REQUIREMENT ANALYSIS DOCUMENT

Description of the project:

Our aim in this project is registration and control of the courses in online education. Students in the system will be able to register to all the courses they have in their own semesters if they meet the requirements. In every semester there will be 70 students. At the beginning, there will be chosen the current semester that is spring or fall. The system will take inputs from a JSON file. In this file there will be a curriculum along with a pool of University Elective (UE), Technical Elective (TE), Non-Technical Elective (NTE), and Faculty Technical Electives (FTE) courses, information of all courses, the prerequisite tree and also the semester that we will choose fall or spring. Students that will be randomly created will fail from some courses and they will complete their semesters according to the prerequisite tree of the university.There will be a student that will be controlled by an admin that uses console. While other students are randomly created, the student there will be controlled and will also register to courses. Courses will have sections that will be different hours. If there is a collision of two hours between courses, the advisor will not approve. While registering the courses, there will be some criterias. If a student's registration doesn’t meet the requirements, the advisor will deny the course request of the student. For example if a student fails a prerequisite lesson, the advisor will not approve the selected course’s registration. When the student finishes the semester, the json file created for him includes his notes and the transcript of the courses he/she took. In this transcript, there is also information about why the student could not take the courses. At the end of the program there will be an output JSON file that includes department output. In the department output we should be able to see general statistics about the problems for the given semester. For instance, the system will count the number of students who failed CSE1242 and write this to the JSON file.

Functional Requirements:

The system supports three types of actors: Students, Advisors, System.

Students:

- Students will have student IDs set by their creation order.
- Students can request to register to a course section of a specific course that is in the student's semester course pool.
- Students can not take a course if he/she failed the prerequisite course.
- The students will be graded randomly for the chosen courses.
- Students will register to the elective courses randomly from a pool of courses.
- Students will have transcripts which contain their failed, completed and active courses and grades of the respective courses.

Advisor:

- Advisors from lecturers may approve or deny student's registration requests by checking collision of courses in student's schedule, credit conditions and quota.
- Advisors are also lecturers and they may teach courses like normal lecturers.

System:

- The system will maintain the lecturers, students, courses, course sections, registrations and connections between them.
- Students will have their own JSON file (150129649.json),which is created by the system, that contains their transcript and summary of the problems about registration.

Nonfunctional Requirements:

- There will be a json file for each student.
- There will be no databases.
- We need to use python with an Object Oriented Manner

- The program should have an infrastructure that will not collapse due to overload between the time period of course selection.
- The response time of the system should be acceptable.

Use Case: Registration to a Course:

Actors: Student, System, Advisor

1. The system displays the course sections that the student can choose.

2. Student selects the course sections that he/she wants to register for in the system.
3. The system sends the registration request of the student to his/her advisor.
4. The advisor confirms the request of the student.

Alternatives:

4a. At step 4, the advisor denies the inappropriate registration request and removes registration requests that are inappropriate for the student.

Use Case: Completion of a Semester: Actors: System, Student.

1. The system finishes the semester.
2. The system changes the semester to Fall or Spring.
3. The system will randomly grade students' courses and add them to students' transcript.

GLOSSARY

Classes

-Advisor: Actor who approves or disapproves student’s course Selection list.

-Course:Lessons students must have passed to graduate.

-Course Grade: Letter grade of the course that student took.

-Course Section:Different lecture hours available for same lesson.

-CourseSectionRegister:Student register system

-Identity: Holds the student identity data

-Lecturer:Course instructor of the courses

-Schedule:Student's Courses in a weekly plan.

-Semester:A half year term in a university.

-SemesterStatistic: Holds information and count of students who couldn’t register or were denied from registering to a specific course.

-Student: Main actor of the system.

-Transcript: Lecture records of the student.

-UniversitySystem: Holds the semesters, students and the courses.

KEYWORDS IN RAD FILE

Credits: Weight impression of the lecture.

Curriculum: Overall content of the course.

FTE Courses: Faculty Technical Elective.

Input File: Holds the simulated semester type, number of students and course informations.

JSON File: Standardized data storing format.

