

CENG 211

PROGRAMMING FUNDAMENTALS

HOMEWORK-2

Due Date: 05 November 2017, 23:55

In this homework, you are expected to design and implement an **academic extended search** application. In this application, you are required to keep advisors and their students that study together at university.

Each student publishes a thesis with its advisor(s). An advisor may have more than one students and has following features:

- name,
- thesis/theses that is/are supervised,
- university that he/she currently works.

Each student has;

- student identifier,
- name,
- university/universities,
- department name,
- thesis/theses,
- advisor(s).

Each thesis has;

- name,
- student,
- university/universities,
- published year,

- advisor(s).

Each university has;

- name,
- foundation year,
- country.

***** You should define a **department name** as an **ENUM** class.
(COMPUTER_SCIENCE, PHYSICS, MATH, CHEMISTRY)

***** Your application should show a menu on the console that has following options:

1. **Listing all theses by department and university:** For this option, your application should ask department and university to user and list all theses published at given university and department.
2. **Listing all academicians that are both advisor and student:** For this option, your application should list name of the all academicians that are both advisor and student.
3. **Listing all theses in chronological order by advisor:** For this option, your application should ask name of the advisor to the user and list all theses that he/she supervised in chronological order.
4. **Finding the country that has the most number of published theses:** For this option, your application should find the country that has the most number of published theses.
5. **Listing all universities by advisor:** For this option, your application should ask name of the advisor and list name of all universities that he/she previously worked at.

***** Your application should read the file named as “genealogy.xml”.

***** You should define a class so that it should be responsible for reading a file from the given path. (**DataAccessLayer.java**)

IMPORTANT NOTES:

- You should use **DocumentBuilder** for file input operations.
- You should develop your code on Eclipse IDE with version of Oxygen1(
<https://www.eclipse.org/downloads/packages/eclipse-ide-java-ee-developers/oxygen1>).
- Your Java version should be at least 1.8.
- You will be evaluated according to your object oriented design and implementation.
- Make sure you follow naming convention rules.

SUBMISSION RULES:

- You should create your Java project as **ID1_ID2_HW2** and export as **ID1_ID2_HW2.zip**
- You should upload your zip file **ID1_ID2_HW2.zip** to the CMS.
- One of the group members is sufficient to upload homework to the CMS.
- You should add an author comment to the top of each class that you implement.