Assignment (CS211)- 07

1. Write a C++ Program that illustrate single inheritance.

2. Write a C++ Program that illustrate multipe inheritance.

3. Write a C++ Program that illustrate multi level inheritance.

4.Write a C++ Program that illustrate Hierarchical inheritance.

5. Write a C++ program to show inheritance using different levels.

6. Write a program in C++ which creates a multiple inheritance hierarchy of Teacher classes derived from bot Person, Employee classes. Each class must implement a Show() member function and utilize scope resolution operator.

Answer-1

// inheritance.cpp

#include <iostream>

using namespace std;

class base //single base class

{

public:

int x;

void getdata()

{

cout << "Enter the value of x = "; cin >> x;

}

};

class derive : public base //single derived class

{

private:

int y;

public:

void readdata()

{

cout << "Enter the value of y = "; cin >> y;

}

void product()

{

cout << "Product = " << x \* y;

}

};

int main()

{

derive a; //object of derived class

a.getdata();

a.readdata();

a.product();

return 0;

} //end of the program

Answer-2

*#include* <iostream>

using namespace std;

*// create a base class1*

class Base\_class

{

*// access specifier*

    public:

*// It is a member function*

    void display()

    {

        cout << " It is the first function of the Base class " << endl;

    }

};

*// create a base class2*

class Base\_class2

{

*// access specifier*

    public:

*// It is a member function*

    void display2()

    {

        cout << " It is the second function of the Base class " << endl;

    }

};

*/\* create a child\_class to inherit features of Base\_class and Base\_class2 with access specifier. \*/*

class child\_class: public Base\_class, public Base\_class2

{

*// access specifier*

    public:

    void display3() *// It is a member function of derive class*

    {

        cout << " It is the function of the derived class " << endl;

    }

};

int main ()

{

*// create an object for derived class*

    child\_class ch;

    ch.display(); *// call member function of Base\_class1*

    ch.display2(); *// call member function of Base\_class2*

    ch.display3(); *// call member function of child\_class*

}

Answer-3

#include <iostream>

using namespace std;

class A {

public:

void display() {

cout<<"Base class content.";

}

};

class B : public A {};

class C : public B {};

int main() {

C obj;

obj.display();

return 0;

}

Answer-4

// C++ program to demonstrate hierarchical inheritance

#include <iostream>

using namespace std;

// base class

class Animal {

public:

void info() {

cout << "I am an animal." << endl;

}

};

// derived class 1

class Dog : public Animal {

public:

void bark() {

cout << "I am a Dog. Woof woof." << endl;

}

};

// derived class 2

class Cat : public Animal {

public:

void meow() {

cout << "I am a Cat. Meow." << endl;

}

};

int main() {

// Create object of Dog class

Dog dog1;

cout << "Dog Class:" << endl;

dog1.info(); // Parent Class function

dog1.bark();

// Create object of Cat class

Cat cat1;

cout << "\nCat Class:" << endl;

cat1.info(); // Parent Class function

cat1.meow();

return 0;

}

Answer-5

#include <iostream>

using namespace std;

class A {

public:

void display() {

cout<<"Base class content.";

}

};

class B : public A {};

class C : public B {};

int main() {

C obj;

obj.display();

return 0;

}

Answer-6

Assignment (CS211)- 08 (ECE $ MEA)

1. Write a C++ program to write and read object using read and write function.

2. Write a C++ program to demonstrate example of tellg() and tellp() function.

3. Write a C++ Program for Username and Password Registration System.

4. Write a C++ Program to Maintain House Records using File Handling.

Answer-1

*//C++ program to write and read object using read and write function.*

*#include* <iostream>

*#include* <fstream>

using namespace std;

*//class student to read and write student details*

class student

{

    private:

        char name[30];

        int age;

    public:

        void getData(void)

        { cout<<"Enter name:"; cin.getline(name,30);

          cout<<"Enter age:"; cin>>age;

        }

        void showData(void)

        {

        cout<<"Name:"<<name<<",Age:"<<age<<endl;

        }

};

int main()

{

    student s;

    ofstream file;

*//open file in write mode*

    file.open("aaa.txt",ios::out);

*if*(!file)

    {

      cout<<"Error in creating file.."<<endl;

*return* 0;

    }

    cout<<"\nFile created successfully."<<endl;

*//write into file*

    s.getData(); *//read from user*

    file.write((char\*)&s,sizeof(s)); *//write into file*

    file.close(); *//close the file*

    cout<<"\nFile saved and closed succesfully."<<endl;

*//re open file in input mode and read data*

*//open file1*

    ifstream file1;

*//again open file in read mode*

    file1.open("aaa.txt",ios::in);

*if*(!file1){

        cout<<"Error in opening file..";

*return* 0;

    }

*//read data from file*

    file1.read((char\*)&s,sizeof(s));

*//display data on monitor*

    s.showData();

*//close the file*

    file1.close();

*return* 0;

}

Answer-2

//C++ program to demonstrate example of tellg() and tellp() function.

