TASK – 01

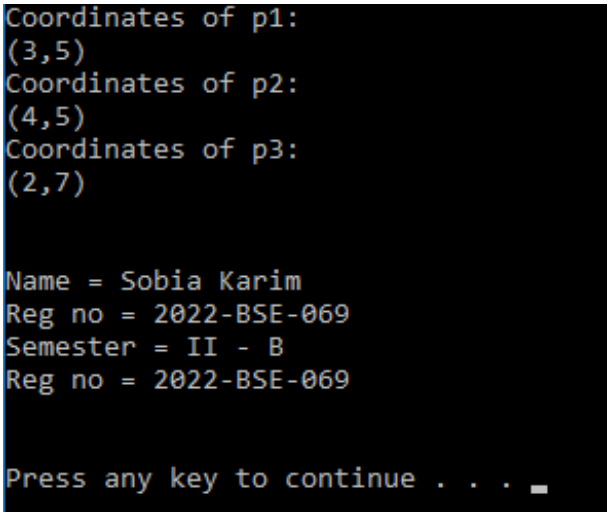
Create a class Point with two data members x, y. Provide appropriate constructors, get, set and display methods. Create a class Triangle with three Points as its data members. Provide appropriate constructors for this class and a display method which calls the display methods of the three Points. In the main function, declare three points and pass them to the constructor of the class Triangle. Call the display method of Triangle to verify the coordinates of the triangle. Print your name, reg no, section, semester in main using cout statement

CODE:

```
#include "stdafx.h"
#include<iostream>
using namespace std;

class Point{
private:
	int x,y;
public:
	Point(){
		x=0;
		y=0;}
	Point(int xx,int yy){
		x=xx;
		y=yy;}
	void setx(int xx){
		x=xx;
	}
	void sety(int yy){
		y=yy;
	}
	int getx(){
		return x;
	}
	int gety(){
		return y;
	}
	void display(){
		cout<<"("<<x<<","<<y<<")"<<endl;
	}
};

class Triangle{
private:
	Point p1,p2,p3;
public:
	Triangle(){
	}
```

```
	Triangle(Point pp1,Point pp2,Point pp3){
		p1=pp1;
		p2=pp2;
		p3=pp3;
	}
	void display(){
		cout<<"Coordinates of p1: \n";
		p1.display();
		cout<<"Coordinates of p2: \n";
		p2.display();
		cout<<"Coordinates of p3: \n";
		p3.display();
	}
	};

int _tmain(int argc, _TCHAR* argv[])
{
	Point pp1(3,5),pp2(4,5),pp3(2,7);
	Triangle triangle(pp1,pp2,pp3);
	triangle.display();

	cout<<"\n\nName = Sobia Karim\n";
	cout<<"Reg no = 2022-BSE-069\n";
	cout<<"Semester = II - B\n";
	cout<<"Reg no = 2022-BSE-069\n\n\n";
	system("pause");
	return 0;
}
```

OUTPUT



TASK – 02

Create separate header file(s) for the above code for each of the class definition and separate .cpp file four your main()

main.cpp:

```
#include "stdafx.h"
#include "Point.h"
#include "Triangle.h"
#include<iostream>
using namespace std;

int _tmain(int argc, _TCHAR* argv[])
{
	Point pp1(3,5),pp2(4,5),pp3(2,7);
	Triangle triangle(pp1,pp2,pp3);
	triangle.display();

	cout<<"\n\nName = Sobia Karim\n";
	cout<<"Reg no = 2022-BSE-069\n";
	cout<<"Semester = II - B\n";
	cout<<"Reg no = 2022-BSE-069\n\n\n";
	system("pause");
	return 0;
}
```

Point.h:

```
class Point{
private:
	int x,y;
public:
	Point();
	Point(int xx,int yy);
	void setx(int xx);
	void sety(int yy);
	int getx();
	int gety();
	void display();
};
```

Triangle.h:

```
class Triangle{
private:
	Point p1,p2,p3;
public:
```

```
	Triangle();
	Triangle(Point pp1,Point pp2,Point pp3);
	void display();
	};
```

Point.cpp:

```
#include "stdafx.h"
#include "Point.h"
#include<iostream>
using namespace std;

	Point::Point(){
		x=0;
		y=0;}
	Point::Point(int xx,int yy){
		x=xx;
		y=yy;}
	void Point:: setx(int xx){
		x=xx;
	}
	void Point::sety(int yy){
		y=yy;
	}
	int Point::getx(){
		return x;
	}
	int Point::gety(){
		return y;
	}
	void Point::display(){
		cout<<"("<<x<<","<<y<<")"<<endl;
	}
```

Triangle.cpp:

```
#include "stdafx.h"
#include "Point.h"
#include "Triangle.h"
#include<iostream>
using namespace std;

	Triangle::Triangle(){
	}
	Triangle::Triangle(Point pp1,Point pp2,Point pp3){
		p1=pp1;
```

```
	p2=pp2;
	p3=pp3;
}
void Triangle::display(){
	cout<<"Coordinates of p1: \n";
	p1.display();
	cout<<"Coordinates of p2: \n";
	p2.display();
	cout<<"Coordinates of p3: \n";
	p3.display();
}
```

OUTPUT