**Lab sheet – 5**

**TITLE**: CONSTRUCTOR AND DISTRUCTOR

**Objective:**-

* To be familiar with constructor and destructor and how to use them.
* To be familiar with constructor overloading.

**THER0Y:**

Constructor and it’s type:

**1.Source code:**

#include<iostream>

#include<string.h>

using namespace std;

class bowlers{

private:

char name[20];

float overs\_bowled;

int run\_given, wicket;

public:

// using constructor for initializing data;

bowlers(char n[], float o, int r, int w){

strcpy(name,n);

overs\_bowled= o;

run\_given= r;

wicket= w;

}

void display(){

cout<<"\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_"<<endl;

cout<<"Name of the bowler:"<<name<<endl;

cout<<"Overs bowled:"<<overs\_bowled<<endl;

cout<<"Run given:"<<run\_given<<endl;

cout<<"Wicket taken:"<<wicket<<endl;

cout<<"\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_"<<endl;

}

};

int main(){

cout<<"Enter the number of bowlers:"<<endl;

int n;

cin>>n;

char n1[20];

int o1, r1, w1;

for(int i=1; i<=n; i++){

cout<<"Enter name of the bowler "<<i<<":"<<endl;

cin>>n1;

cout<<"Enter the over bowled:"<<endl;

cin>>o1;

cout<<"Enter the Run given:"<<endl;

cin>>r1;

cout<<"Enter the number of wicket taken:"<<endl;

cin>>w1;

} for(int i=1; i<=n; i++){

cout<<"The details of the bowler"<<i<<" are:"<<endl;

bowlers b(n1, o1, r1, w1);

b.display();}

return 0;

}

**2.Source code:**

#include<iostream>

#include<string.h>

using namespace std;

class employee{

private:

int code;

char name[20];

char address[50];

int salary;

public:

employee(int c, char n[], char a[], int s){

code= c;

strcpy(name,n);

strcpy(address,a);

salary= s;

}

employee(){

}

void display(){

cout<<"Code => "<<code<<endl;

cout<<"Name => "<<name<<endl;

cout<<"Address => "<<address<<endl;

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

}

employee( employee &e){

code= e.code;

strcpy(name,e.name);

strcpy(address,e.address);

salary= e.salary;

}

};

int main(){

int c1, s1;

char nn[20], aa[50];

cout<<"Enter the code of employee:"<<endl;

cin>>c1;

cout<<"Enter the name of employee:"<<endl;

cin>>nn;

cout<<"Enter the address of employee:"<<endl;

cin>>aa;

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

cin>>s1;

employee e1(c1, nn, aa, s1);

employee e2(e1);

cout<<"The information of the employee e1 are:"<<endl;

e1.display();

cout<<"The information of the employee e2 are:"<<endl;

e2.display();

return 0;

}

**OUTPUT:**

Enter the code of employee:

67

Enter the name of employee:

sala

Enter the address of employee:

johan

Enter the salary of employee:

90000

The information of the employee e1 are:

Code => 67

Name => sala

Address => johan

Salary => 90000

The information of the employee e2 are:

Code => 67

Name => sala

Address => johan

Salary => 90000

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

Process exited after 23.13 seconds with return value 0

Press any key to continue . . .

**3.SOURCE CODE:**

#include<iostream>

using namespace std;

class time{

private:

int hour, minute, second;

public:

time(int h, int m, int s){

hour= h;

minute= m;

second= s;

}time(){

}

void addtime(time t1, time t2){

second= t1.second + t2.second;

minute= second/60;

second= second%60;

minute= minute + t1.minute + t2.minute;

hour= minute/60;

minute= minute%60;

hour = hour + t1.hour + t2.hour;

}

void display(){

cout<<hour<<" : "<<minute<<" : "<<second<<endl;

}

};

int main(){

int h1, h2, m1, m2, s1, s2;

cout<<"Enter the first time in hour, minute and second:"<<endl;

cin>>h1>>m1>>s1;

cout<<"Enter the second time in hour, minute and second:"<<endl;

cin>>h2>>m2>>s2;

time t3(h1, m1, s1);

time t4(h2, m2, s2);

time t5;

t5.addtime(t3,t4);

t5.display();

return 0;

}

**OUTPUT:**

Enter the first time in hour, minute and second:

5

56

34

Enter the second time in hour, minute and second:

2

45

34

8 : 42 : 8

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

Process exited after 19.13 seconds with return value 0

Press any key to continue . . .

