

Assignment 5 (Important)

Due Nov 1, 2020 by 11:59pm **Points** 25 **Submitting** a file upload
Available after Oct 14, 2020 at 12am

You need to know how to solve a problem like this one for your midterm test. Please spend upwards of 20 hours on this assignment.

Your assignment is to write an application called StudentManagementSystem. In this application you will have the following classes. Make sure you use the right visibility modifier for the methods and encapsulate your data properly. Analyze the classes below to observe the aggregating (containment) relationship between classes. Also make sure that each class has default and overloaded constructors available to create the objects. All code listed is almost pseudocode and UML; thus convert to java.

Student
string firstName, middleName, lastName Address workAddress, homeAddress string studentPhone StudentHighSchoolInformation studentHSInfo
string getStudentFirstName() string getStudentMiddleName() string getStudentLastName() string getStudentFullName() string getStudentPhoneNumber() Address getStudentAddressHome() Address getStudentAddressWork() StudentHighSchoolInformation getStudentHSInfo() void setStudentFirstName(String sFirst)

```
void setStudentMiddleName(String sMiddle)
void setStudentLastName(String sLast)
void setStudentPhoneNumber(String phone)
void setStudentAddressHome(Address obj)
void setStudentAddressWork(Address obj)
toString() //should be overwritten to pretty print all
the info of the student
```

Address
String addressLine1, addressLine2, city, zip, state
Make sure you have all setters and getters

StudentHighSchoolInformation
Address schoolAddress
double GPA
Make sure you have all setters and getters

After you have created all the needed classes. In your main application you need to create the following objects using constructors below:

pass in the parameters to the address constructor to create the right object

Address workAddress = new Address(workAddressLine1, workAddressLine2, city, zip, state)

```
Address homeAddress = new Address(homeAddressLine1, homeAddressLine2, city, zip, state)

Address schoolAddress = new Address(schoolAddressLine1, schoolAddressLine2, city, zip, state)

StudentHighSchoolInformation studentHSInfo = new StudentHighSchoolInformation(schoolAddress,
GPA)

Student (firstName, middleName, lastName, workAddress, homeAddress, studentPhone,
studentHSInfo)
```

In the Main method do something similar:

```
StudentHighSchoolInformation a_HSInfo = new StudentHighSchoolInformation(schoolAddress, 3.86);

Student a = new Student("Syed", "Ali", "Naqvi", a_workAddress, a_homeAddress, "(612) 386-5010",
a_HSInfo);
```

```
StudentHighSchoolInformation b_HSInfo = new StudentHighSchoolInformation (schoolAddress, 3.5);

Student b = new Student("A", "Jee", "Jay", b_workAddress, b_homeAddress, "(952) 386-1010",
b_HSInfo);
```

```
StudentHighSchoolInformation c_HSInfo = new StudentHighSchoolInformation (schoolAddress, 4.0);

Student c = new Student("Jane", " ", "Doe", c_workAddress, c_homeAddress, "(612) 311-6238",
c_HSInfo);
```

```
a.toString();
```

```
b.toString();
```

```
c.toString();
```

Result output:

toString() should produce results like below. The bold items below show the results coming back from the getters:

My name is **Syed Ali Naqvi**, my work address is **123 my work address** and my home address is **123 my home address**. You can contact me on my phone at **(612) 386-5010**. I went to an awesome high

school at **123 my school address** and guess what my GPA was **3.86**

Hint: How to pass the reference types to a constructor

```
// First Student Record
```

```
Address address = new Address("5426 Waley Street", "", "St. Paul", "MN", "55122");
HighSchoolInformation HSInfo = new HighSchoolInformation(address, 3.86);
Address workAddress = new Address("6739 Tesla Ave", "South Side Bend", "Eagan", "MN", "55123");
Address homeAddress = new Address("1234", "Suite 11", "Eagan", "MN", "55023");
Student aStudent = new Student("Jim", "Rough", "Johnson", workAddress, homeAddress, "(612) 288-1234", HSInfo);
```

```
public Student(String firstName, String middleName, String lastName, Address workAddress,
Address homeAddress, String studentPhone, HighSchoolInformation studentHSInfo)
{
    this.firstName = firstName;
    this.middleName = middleName;
    this.lastName = lastName;
    this.workAddress = workAddress;
    this.homeAddress = homeAddress;
    this.studentPhone = studentPhone;
    this.studentHSInfo = studentHSInfo;
}
```