Requirements Analysis Diagram

Vision:

The main goal of this project is to simulate a course registration system. Students can send enrollment request to a course, system checks for quota and whether there are any prerequisite courses. On the other hand, advisor checks for other issues that may occur such as (time conflict (clash), the number of courses etc.)

Problem Description:

In today's age, university student information, course information, teacher information and transcripts are very complex. Complexities can be experienced as these structures take up large areas. A course registration systems should be organized very well and pay attention to the smaller details in order to make it an easier and better experience for the students.

Functional Requirements:

- The system must create random students.
- The system must be able to read from a json file and write through to a json file.
- The system must check for course prerequisites, course quotas , etc.
- The system must allow advisor to check requirements and advisors can deny or allow a student to take certain course

Non-Functional Requirements:

Usability:

Outputs and system logs should have proper names and must be clearly understandable, easy for users' use.

Flexibility:

Whenever new courses, advisors, students are added, system should integrate them without any bugs.

Performance:

The system must do its tasks in a proper amount of time. No delays.

Reliability:

The source code should be tested and should not include any bugs.

Data Integrity:

All data should be stored in json files

Maintainability:

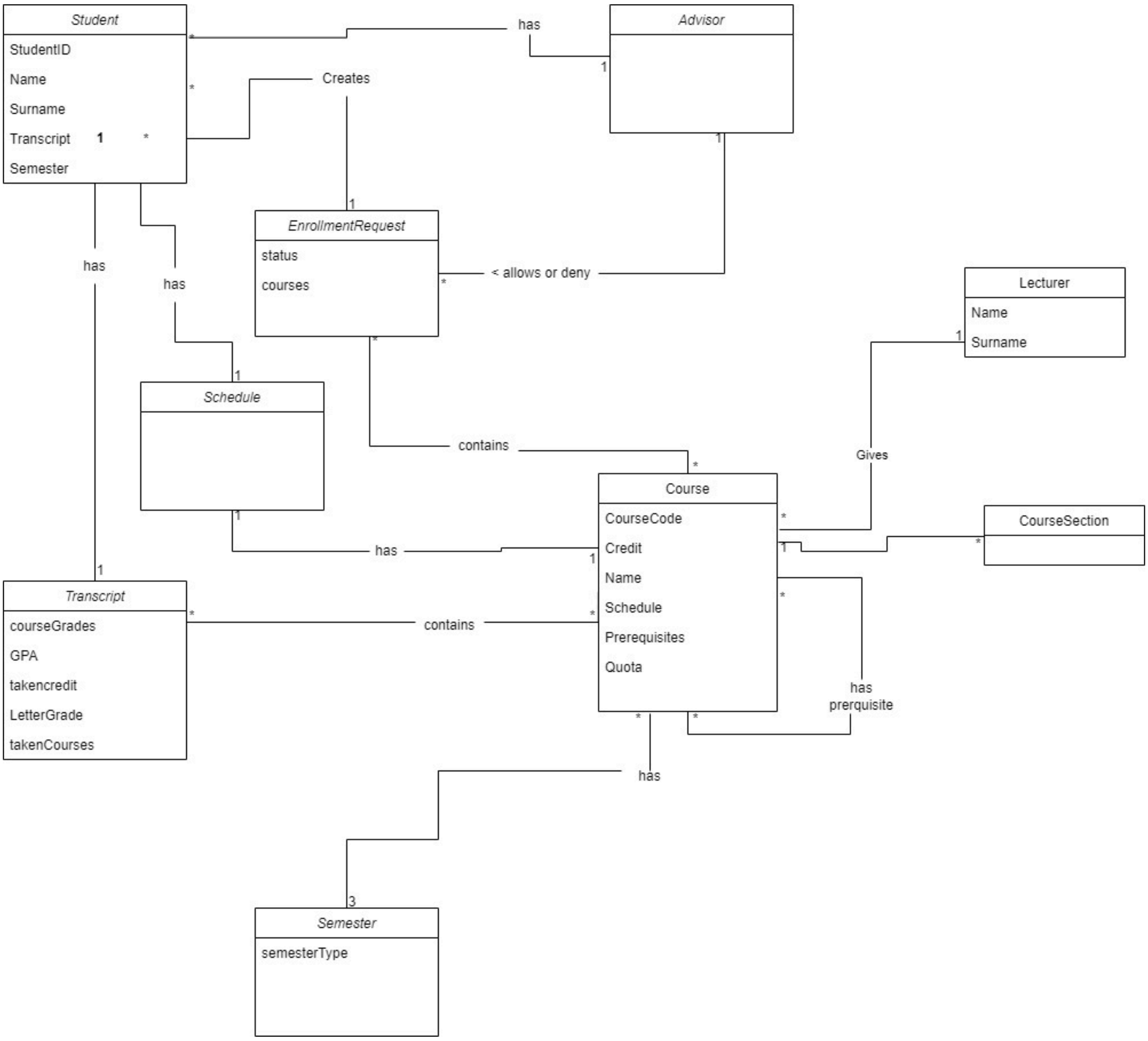
The source code must be easy to understand so if any bugs occur developer can detect with no effort. Also all possible errors should be logged in a file

Use Cases:

Actors: Customer

- System will be launched in command line (terminal).
- Randomly created students will select randomly created courses.
- System checks for course quota or other requirements
- All students have randomly generated advisor
- Randomly created advisors check every course enrollment requests and generate an output(allow/deny)
- All operations are logged and count of every operation is produced as an output

Domain Model:



Glossary:

- Course: The course is what student registers through BYS, Information Management System.
- Student: Student is a user who is interacting with and within the system.
- Advisor: Advisor is a person who is assigned to students in order to check whether they can take specific courses, regarding on quota, credits, prerequisites etc. Furthermore he/she helps students with other problems regarding university as well.
- RegistrationManager: This is the manager which helps the advisor to control the courses and students' information.
- CourseManager: This is the manager where the courses are being managed.
- FileManager: This manager writes transcripts and problems to files, as its names suggest, it manages the files.
- StudentManager: In this manager students are being created randomly.
- CourseSection: This helps to assign dates to courses.
- Transcript: The place where students' course information is kept.
- Java : A programming language(with which the project is done).
- Main: This represents the main class of design.
- Functional Requirement: A requirement that the system must be able to fulfill and to do.
- Non-Functional Requirement: A requirement that specifies how the system should do it giving it required instructions.
- BYS : Marmara University Information Management System.
- Prerequisite : something that is necessary, that needs to be accomplished in order to continue, e.g. you need to pass programming 1 before you can take programming 2
- JSON : JSON is a text-based data format that is the lightweight alternative to XML widely used on the Web for data interchange.