Name: Muhammad Zohaib khan

Reg# BSE203003

Subject: OOP LAB

Lab: 10

Instructor: Sir Qaisar Manzoor

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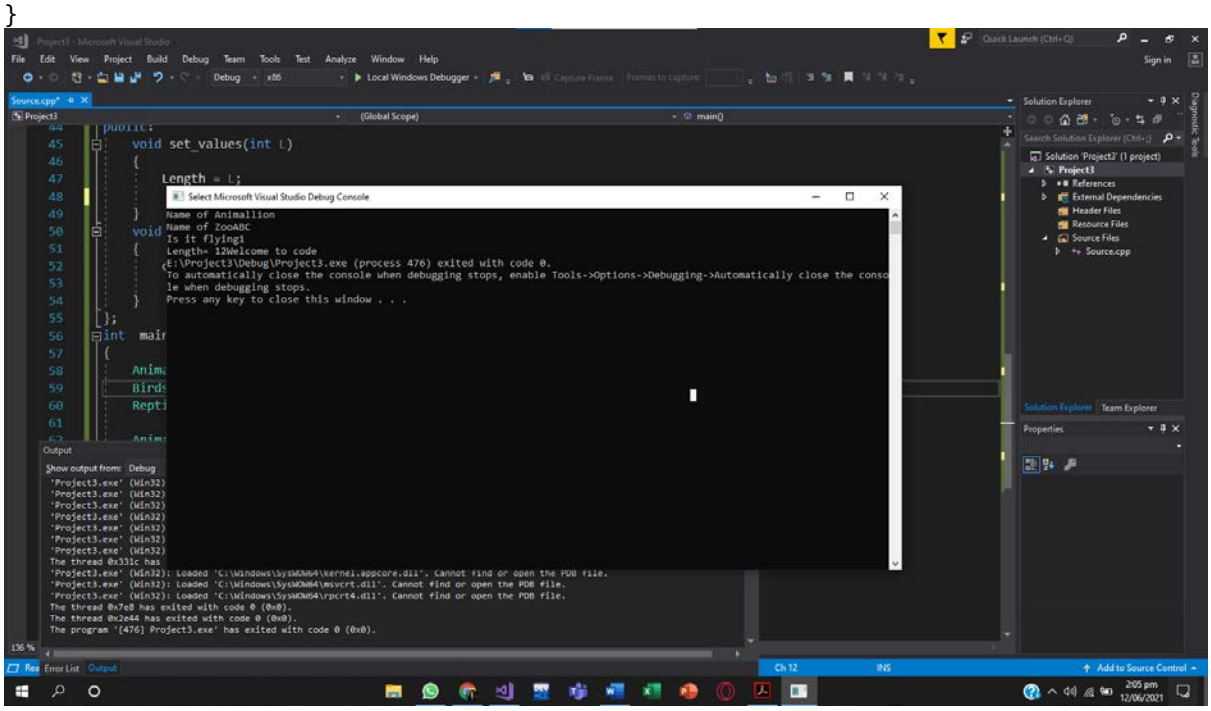
Practice Task 1:

```
#include<iostream>
#include<string>
using namespace std;
class Animal {
protected:

	string Name;
	string Zoo;
public:


	virtual void show()
	{
		cout << "Welcome to code";

	}
};
class Birds :public Animal {
protected:
	bool flying;
public:
	void set_name(string name, string zoo)
	{
		Name = name;
		Zoo = zoo;
	}
	void set_values(bool n)
	{
		flying = n;

	}
	void show()
	{
		cout << "Name of Animal" << Name << endl;
		cout << "Name of Zoo" << Zoo << endl;
		cout << "Is it flying" << flying << endl;

	}
};
class Reptiles :public Animal
{
protected:
	int Length;
public:
	void set_values(int L)
	{
		Length = L;

	}
	void show()
	{
		cout << "Length= " << Length;

	}
};
int  main()
{
	Animal Ani;
	Birds bds;
	Reptiles rep;
```