#include <iostream>

#include <fstream>

using namespace std;

int main()

{

fstream file;

//open file sample.txt in and Write mode

file.open("sample.txt",ios::out);

if(!file)

{

cout<<"Error in creating file!!!";

return 0;

}

//write A to Z

file<<"ABCDEFGHIJKLMNOPQRSTUVWXYZ";

//print the position

cout<<"Current position is: "<<file.tellp()<<endl;

file.close();

//again open file in read mode

file.open("sample.txt",ios::in);

if(!file)

{

cout<<"Error in opening file!!!";

return 0;

}

cout<<"After opening file position is: "<<file.tellg()<<endl;

//read characters untill end of file is not found

char ch;

while(!file.eof())

{

cout<<"At position : "<<file.tellg(); //current position

file>>ch; //read character from file

cout<<" Character \""<<ch<<"\""<<endl;

}

//close the file

file.close();

return 0;

}

Answer-3

//C++ program to write and read object using read and write function.

#include <iostream>

#include <fstream>

using namespace std;

//class student to read and write student details

class student

{

private:

char name[30];

int age;

public:

void getData(void)

{ cout<<"Enter name:"; cin.getline(name,30);

cout<<"Enter age:"; cin>>age;

}

void showData(void)

{

cout<<"Name:"<<name<<",Age:"<<age<<endl;

}

};

int main()

{

student s;

ofstream file;

//open file in write mode

file.open("aaa.txt",ios::out);

if(!file)

{

cout<<"Error in creating file.."<<endl;

return 0;

}

cout<<"\nFile created successfully."<<endl;

//write into file

s.getData(); //read from user

file.write((char\*)&s,sizeof(s)); //write into file

file.close(); //close the file

cout<<"\nFile saved and closed succesfully."<<endl;

//re open file in input mode and read data

//open file1

ifstream file1;

//again open file in read mode

file1.open("aaa.txt",ios::in);

if(!file1){

cout<<"Error in opening file..";

return 0;

}

//read data from file

file1.read((char\*)&s,sizeof(s));

//display data on monitor

s.showData();

//close the file

file1.close();

return 0;

}

Answer-4

/\* C++ Program to Maintain House Records using File Handling \*/

#include<fstream>

#include<iostream>

#include<string.h>

#include<stdio.h>

using namespace std;

int opt;

class housing

{

int hno,income;

char name[20],type[20];

public:

void assign()

{

if(income<15000)

strcpy(type,"LIG");

else if(income>=15000)

strcpy(type,"MIG");

else if(income>=25000)

strcpy(type,"HIG");

}

void input()

{

cout<<"\n Enter House Number: ";

cin>>hno;

cout<<"\n House Name: ";

cin>>name;

cout<<"\n Annual Income: ";

cin>>income;

assign();

}

void output()

{

cout<<"House Number: "<<hno<<"\n"<<"House Name: "<<name<<"\n"<<"Annual Income: "<<income<<"\n"<<"Type: "<<type;

}

int retno()

{

return hno;

}

};

int main()

{

housing h,h1;

fstream f;

int hono;

while(true)

{

cout<<"\n 1: Add Record"<<"\n 2: Modify Record"<<"\n 3: Display Records"<<"\n 4: Exit\n"<<endl;

cin>>opt;

if(opt==1)

{

char ch='y';

f.open("C:\\Users\\acer\\Documents\\file4.txt",ios::out|ios::binary|ios::app);

while(ch=='y')

{

cout<<"\n Enter Details: ";

h.input();

f.write((char\*)&h,sizeof(h));

cout<<"\n Want to Enter More? y/n: "<<endl;

cin>>ch;

}

f.close();

}

if(opt==2)

{

cout<<"\n Enter House No of Record to be modified: ";

cin>>hono;

f.open("C:\\Users\\acer\\Documents\\file4.txt",ios::in|ios::out|ios::binary|ios::ate);

f.seekg(0);

while(f.read((char\*)&h,sizeof(h)))

{

if(h.retno()==hono)

{

cout<<"\n New Value: ";

h1.input();

f.seekp(-sizeof(h),ios::cur);

f.write((char\*)&h1,sizeof(h1));

}

}

f.close();

}

if(opt==3)

{

f.open("C:\\Users\\acer\\Documents\\file4.txt",ios::in|ios::binary);

f.seekg(0);

while(f.read((char\*)&h,sizeof(h)))

h.output();

f.close();

}

if(opt==4)

exit(0);

cout<<"\nPress any key to continue...... ";

}

return 0;

}