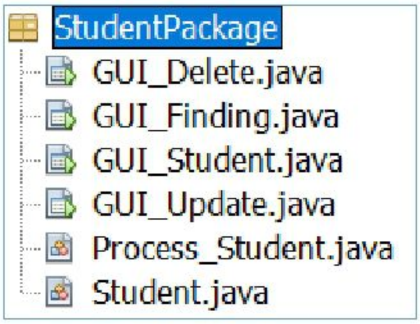
WORKSHOP 04

Exercise 1:

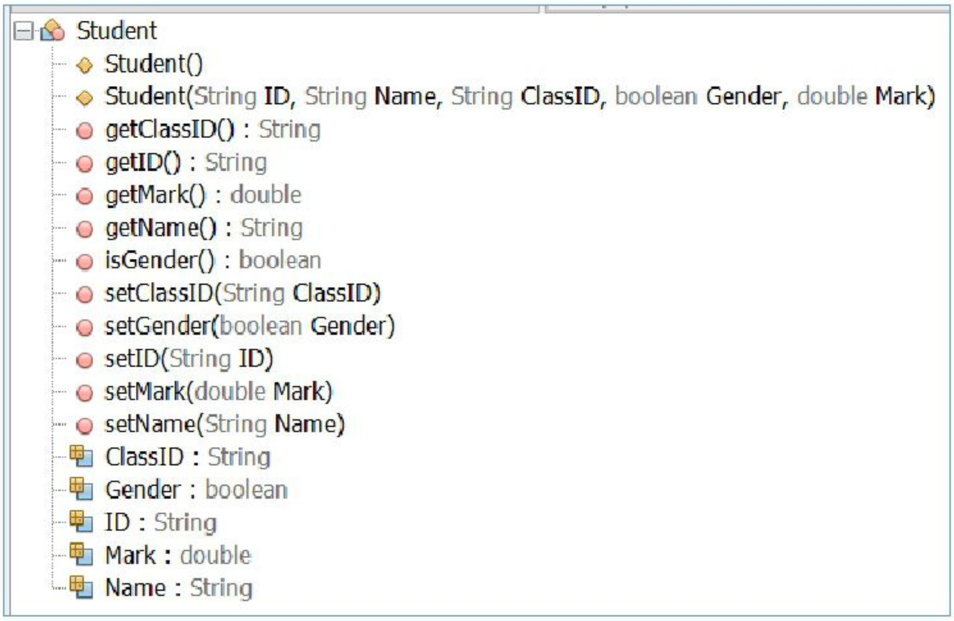
1. Using MySQL to create the database **DB_Student** containing the table *tbStudent(ID, Name, IDClass, Address, Mark)*.

2. Create a Project having the following structure:



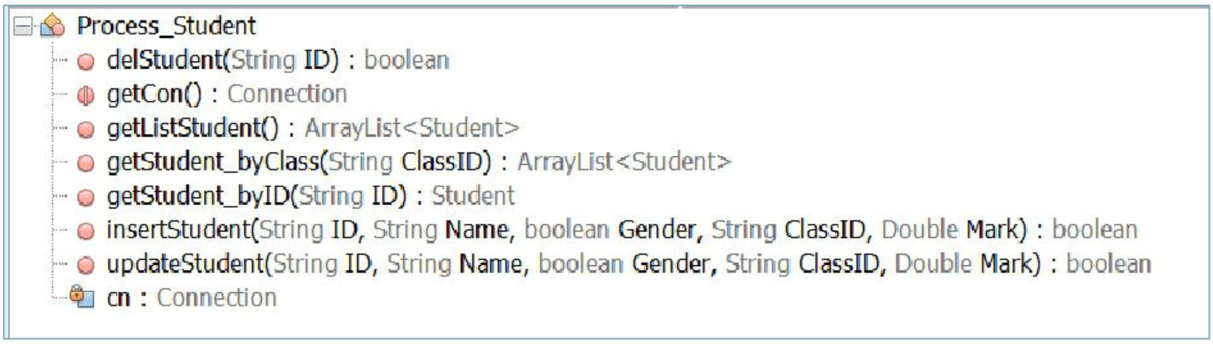
StudentPackage
- GUI_Delete.java
- GUI_Finding.java
- GUI_Student.java
- GUI_Update.java
- Process_Student.java
- Student.java

