CSE 102 Programming Assignment 1

Due:

Tuesday, 30-March-2021 by 23:59

Deliverables:

The following Java file should be submitted to Google Classroom by the due date and time specified above. Submissions received after the deadline will be subject to the late policy described in the syllabus.

- Assignment01_{StudentNumber}.java
- Image files for screenshots of your progress:
  - May be separate image files or all pasted into a .docx or .pdf document
  1. Assignment01_{StudentNumber}_firstCompile
  2. Assignment01_{StudentNumber}_firstCompileNoError
  3. Assignment01_{StudentNumber}_firstTestRun
  4. Assignment01_{StudentNumber}_firstTestRunNoError (optional)
  5. Assignment01_{StudentNumber}_finalCompile
  6. Assignment01_{StudentNumber}_finalRun

Specifications:

Overview: You will continue the program this semester to maintain the grades for a student in a course. Do not forget your headers with @author and @since information.

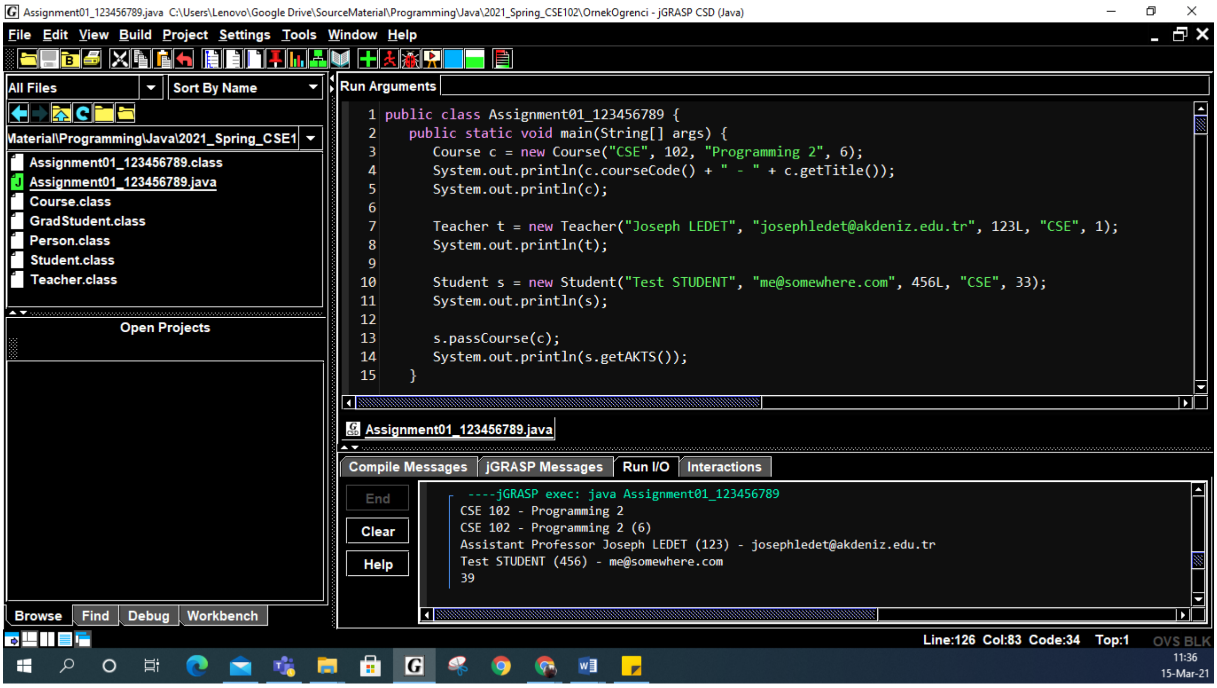
Requirements: Write a set of classes according to the following specifications:

1. Course
   a. Attributes
      i. Department: String
         1. Must be 3 or 4 characters
      ii. Number: int
         1. Must be in the range 100-499 or 5000-5999 or 7000-7999
      iii. Title: String
      iv. AKTS: int
         1. Must be positive
   b. Methods
      i. Constructor that takes the department, number, title and AKTS as parameters
      ii. getDepartment(): String and setDepartment(department: String)
      iii. getNumber(): int and setNumber(number: int)
      iv. getTitle(): String and setTitle(title: String)
      v. getAKTS(): int and setAKTS(AKTS: int)
      vi. courseCode(): String
         1. returns the department and number with a space between (i.e. “CSE 102”)
      vii. toString(): String – “{department} {number} - {title} ({AKTS})”