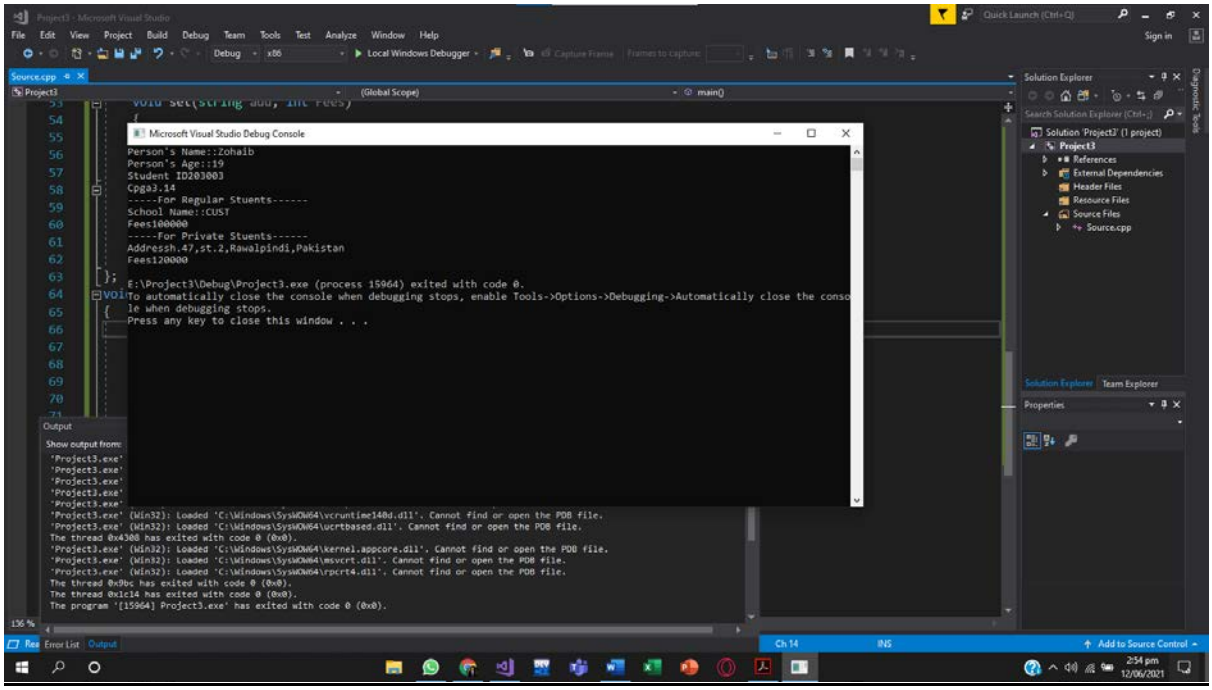
```
        Animal *obj1 = &bds;
        Animal *obj2 = &rep;
        Animal *obj3 = &Ani;
        bds.set_name("lion", "ABC");

        bds.set_values(1);
        rep.set_values(12);
        obj1->show();
        obj2->show();
          obj3->show();
}
```



Practice Task 2:

```
#include<iostream>
#include<string>
using namespace std;
class Person {
protected:
        string Person_name;
        int Person_age;
public:
        virtual void print() = 0;
};
class Student : public Person {
protected:
        int std_id;
        float Cgpa;
public:
        void valuesAssigned(string name, int age, int id, float cgpa)
        {
                Person_name = name;
                Person_age = age;
                std_id = id;
                Cgpa = cgpa;
        }
        void print()
        {
```

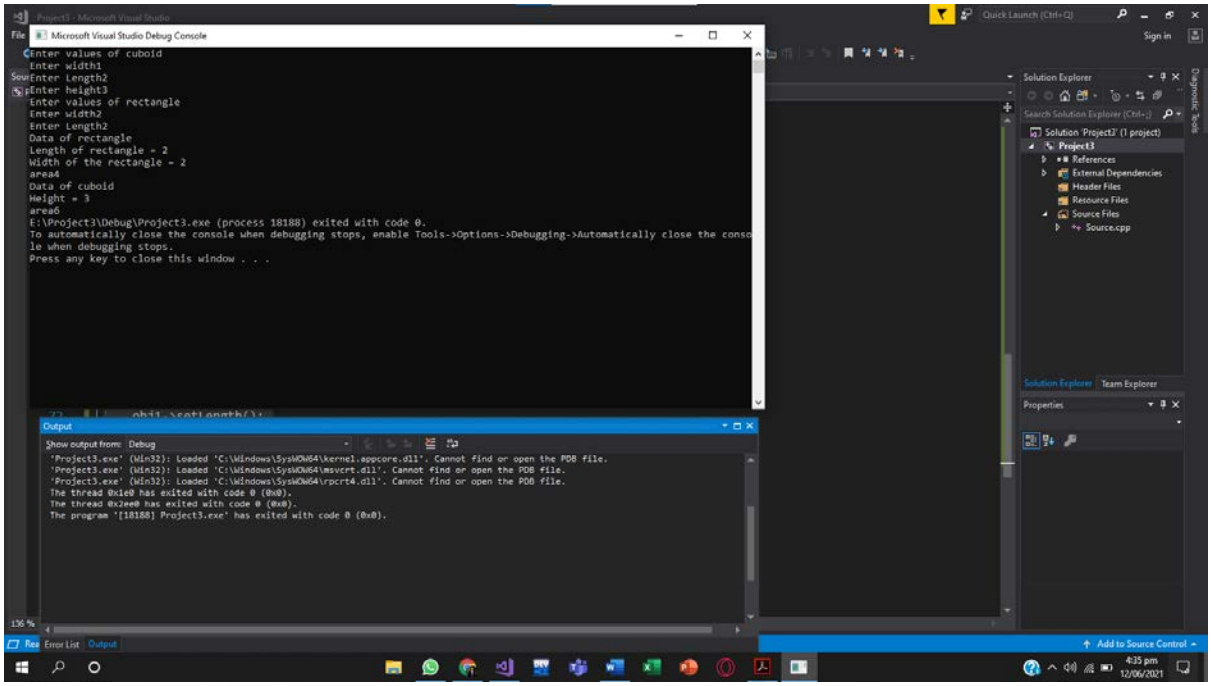
```
                cout << "Person's Name::" << Person_name << endl;
                cout << "Person's Age::" << Person_age << endl;
                cout << "Student ID" << std_id << endl;
                cout << "Cpga" << Cgpa << endl;
        }

};
class Regular :public Student {
protected:
        string school;
        int fee;
public:
        void values(string School, int Fee)
        {
                school = School;
                fee = Fee;
        }
        void print()
        {
                cout << "School Name::" << school << endl;
                cout << "Fees" << fee << endl;
        }
};
class Private :public Student {
protected:
        string Address;
        int fees;
public:
        void set(string add, int Fees)
        {
                Address = add;
                fees = Fees;
        }
        void print()
        {
                cout << "Address" << Address << endl;
                cout << "Fees" << fees << endl;
        }
};
void main()
{
        Student std;
        Regular reg;
        Private pvt;
        Student *obj1 = &reg;
        Student *obj2 = &pvt;
        Student *obj3 = &std;
        std.valuesAssigned("Zohaib", 19, 203003, 3.14);
        reg.values("CUST", 100000);
        pvt.set("h.47,st.2,Rawalpindi,Pakistan", 120000);

        obj3->print();
        cout << "-----For Regular Stuents------" << endl;
        obj1->print();
        cout << "-----For Private Stuents------" << endl;
        obj2->print();

    }
```