3. Design and code the class **Student** that holds information about a student.



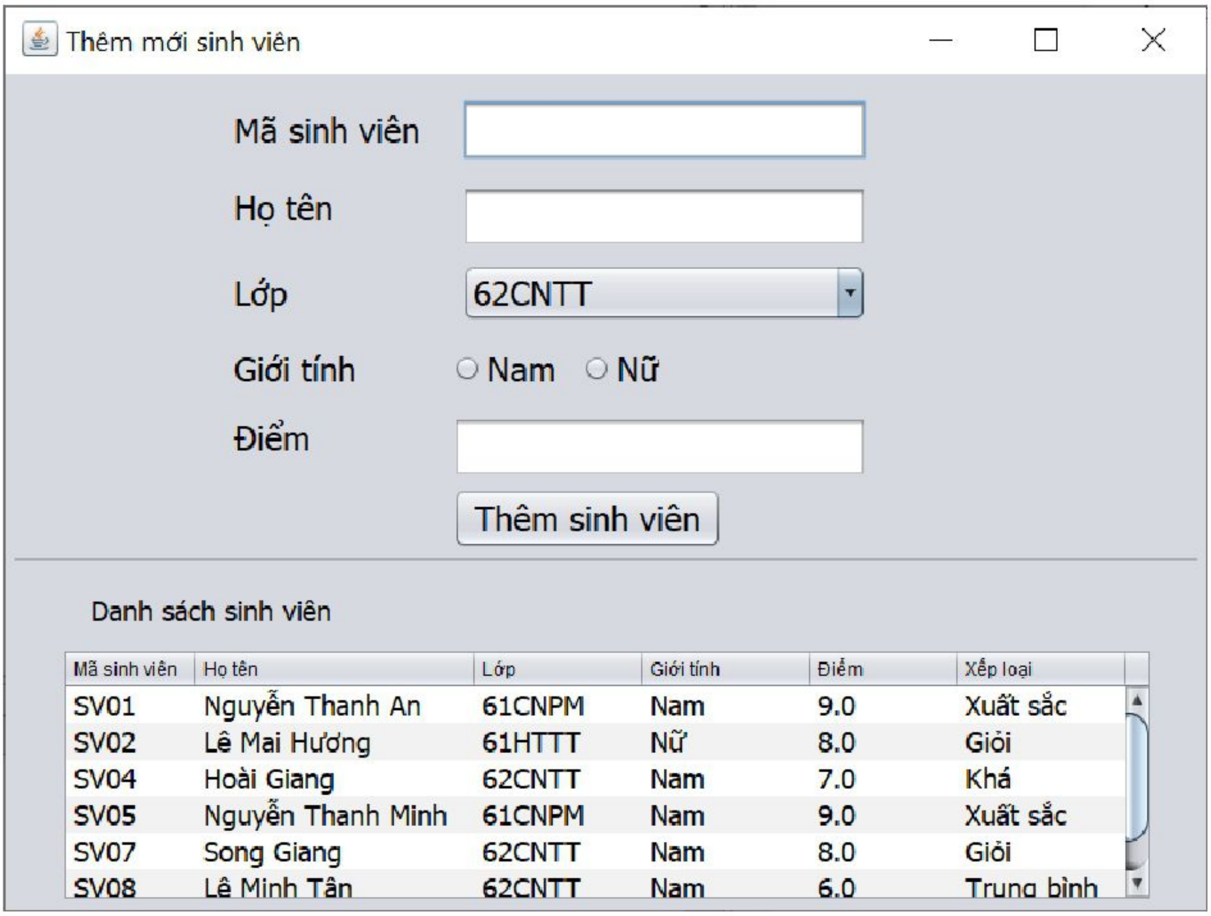
Student
- Student()
- Student(String ID, String Name, String ClassID, boolean Gender, double Mark)
- getClassID() : String
- getID() : String
- getMark() : double
- getName() : String
- isGender() : boolean
- setClassID(String ClassID)
- setGender(boolean Gender)
- setID(String ID)
- setMark(double Mark)
- setName(String Name)
- ClassID : String
- Gender : boolean
- ID : String
- Mark : double
- Name : String

4. Design and code the class **Process_Student** that consists of the following properties and methods:



Process_Student
- delStudent(String ID) : boolean
- getCon() : Connection
- getListStudent() : ArrayList<Student>
- getStudent_byClass(String ClassID) : ArrayList<Student>
- getStudent_byID(String ID) : Student
- insertStudent(String ID, String Name, boolean Gender, String ClassID, Double Mark) : boolean
- updateStudent(String ID, String Name, boolean Gender, String ClassID, Double Mark) : boolean
- cn : Connection