Log: Storing sequential data.

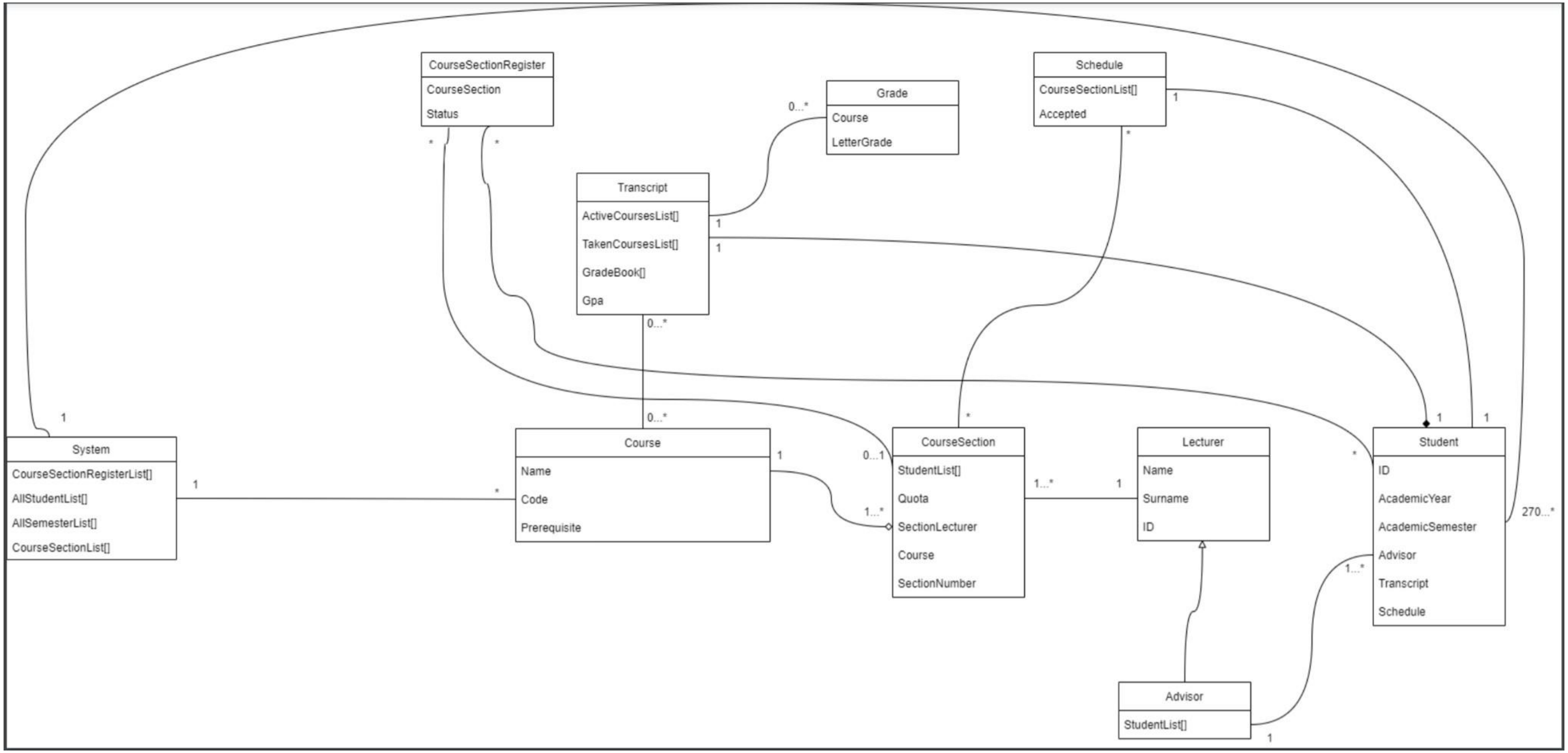
NTE Course: Non-Technical Elective.

Pre-requisite courses: Courses required to be past in order to get the connected course

Python:Programming language.

TE Course :Technical Elective.

UE Course: University Elective.



CourseSectionRegister
CourseSection
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Transcript
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