2. Person
   a. Attributes
      i. Name: String
      ii. Email: String
         1. Must be of the form {username}@{university name}.{domain}
      iii. ID: long int
      iv. Department: String
         1. Must be 3 or 4 characters
   b. Methods
      i. Constructor that takes the name, email, number, and department as parameters
      ii. getName(): String and setName(name: String)
      iii. getEmail(): String and setEmail(email: String)
      iv. getID(): long int and setID(ID: long int)
      v. getDepartment(): String and setDepartment (name: String)
      vi. toString(): String – "{Name} ({ID}) – {Email}"
3. Teacher – a child of Person
   a. Attributes
      i. Rank: int
   b. Methods
      i. Constructor that takes the name, email, number, department, and rank as parameters
      ii. getRank(): int and setRank (rank: int)
         1. Must be between 1 and 3 (the possible ranks)
      iii. getTitle(): String – returns the following based on rank value
         1. Assistant Professor
         2. Associate Professor
         3. Professor
      iv. promote(): None
         1. Increases the status of the Teacher (i.e. increments rank)
         2. Make sure that rank remains a valid value
      v. demote(): None
         1. Decreases the status of the Teacher (i.e. decrements rank)
         2. Make sure that rank remains a valid value
      vi. toString(): String – {title} + toString() of parent

4. Student – a child of Person
    a. Attributes
        i. AKTS: int
    b. Methods
        i. Constructor that takes the name, email, number, department, and AKTS as parameters
        ii. getAKTS(): int and setAKTS (AKTS: int)
            1. Must be non-negative
        iii. passCourse(course: Course): None
            1. Adds the AKTS for the course to the student's total
        iv. toString(): String – inherits from parent
5. GradStudent – a child of Student
    a. Attributes
        i. Thesis: String
    b. Methods
        i. Constructor that takes the name, email, number, department, AKTS, and thesis as parameters
        ii. getThesis(): String and setThesis (Thesis: String)
        iii. toString(): String – inherits from parent

Design: Your program does not require a main method. You are only responsible for creating the five (5) classes described above. An example of how your program should operate is given below:


Assignment01_123456789.java C:\Users\Lenovo\Google Drive\SourceMaterial\Programming\Java\2021_Spring_CSE102\OrnekOgrenci - jGRASP CSD (Java)
File Edit View Build Project Settings Tools Window Help
All Files
Sort By Name
Material\Programming\Java\2021_Spring_CSE1
Assignment01_123456789.class
Assignment01_123456789.java
Course.class
GradStudent.class
Person.class
Student.class
Teacher.class
Open Projects
Browse Find Debug Workbench
Run Arguments
Assignment01_123456789.java
Compile Messages jGRASP Messages Run I/O Interactions
End
Clear
Help
Line:126 Col:83 Code:34 Top:1 OVS BLK
11:36
15-Mar-21

```java
public class Assignment01_123456789 {
   public static void main(String[] args) {
      Course c = new Course("CSE", 102, "Programming 2", 6);
      System.out.println(c.courseCode() + " - " + c.getTitle());
      System.out.println(c);

      Teacher t = new Teacher("Joseph LEDET", "josephledet@akdeniz.edu.tr", 123L, "CSE", 1);
      System.out.println(t);

      Student s = new Student("Test STUDENT", "me@somewhere.com", 456L, "CSE", 33);
      System.out.println(s);

      s.passCourse(c);
      System.out.println(s.getAKTS());
   }
```

```
 ----jGRASP exec: java Assignment01_123456789
CSE 102 - Programming 2
CSE 102 - Programming 2 (6)
Assistant Professor Joseph LEDET (123) - josephledet@akdeniz.edu.tr
Test STUDENT (456) - me@somewhere.com
39
```

Code: The file you submit will be named Assignment01_{StudentNumber}. You should put all java classes for this assignment inside of this one (1) file as discussed in class.

Test: You are responsible for testing your program. It is important to not rely solely on the examples presented in this Assignment description.