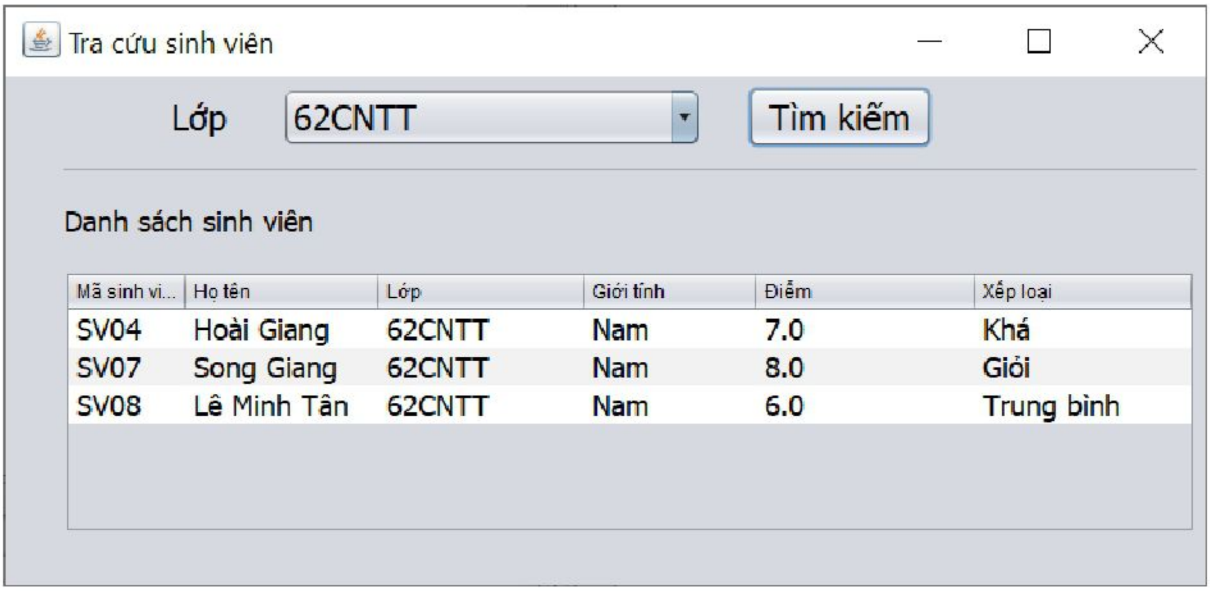
5. Design and code the class **GUI_Student**, which inserts a new student into the tbStudent table



Lớp: 62CNTT

Mã sinh viên	Họ tên	Lớp	Giới tính	Điểm	Xếp loại
SV01	Nguyễn Thanh An	61CNPM	Nam	9.0	Xuất sắc
SV02	Lê Mai Hương	61HTTT	Nữ	8.0	Giỏi
SV04	Hoài Giang	62CNTT	Nam	7.0	Khá
SV05	Nguyễn Thanh Minh	61CNPM	Nam	9.0	Xuất sắc
SV07	Song Giang	62CNTT	Nam	8.0	Giỏi
SV08	Lê Minh Tân	62CNTT	Nam	6.0	Trung bình

