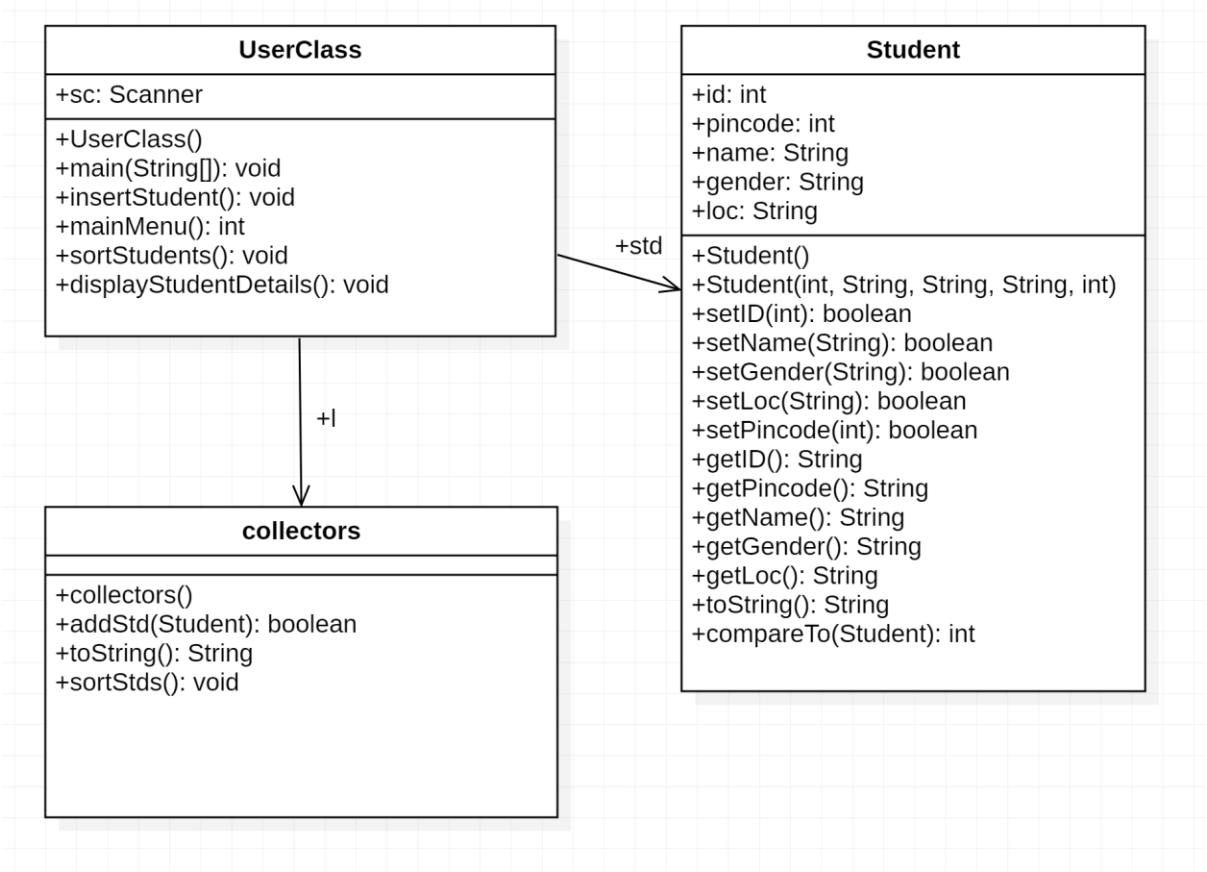
Question-5

Class Diagram



Code

```
package entity;

public class Student implements Comparable<Student>{
	private int id,pincode;
	private String name,gender,location;

	private Student() {
		this.id=0;
		this.name="xxx";
		this.gender="male";
		this.location="xxx";
		this.pincode=0;
	}

	public Student(int id,String name,String gender,String location,int
pincode) {
		this();
		this.setId(id);
```

```
		this.setName(name);
		this.setGender(gender);
		this.setLocation(location);
		this.setPincode(pincode);
	}

	public boolean setId(int id) {
		if(id>0) {
			this.id=id;
			return true;
		}
		return false;
	}
	public boolean setName(String name) {
		if(!name.isEmpty() && name!=null) {
			this.name=name;
			return true;
		}
		return false;
	}
	public boolean setGender(String gender) {
		if(!gender.isEmpty() && gender!=null) {
			this.gender=gender;
			return true;
		}
		return false;
	}
	public boolean setLocation(String location) {
		if(!location.isEmpty() && location!=null) {
			this.location=location;
			return true;
		}
		return false;
	}
	public boolean setPincode(int pincode) {
		if(pincode>0) {
			this.pincode=pincode;
			return true;
		}
		return false;
	}

	public String getId() {
		return Integer.toString(this.id);
	}
	public String getPincode() {
		return Integer.toString(this.pincode);
	}
	public String getName() {
		return this.name.toUpperCase();
	}
	public String getGender() {
		return this.gender.toUpperCase();
	}
	public String getLocation() {
		return this.location.toUpperCase();
	}

	public String toString() {
```

```
		String out ="";
		out+=String.format("Id = %s %n", this.getId());
		out+=String.format("Name = %s %n", this.getName());
		out+=String.format("Gender: %s %n", this.getGender());
		out+=String.format("Location: %s %n", this.getLocation());
		out+=String.format("Pincode: %s %n", this.getPincode());
		return out;
	}
	public int compareTo(Student s) {
		int c=s.getPincode().compareTo(this.getPincode());
		if(c==0) {
			c=this.getName().compareTo(s.getName());
			if(c==0) {
				c=s.getId().compareTo(this.getId());
			}
		}
		return c;
	}
}
```

```
package collector;

import entity.Student;
import java.util.*;

public class collectors {
	private ArrayList<Student> std;

	public collectors() {
		std=new ArrayList<Student>();
	}

	public boolean addStudent(Student s) {
		if(s!=null) {
			std.add(s);
			return true;
		}
		return false;
	}

	public String toString() {
		String out="";
		for(Student s:std) {
			out+=s.toString();
		}
		return out;
	}

	public void sortStudents() {
		Collections.sort(std);
	}
}
```

```
package enduser;
```

```java
import entity.Student;
import java.util.Scanner;
import collector.collectors;

public class UserClass {

	private static Scanner  sc = new Scanner(System.in);
	collectors l1 =new collectors();
	public static void main(String[] args) {
		UserClass u=new UserClass();
		boolean repeat = true;
		while(repeat) {
				switch(u.mainMenu()) {
					case 1: u.insertStudent();
							break;
					case 2: u.displayStudentDetails();
							break;
					case 3: u.sortStudents();
							break;
					default: repeat = false;
				}
		}
	}
	public void insertStudent() {
		System.out.println("Enter Student Id");
		int id=sc.nextInt();
		System.out.println("Enter Student Name");
		String name=sc.next();
		System.out.println("Enter Student Gender");
		String gender=sc.next();
		System.out.println("Enter Student Location");
		String location=sc.next();
		System.out.println("Enter Student Pincode");
		int pincode=sc.nextInt();
		Student s = new Student(id,name,gender,location,pincode);
		l1.addStudent(s);

	}
	public int mainMenu() {
		System.out.println("1.Add Student");
		System.out.println("2.Display Students");
		System.out.println("3.Sort Students");
		System.out.println("Enter any other number to exit");
		return sc.nextInt();
	}
	public void sortStudents() {
		l1.sortStudents();
		System.out.println("*****Sorted by Name and Location*****");
	}
	public void displayStudentDetails() {
		System.out.println(l1);
	}
}
```