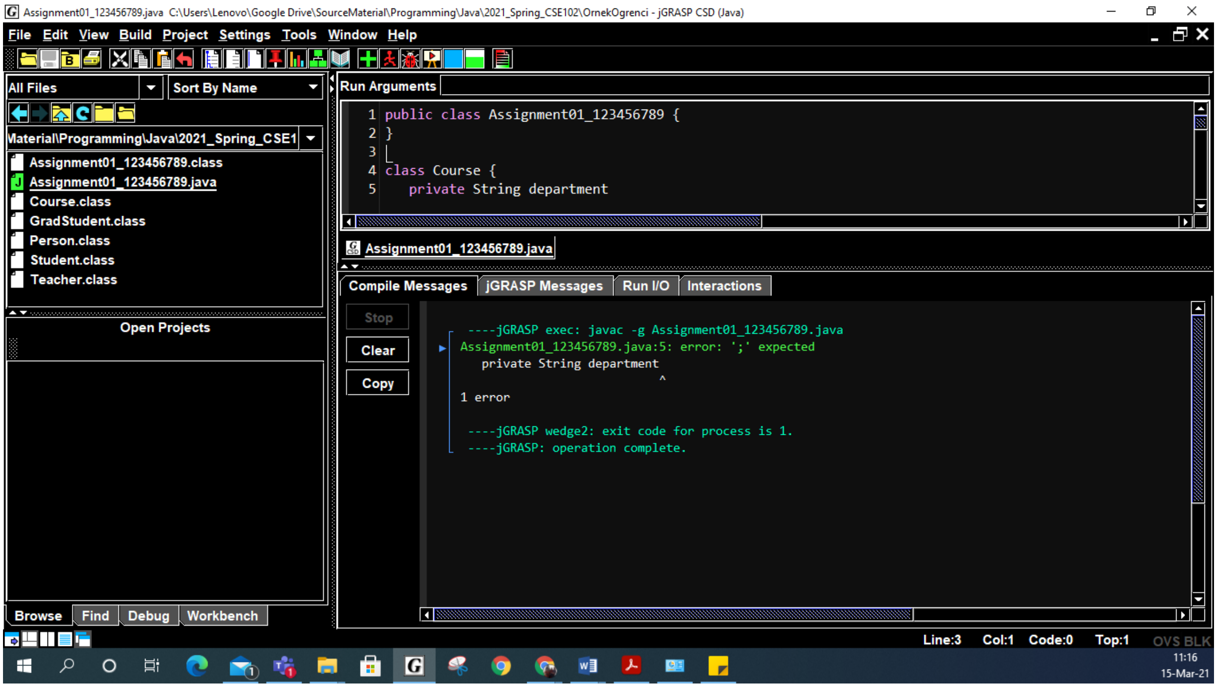
CSE 102 Programming Assignment 1

Grading:

MS Teams Submission: If anything is ambiguous, it is your responsibility to ask questions. It is also your responsibility to complete this assignment in a timely manner. Questions regarding this assignment will likely not be answered if received after 17:00 on the due date of the assignment.

Quiz: There will be a quiz based on this assignment given on 1-April. The result of this quiz will be used to determine your grade on this assignment. **Note**: if you do not take the quiz, your score on this assignment **will be 0**.

Screenshots: For this assignment, you must provide at minimum the six listed screenshots of your progress. An example of the screen shot for first compile is given below. An example of the screen shot for final run is shown above as the example output. These screenshots must include the entire screen (window, task bar, etc.). **Note**: if you do not submit these images, your score on this assignment **will be 0**.


Assignment01_123456789.java C:\Users\Lenovo\Google Drive\SourceMaterial\Programming\Java\2021_Spring_CSE102\OrnekOgrenci - jGRASP CSD (Java)
File Edit View Build Project Settings Tools Window Help
All Files
Sort By Name
Material\Programming\Java\2021_Spring_CSE1
Assignment01_123456789.class
Assignment01_123456789.java
Course.class
GradStudent.class
Person.class
Student.class
Teacher.class
Open Projects
Browse Find Debug Workbench
Run Arguments
Assignment01_123456789.java
Compile Messages jGRASP Messages Run I/O Interactions
Stop
Clear
Copy
Line:3 Col:1 Code:0 Top:1 OVS BLK
11:16
15-Mar-21

```java
public class Assignment01_123456789 {
}

class Course {
   private String department
```

```
 ----jGRASP exec: javac -g Assignment01_123456789.java
Assignment01_123456789.java:5: error: ';' expected
   private String department
                            ^
1 error

 ----jGRASP wedge2: exit code for process is 1.
 ----jGRASP: operation complete.
```