**REAGAN SIMIYU**

**ENE211-0279/2020**

**COMPUTER PROGRAMMING II ASSIGNMENT 1**

**Question One**

#include<iostream>

using namespace std;

class Computer {

private:

bool awake;

public:

void setAwake(bool awk) {

awake = awk;

}

bool getAwake() {

return awake;

}

};

class Server : public Computer {

private:

int nodes = 1;

public:

void addNode() {

nodes+=1;

}

int getNodes() {

return nodes;

}

};

class Client : public Computer {

public:

void connectToServer() {

cout<<"Connected to server successfully."<<endl;

}

};

int main() {

Server server1;

server1.setAwake(true);

cout<<"Server is awake: "<<server1.getAwake()<<endl;

server1.addNode();

cout<<"Nodes connected to server: "<<server1.getNodes()<<endl;

Client client1;

client1.setAwake(true);

cout<<"CLient is awake: "<<client1.getAwake()<<endl;

client1.connectToServer();

return 0;

}

**Question Two(I)**

#include<iostream>

using namespace std;

class Person {

private:

int age;

string firstname;

string lastname;

public:

Person(int a, string fname, string lname) {

age = a;

firstname = fname;

lastname = lname;

}

void setAge(int a) {

age = a;

}

void setFName(string fname) {

firstname = fname;

}

void setLName(string lname) {

lastname = lname;

}

int getAge() {

return age;

}

string getFName() {

return firstname;

}

string getLName() {

return lastname;

}

};

int main() {

Person member(24,"Reagan","Simiyu");

return 0;

}

**Question Two(Ii)**

#include<iostream>

using namespace std;

class Person {

protected:

int age;

string firstname;

string lastname;

public:

Person(int a, string fname, string lname) {

age = a;

firstname = fname;

lastname = lname;

}

void setAge(int a) {

age = a;

}

void setFName(string fname) {

firstname = fname;

}

void setLName(string lname) {

lastname = lname;

}

int getAge() {

return age;

}

string getFName() {

return firstname;

}

string getLName() {

return lastname;

}

};

class Student: public Person {

private:

string institution;

string regNo;

double YOS;

public:

Student(int a, string fname, string lname,string ins, string regno, double yos) : Person(a,fname,lname) {

institution = ins;

regNo = regno;

YOS = yos;

}

void displayInfo() {

cout<<"firstname: "<<firstname<<endl;

cout<<"lastname: "<<lastname<<endl;

cout<<"age: "<<age<<endl;

cout<<"institution: "<<institution<<endl;

cout<<"registration number: "<<regNo<<endl;

cout<<"Year Of Study: "<<YOS<<endl;

}

};

int main() {

Student student(24,"Reagan","Simiyu","JKUAT","ENE211-0021/2020",3.2);

student.displayInfo();

return 0;

}

**Question 3**

#include <iostream>

#include <string>

using namespace std;

class Student {

protected:

string name;

int age;

string program;

string faculty;

public:

void setName(string n) { name = n; }

void setAge(int a) { age = a; }

void setProgram(string p) { program = p; }

void setFaculty(string f) { faculty = f; }

string getName() { return name; }

int getAge() { return age; }

string getProgram() { return program; }

string getFaculty() { return faculty; }

};

class BSC\_IT : public Student {

private:

string stage;

public:

void setStage(string s) { stage = s; }

string getStage() { return stage; }

};

int main() {

int numStudents;

cout << "How many students do you want to enter? ";

cin >> numStudents;

BSC\_IT students[numStudents];

for (int i = 0; i < numStudents; i++) {

cout << "Enter details for student " << i+1 << ":" << endl;

string name, program, faculty, stage;

int age;

cout << "Name: ";

cin >> name;

students[i].setName(name);

cout << "Age: ";

cin >> age;

students[i].setAge(age);

cout << "Program: ";

cin >> program;

students[i].setProgram(program);

cout << "Faculty: ";

cin >> faculty;

students[i].setFaculty(faculty);

if (faculty == "ICT" && program == "BSC-IT") {

cout << "Stage: ";

cin >> stage;

students[i].setStage(stage);

}

cout << endl;

}

cout << "Student details:" << endl;

for (int i = 0; i < numStudents; i++) {

cout << "Name: " << students[i].getName() << endl;

cout << "Age: " << students[i].getAge() << endl;

cout << "Program: " << students[i].getProgram() << endl;

cout << "Faculty: " << students[i].getFaculty() << endl;

if (students[i].getFaculty() == "ICT" && students[i].getProgram() == "BSC-IT") {

cout << "Stage: " << students[i].getStage() << endl;

}

cout << endl;

}

return 0;

}