break;**

**}**

**case 3:**

**{**

**cout<<"Enter the base : ";**

**cin>>h1;**

**cout<<"Enter the height : ";**

**cin>>b1;**

**ar.rectangle(h1,b1);**

**break;**

**}**

**default:**

**{**

**cout<<"Invalid !!";**

**}**

**}**

**}**

**return 0;**

**}**

**----------------------------------------------------------------------------**

**This Pointer**

**#include<iostream>**

**using namespace std ;**

**class test //creating class with name test**

**{**

**int a,b; //declaring private data members of class**

**public:**

**void setdata(int a1, int a2) //creating parameterized member function with 2 parameters**

**{**

**this->a=a1; //pointer storing the value of a in a1**

**this->b=a2; //pointer storing the value of b in a2**

**}**

**void printdata() //creating default member function to print values**

**{**

**cout<<"\na : "<<a; //print value of a**

**cout<<"\nb : "<<b; //print value of b**

**}**

**};**

**int main()**

**{**

**test obj;**

**int a1,a2;**

**cout<<"Enter value of a : ";**

**cin>>a1;**

**cout<<"Enter value of b : ";**

**cin>>a2;**

**obj.setdata(a1,a2); //parameterized function to assign values to a1 and a2**

**obj.printdata(); //Calling function printdata()**

**cout<<"\n";**

**}**