Practice Task 3:

```
#include<iostream>
#include<string>
using namespace std;
class GeometricShape {
public:
	virtual void show() = 0;
};
class Rectangle :public GeometricShape {
protected:
	int length, width;
public:
	void setLength()
	{
		cout << "Enter Length";
		cin >> length;
	}
	int getLength()
	{
		return length;
	}
	void setWidth()
	{
		cout << "Enter width";
		cin >> width;
	}
	int getWidth()
	{
		return width;
	}
	int computeArea()
	{
		return length * width;
	}
	void show()
	{
		cout << "Length of rectangle = " << getLength() << endl;
```

```
                cout << "Width of the rectangle = " << getWidth() << endl;

        }
};
class Cuboid :public Rectangle {
protected:
        int height;
public:
        void setHeight()
        {
                cout << "Enter height";
                cin >> height;
        }
        int getWidth()
        {
                return height;
        }
        int computeArea()
        {
                return height * length*width;
        }
        void show()
        {
                cout << "Height = " << height << endl;
        }
};
void main()
{

        Rectangle rec;
        Cuboid cube;
        Cuboid *obj1 = &cube;
        Rectangle *obj2 = &rec;
        cout << "Enter values of cuboid" << endl;
        obj1->setWidth();
        obj1->setLength();
        obj1->setHeight();
        cout << "Enter values of rectangle" << endl;
        obj2->setWidth();
        obj2->setLength();
        cout << "Data of rectangle" << endl;
        obj2->show();
        cout << "area" << obj2->computeArea() << endl;;
        cout << "Data of cuboid" << endl;
        obj1->show();
        cout << "area" << obj1->computeArea();
}
```


Microsoft Visual Studio Debug Console
Enter values of cuboid
Enter width1
Enter Length2
Enter height3
Enter values of rectangle
Enter width2
Enter Length2
Data of rectangle
Length of rectangle = 2
Width of the rectangle = 2
area4
Data of cuboid
Height = 3
area6
E:\Project3\Debug\Project3.exe (process 18188) exited with code 0.
To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the conso
le when debugging stops.
Press any key to close this window . . .
Output
Show output from: Debug
'Project3.exe' (Win32): Loaded 'C:\Windows\SysWOW64\kernel.appcore.dll'. Cannot find or open the PDB file.
'Project3.exe' (Win32): Loaded 'C:\Windows\SysWOW64\msvcrt.dll'. Cannot find or open the PDB file.
'Project3.exe' (Win32): Loaded 'C:\Windows\SysWOW64\rpcrt4.dll'. Cannot find or open the PDB file.
The thread 0x1e0 has exited with code 0 (0x0).
The thread 0x2ee0 has exited with code 0 (0x0).
The program '[18188] Project3.exe' has exited with code 0 (0x0).
Solution Explorer
Solution 'Project3' (1 project)
Project3
References
External Dependencies
Header Files
Resource Files
Source Files
Source.cpp
Properties
Error List
Output
Add to Source Control
4:35 pm
12/06/2021