**4.SOURCE CODE:**

#include <iostream>

#include <string.h>

using namespace std;

class person{

private:

char name[20], address[50];

int age;

int citizenship\_no;

public:

person (char n[],char a[], int y,int c ){

strcpy(name,n);

strcpy(address, a);

age= y;

citizenship\_no= c;

}

void display(){

cout<<"Name => "<<name<<endl;

cout<<"Address => "<<address<<endl;

cout<<"Age => "<<age<<endl;

if(age>=16){

cout<<"Citizenship number => "<<citizenship\_no<<endl;

}

}

};

int main(){

char n1[20], a1[50];

int y1, c;

cout<<"Enter name of the person:"<<endl;

cin>>n1;

cout<<"Enter the address of the person:"<<endl;

cin>>a1;

cout<<"Enter the age of the person:"<<endl;

cin>>y1;

if(y1>=16){

cout<<"Enter the citizenship no:"<<endl;

cin>>c;

}

person p1(n1, a1, y1, c);

p1.display();

return 0;

}

**OUTPUT:**

Enter name of the person:

virat

Enter the address of the person:

barcilona

Enter the age of the person:

34

Enter the citizenship no:

4756353

Name => virat

Address => barcilona

Age => 34

Citizenship number => 4756353

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

Process exited after 24.63 seconds with return value 0

Press any key to continue . . .

**5.SOURCE CODE:**

#include<iostream>

using namespace std;

class complex{

private:

int real, imag;

public:

complex(){

cout<<"Enter the first complex no in the form of real and imaginary:"<<endl;

cin>>real>>imag;

}

complex(int r, int i){

real = r;

imag = i;

}

complex ( complex &c){

real = c.real;

imag = c.imag;

}

void addcomplex(int a, int b){

real = real + a;

imag = imag + b;

}

void display(){

cout<<"The sum of the given complex numbers is :"<<endl<<real<<" + "<<imag<<"i"<<endl;

}

};

int main(){

complex c1;

int r1, i1;

cout<<"Enter the second complex no in the form of real and imaginary:"<<endl;

cin>>r1>> i1;

complex c2(r1, i1);

complex c3(c2);

c1.addcomplex(r1, i1);

c1.display();

return 0;

}

**OUTPUT:**

Enter the first complex no in the form of real and imaginary:

4

3

Enter the second complex no in the form of real and imaginary:

5

6

The sum of the given complex numbers is :

9 + 9i

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Process exited after 8.228 seconds with return value 0

Press any key to continue . . .

**6.SOURCE CODE:**

#include<iostream>

#include<string.h>

using namespace std;

class mountain{

private:

char name[20];

int height;

char location[20];

public:

mountain(char n[], int h, char l[]){

strcpy(name,n);

height= h;

strcpy(location, l);

}

void cmpheight(mountain m1, mountain m2){

if (m1.height > m2.height){

strcpy(name,m1.name);

height = m1.height;

strcpy(location,m1.location);

}else

strcpy(name,m2.name);

height = m2.height;

strcpy(location,m2.location);

}

void dispinf(){

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

cout<<"height:"<<height<<endl;

cout<<"Location:"<<location<<endl;

}

};

int main(){

char n1[20], l1[20],n2[20], l2[20];

int h1,h2;

cout<<"Enter the information of first mountain:"<<endl;

cout<<"Enter name of the mountain:"<<endl;

cin>>n1;

cout<<"Enter height of the mountain:"<<endl;

cin>>h1;

cout<<"Enter location of the mountain:"<<endl;

cin>>l1;

cout<<"Enter the information of second mountain:"<<endl;

cout<<"Enter name of the mountain:"<<endl;

cin>>n2;

cout<<"Enter height of the mountain:"<<endl;

cin>>h2;

cout<<"Enter location of the mountain:"<<endl;

cin>>l2;

mountain m1(n1, h1, l1);

mountain m2(n2, h2, l2);

m1.cmpheight(m1, m2);

cout<<"The information of mountain with the greatest height :"<<endl;

m1.dispinf();

return 0;

}

**OUTPUT:**

Enter the information of first mountain:

Enter name of the mountain:

everest

Enter height of the mountain:

8848

Enter location of the mountain:

solukhumbu

Enter the information of second mountain:

Enter name of the mountain:

kanjiruwa

Enter height of the mountain:

6654

Enter location of the mountain:

jumla

The information of mountain with the greatest height :

Name:everest

height:8848

Location:solukhumbu

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Process exited after 56.4 seconds with return value 0

Press any key to continue . . .