6. Design and code the class **GUI_finding**, which fetch all students in the tbStudent table by ClassID.



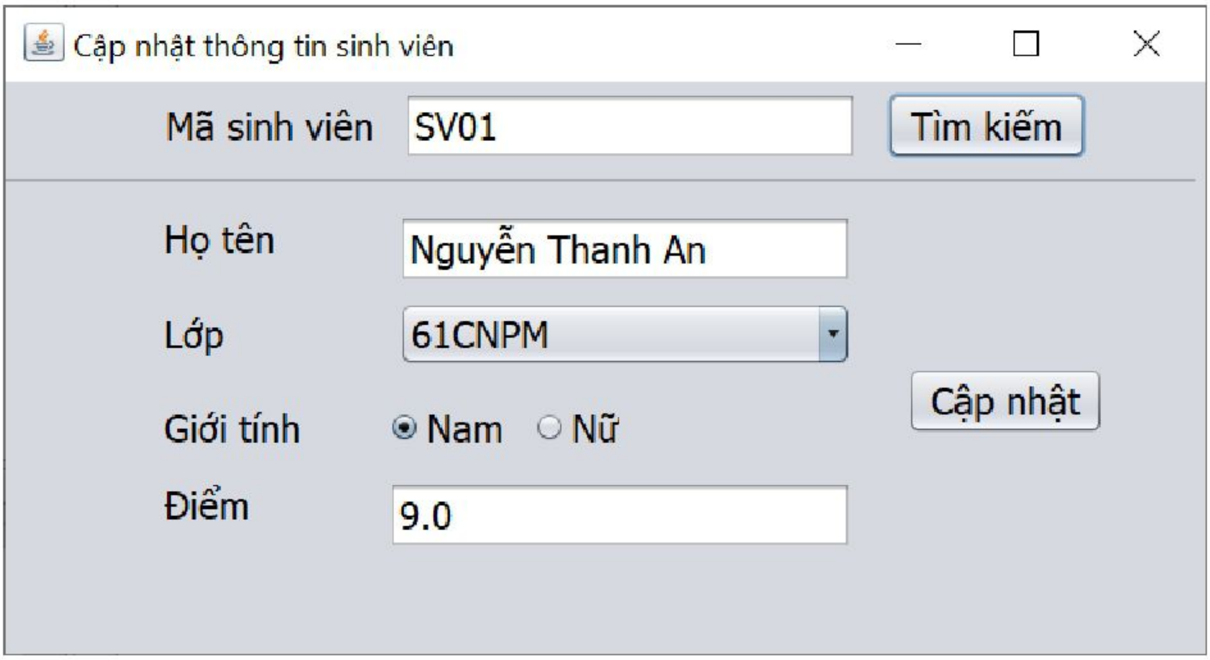
Lớp: 62CNTT

Mã sinh vi...	Họ tên	Lớp	Giới tính	Điểm	Xếp loại
SV04	Hoài Giang	62CNTT	Nam	7.0	Khá
SV07	Song Giang	62CNTT	Nam	8.0	Giỏi
SV08	Lê Minh Tân	62CNTT	Nam	6.0	Trung bình

7. Design and code the class **GUI_Update**, which implements:

- Fetch a student with a inputed ID.

- Update the information for a student whose ID number is a inputed ID.



Cập nhật thông tin sinh viên

Mã sinh viên: SV01

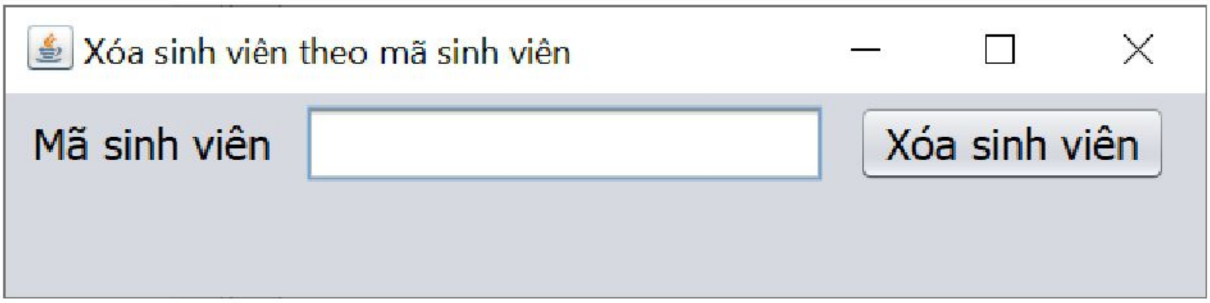
Họ tên: Nguyễn Thanh An

Lớp: 61CNPM

Giới tính: ● Nam ○ Nữ

Điểm: 9.0

8. Design and code the class **GUI_Delete**, which will delete a student, whose ID is inputed ID.



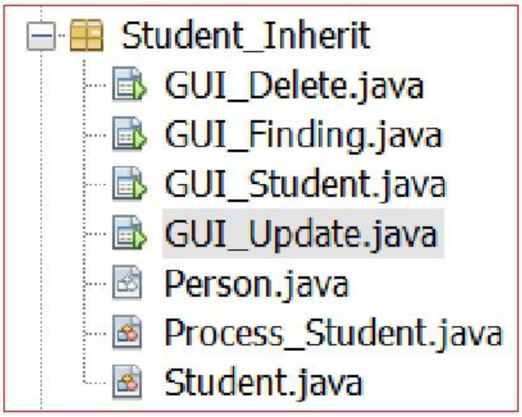
Xóa sinh viên theo mã sinh viên

Mã sinh viên:

Exercise 2:

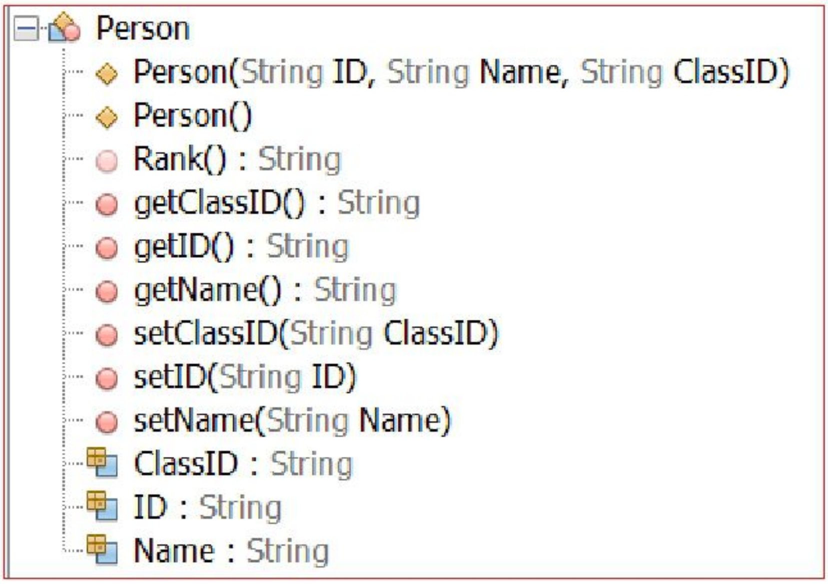
1. Using MySQL to create the database **DB_Student** containing the table *tbStudent(ID, Name, IDClass, Address, Mark)*.

2. Create a Project having the following structure:



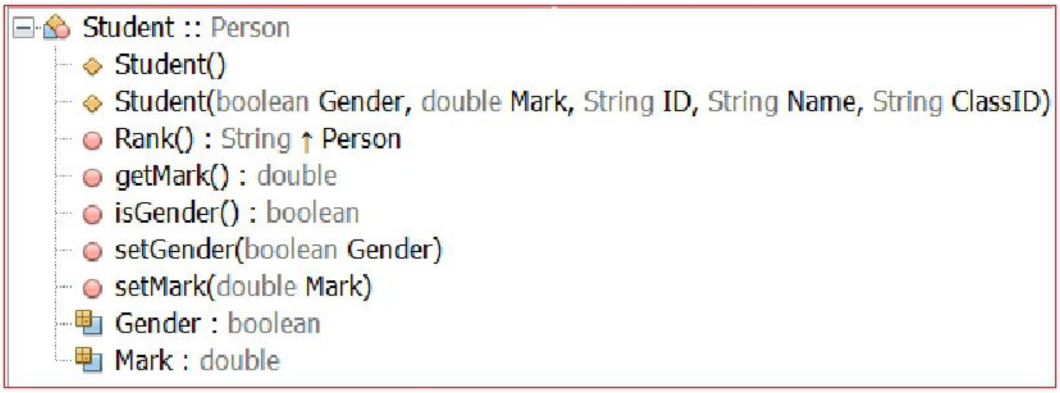
```
Student_Inherit
    GUI_Delete.java
    GUI_Finding.java
    GUI_Student.java
    GUI_Update.java
    Person.java
    Process_Student.java
    Student.java
```

3. Design and code the abstract class **Person** that holds information about a person.



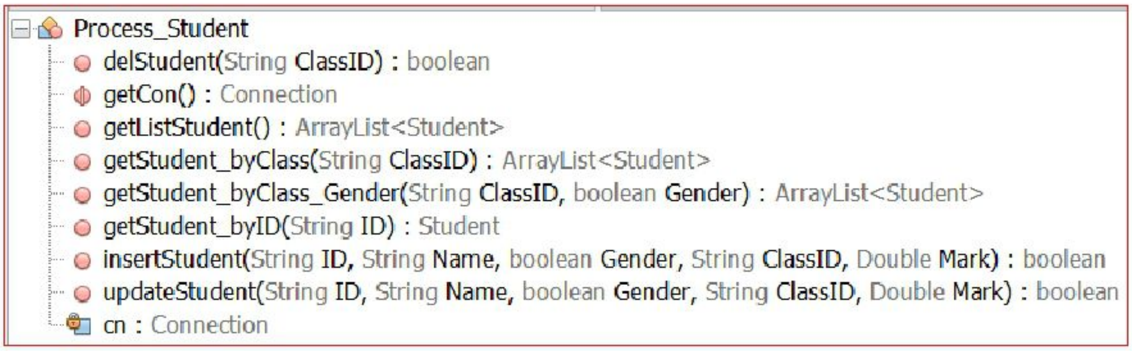
```
Person
    Person(String ID, String Name, String ClassID)
    Person()
    Rank() : String
    getClassID() : String
    getID() : String
    getName() : String
    setClassID(String ClassID)
    setID(String ID)
    setName(String Name)
    ClassID : String
    ID : String
    Name : String
```

