Lab 3.1 : Copy Constructor

#include <iostream>

using namespace std;

//copy constructor

class Sample{

int x;

string d;

public:

Sample();

Sample(Sample &);

void display();

void input();

};

Sample::Sample(){

x = 0;

d = "";

}

Sample::Sample(Sample & U){

x = U.x;

d = U.d;

}

void Sample::input(){

cout<<"Enter x:";

cin>>x;

cin.ignore();

cout<<"Enter textstring:";

getline(cin,d);

}

void Sample::display(){

cout<<"X :"<<x<<"\nText:"<<d<<"\n";

}

int main(){

Sample X;

X.input();

cout<<"Copying contents into another object...\n";

Sample Y(X);

cout<<"Displaying second object\n";

Y.display();

return 0;

}

Lab 3.2

#include <bits/stdc++.h>

//parameterized constructors

using namespace std;

class Student{

string name;

int age;

float cgpa;

public :

Student();

Student(string,int,float);

void display();

void getinfo();

};

Student::Student(){

name = "";

age = 0;

cgpa = 0;

}

Student::Student(string n,int a = 0,float f = 0){

name = n;

age = a;

cgpa = f;

}

void Student::display(){

cout<<"Student Details\n";

cout<<"Name : "<<name<<"\n";

cout<<"Age : "<<age<<"\n";

cout<<"cgpa : "<<cgpa<<"\n";

}

void Student::getinfo(){

cout<<"Enter Student Details\n";

cout<<"Name : "<<"\n";

getline(cin, name);

cout<<"Age : "<<"\n";

cin>>age;

cout<<"cgpa : "<<"\n";

cin>>cgpa;

}

int main(){

Student X;

X.getinfo(); //calling member function

Student Y("Joshua Higgs", 19, 9.99); //parameterized constructor

X.display();

Y.display();

return 0;

}

Lab 3.3 : Destructor

#include <iostream>

#include <cstring>

#include <string.h>

using namespace std;

//destructors

class Wolf{

int age;

float weight;

char \* name;

public:

Wolf(int,float,char \* x);

void display();

~Wolf();

};

Wolf::Wolf(int a,float w, char \* x){

age = a;

weight = w;

int n = strlen(x);

name = new char[n+1];

strcpy(name,x);

}

void Wolf::display(){

cout<<"Wolf named "<<name<<", age "<<age<<", weighing "<<weight;

cout<<" kgs is very dangerous\n";

}

Wolf::~Wolf(){

delete name;

cout<<"Destroying object after main closed with destructor\n";

}

int main(){

char \* s = (char \*)malloc(sizeof(char)\*15);

strcpy(s,"Saruman");

Wolf A(3,140.3,s);

A.display();

cout<<"Last line of main\n";

return 0;

}