4. Design and code the class named **Student** which is derived from **Person**



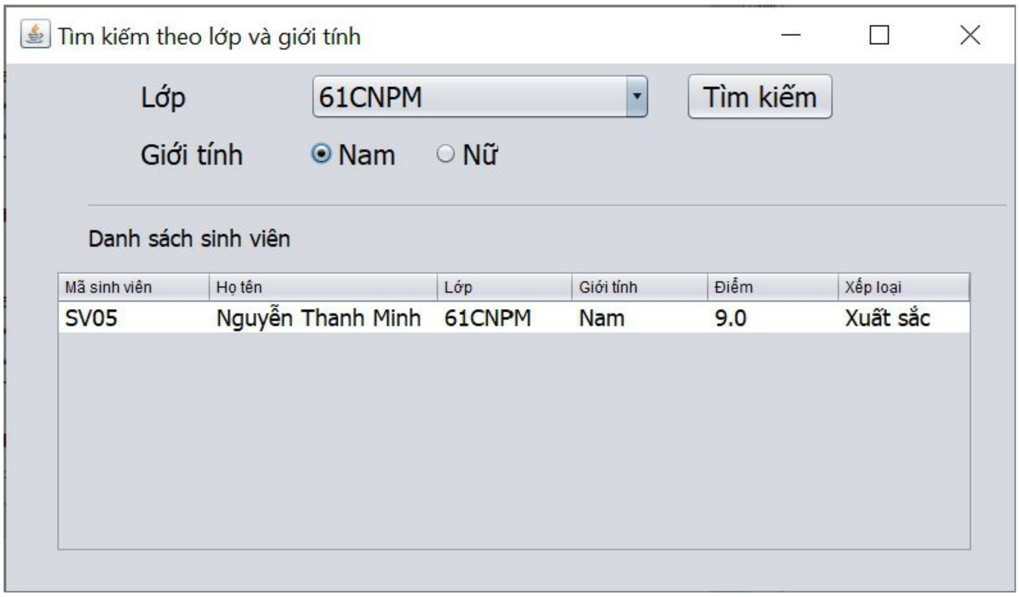
```
Student :: Person
    Student()
    Student(boolean Gender, double Mark, String ID, String Name, String ClassID)
    Rank() : String ↑ Person
    getMark() : double
    isGender() : boolean
    setGender(boolean Gender)
    setMark(double Mark)
    Gender : boolean
    Mark : double
```

5. Design and code the class **Process_Student** that consists of the following properties and methods:



```
Process_Student
  delStudent(String ClassID) : boolean
  getCon() : Connection
  getListStudent() : ArrayList<Student>
  getStudent_byClass(String ClassID) : ArrayList<Student>
  getStudent_byClass_Gender(String ClassID, boolean Gender) : ArrayList<Student>
  getStudent_byID(String ID) : Student
  insertStudent(String ID, String Name, boolean Gender, String ClassID, Double Mark) : boolean
  updateStudent(String ID, String Name, boolean Gender, String ClassID, Double Mark) : boolean
  cn : Connection
```

6. Design and code the class **GUI_finding**, which fetch all students in the tbStudent table by ClassID and Gender.



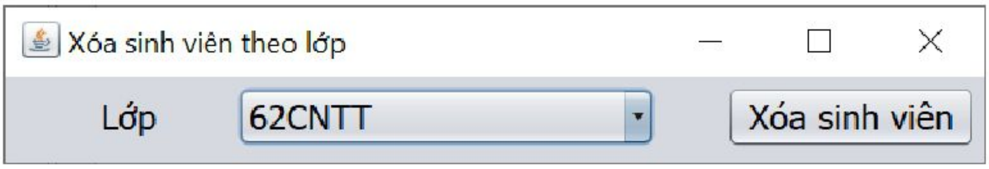
Lớp: 61CNPM

Giới tính: ● Nam ○ Nữ

Danh sách sinh viên

Mã sinh viên	Họ tên	Lớp	Giới tính	Điểm	Xếp loại
SV05	Nguyễn Thanh Minh	61CNPM	Nam	9.0	Xuất sắc

7. Design and code the class **GUI_Delete**, which will delete a student, whose ClassID is inputed ClassID.

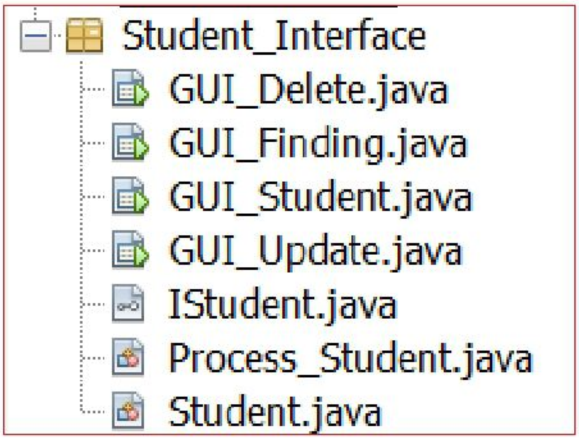


Lớp: 62CNTT

Exercise 3:

1. Using MySQL to create the database **DB_Student** containing the table *tbStudent(ID, Name, IDClass, Address, Mark)*.

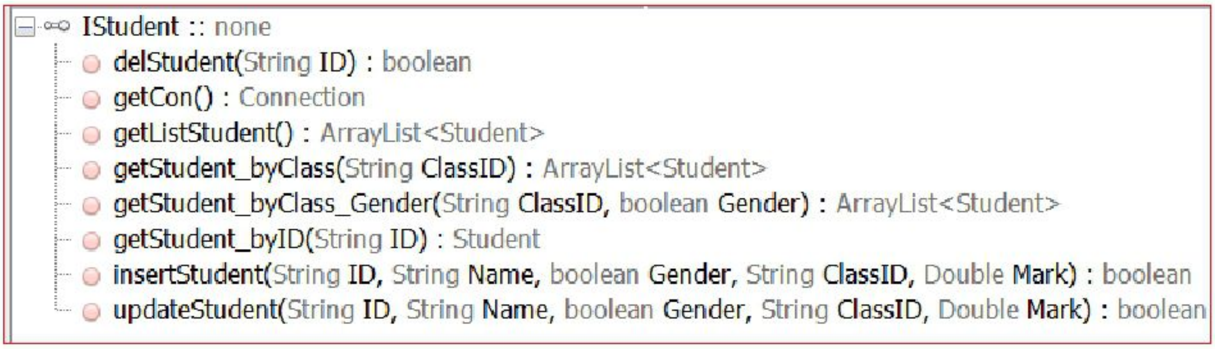
2. Create a Project having the following structure:



Student_Interface
- GUI_Delete.java
- GUI_Finding.java
- GUI_Student.java
- GUI_Update.java
- IStudent.java
- Process_Student.java
- Student.java

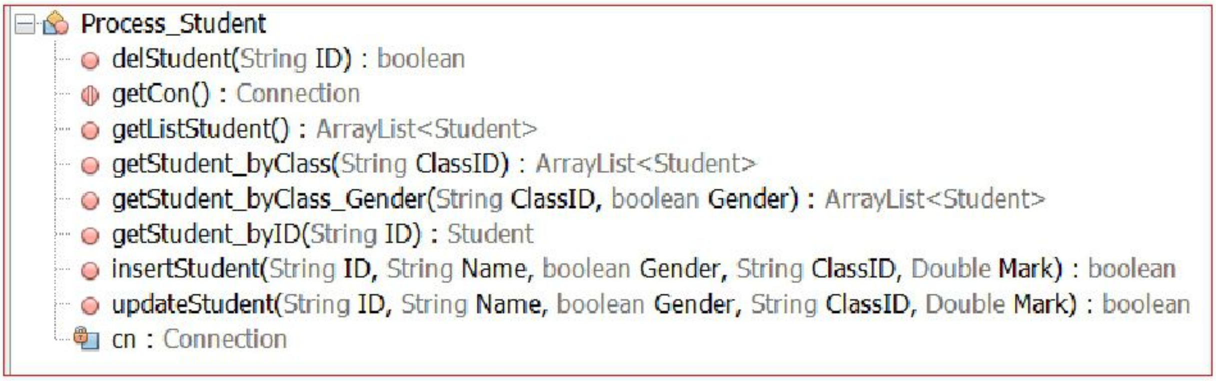
3. Design and code the class **Student** that holds information about a student. (See Exercise 1)

4. Design and code the interface **IStudent** that consists of the following methods:



IStudent :: none
- delStudent(String ID) : boolean
- getCon() : Connection
- getListStudent() : ArrayList<Student>
- getStudent_byClass(String ClassID) : ArrayList<Student>
- getStudent_byClass_Gender(String ClassID, boolean Gender) : ArrayList<Student>
- getStudent_byID(String ID) : Student
- insertStudent(String ID, String Name, boolean Gender, String ClassID, Double Mark) : boolean
- updateStudent(String ID, String Name, boolean Gender, String ClassID, Double Mark) : boolean

5. Design and code the class **Process_Student** which implements the interface **IStudent**, thus it must implement methods in IStudent interface:



Process_Student
- delStudent(String ID) : boolean
- getCon() : Connection
- getListStudent() : ArrayList<Student>
- getStudent_byClass(String ClassID) : ArrayList<Student>
- getStudent_byClass_Gender(String ClassID, boolean Gender) : ArrayList<Student>
- getStudent_byID(String ID) : Student
- insertStudent(String ID, String Name, boolean Gender, String ClassID, Double Mark) : boolean
- updateStudent(String ID, String Name, boolean Gender, String ClassID, Double Mark) : boolean
- cn : Connection

6. Design and code the class **GUI_Student**, which inserts a new student into the tbStudent table. (See Exercise 1)

7. Design and code the class **GUI_finding**, which fetch all students in the tbStudent table by ClassID and Gender. (See Exercise 2)

8. Design and code the class **GUI_Update**, which implements (See Exercise 1)

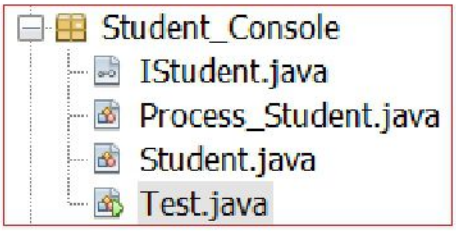
- Fetch a student with a inputed ID.
- Update the information for a student whose ID number is a inputed ID.

9. Design and code the class **GUI_Delete**, which will delete a student, whose ID is inputed ID. (See Exercise 1)

Exercise 4:

1. Using MySQL to create the database **DB_Student** containing the table *tbStudent(ID, Name, IDClass, Address, Mark)*.

2. Create a Project having the following structure:



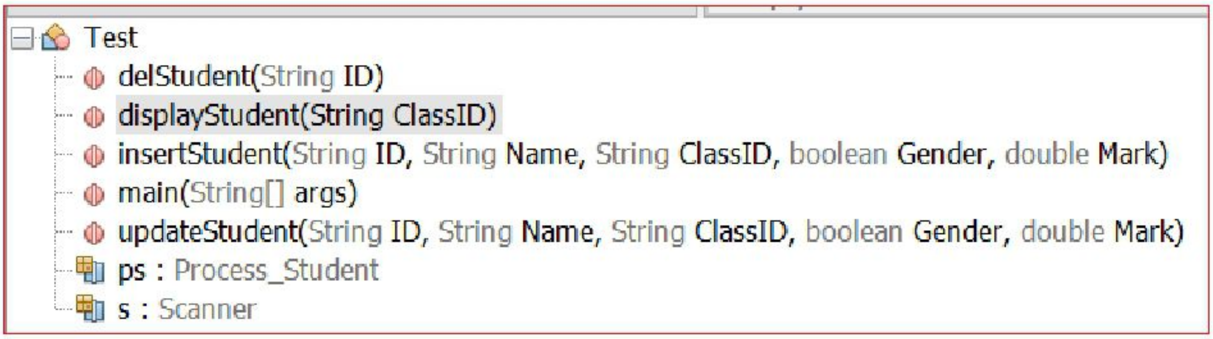
Student_Console
- IStudent.java
- Process_Student.java
- Student.java
- Test.java

3. Design and code the class **Student** that holds information about a student. (See Exercise 1)

4. Design and code the interface **Istudent.** (See Exercise 3)

5. Design and code the class **Process_Student** which implements the interface **IStudent**, thus it must implement methods in IStudent interface. (See Exercise 3)

6. Design and code the class Test which consists of the following properties and methods:



Test
- delStudent(String ID)
- displayStudent(String ClassID)
- insertStudent(String ID, String Name, String ClassID, boolean Gender, double Mark)
- main(String[] args)
- updateStudent(String ID, String Name, String ClassID, boolean Gender, double Mark)
- ps : Process_Student
- s : Scanner