Requirement Analysis Document

Student Lecture Registration System

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1) Introduction

In this project, our aim is to create a student course registration system. This system will be like the course registration system used by our school. Students will interact with their advisors according to specific rules to successfully complete or not complete the course registration process.

1.1) Purpose of the System

Our system's purpose is to enable students to effectively track their course statuses and enhance communication with student advisors.

1.2) Scope of the System

The system scope includes interactions related to course registrations, encompassing activities such as course enrollment, approval/rejection, and viewing student information.

1.3) Objectives and Success Criteria of the Project

a) Objectives of the Project:

- Developing a simple Command Line Interface for students to manage their course registrations and academic information.
- Making the course registration process more efficient and accessible for students.
- Creating interaction between students and advisors
- Enabling the advisor to access student requests and course statuses.

b) Success Criteria of the Project:

- The system should be accessible accurately and promptly by both students and advisors.
- The system should process login information accurately and present correct data to the users.
- It should accurately reflect user requests, course statuses, and added data in a current and precise manner.
- Ensuring accurate processing of added data and maintaining consistency within the system.

- The system should be user-friendly and effective based on user feedback.
- The system should effectively reflect student and advisor interactions through feedback.

2) Current System

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3) Proposed System

A system operating in accordance with the principles of Marmara University course registration system.

3.1) Overview

In the project, there are two types of users: advisor and student. Each user type has its own viewing menus with distinct displays. A student can view his/her requests, course registrations, transcripts, advisor information, and check whether the registration is successful or not. Similarly, advisors can view the information and request of students and provide feedback such as approval or rejection of requests.

3.2) Requirements

a) Functional Requirements

1. Student Requirements

- Student must have an advisor.
- Student must have student ID.
- Student must have transcript.
- Student must have class year.
- Student may have request.
- Student must have username to login.
- Student must have password to login.

2. Advisor Requirements

- Advisor must have an ID.
- Advisor must have username to login.
- Advisor must have password to login.
- Advisor must have students that they advise.
- Advisor can have list request(s).

3. Registration Requirements

- Registration system includes a student and student's desired courses.
- Registration system sends the list of selected courses to the advisor.

4. Course Requirements

- Course must have course name.
- Course must have course code.
- Course must have credit score.
- Course may have pre-requisite course(s).

b) Non-Functional Requirements

1. Obtaining Student Information from JSON Input:

- Student information should be obtained from JSON files as input.

2. Secure Storage and Transmission of User Data:

- User data should be stored correctly.

3. User Interface:

- The user interface should be easily understandable and user-friendly.
- Layout should be carefully selected to enable users to access information and interact with the system effortlessly.

4. **Implementation of Registration System Program with JAVA:**
    - The registration system program must be implemented using the JAVA programming language.
    - The latest stable version of JAVA and appropriate libraries should be used.
5. **All Steps Should Be Performed on the Command Line:**
    - All registration and other processes should be carried out via the Command Line interface.
    - This allows users to interact with the system through command-line instructions for management purposes.

4) Use Cases

a) Student Use Case

Scope: Course Registration System

Level: User Goal

Primary Actor: Student

Description: This use case describes the process by which a student registers for a course using the Course Registration System.

StakeHolders and Interests:

-Student: requires proper, fast course operations as it affects his/her student career.

-**Advisor:** Accepts or rejects students' chosen courses in a way that is most productive for students.

Preconditions:

-Students' and Advisors' information is identified and authenticated.

Success Guarantee:

- The courses that are chosen by students are accepted. The students are added to course. The transcripts are updated.

Main Success Senario:

1.Student logs in the system with username and password.

Repeat 1 until username and password are correct.

2.Student lists the courses that can be chosen.

3.Student selects a course

4.Student adds-drops the selected course.

Repeat 4 until the course adding-dropping process are done.

5.Student saves the draft.

6.Student sends draft to Advisor

7.The courses that are chosen and sent to the Advisor are accepted.

8.Student logs out of the system.

Alternative Senarios:

1.Student can exit from the system.

2.Student can return to main menu.

3.Student can view the his/her own transcript.

4.Student can list the courses that were chosen by his/herself.

5.Student can list the status of request.

b) Advisor Use Case

Scope: Course Registration System

Level: User goal

Primary Actor: Advisor

Description:This use case describes the process by which a advisor operations for courses that are chosen by student in course registration system.

StakeHolders and Interests:

-Student: requires proper, fast course operations as it affects his/her student career.

-**Advisor:** Accepts or rejects students' chosen courses in a way that is most productive for students.

Preconditions:

-Students’ and Advisors’ information is identified and authenticated

Success Guarantee:

-The courses that are chosen by the student are accepted.

Main Success Senario:

1.Advisor logs in to the system by entering the username and password.

Repeat 1 until the username and password are correct.

2.Advisor checks the requests.

3.Advisor accepts the course that are chosen by student.

Repeat 3 until the there are no request left to process.

4.Advisor logs out of the system.

Alternative Senarios:

1.If the advisor identifies issues with the selected course, advisor rejects the request.

2.If the advisor wants to check the requests of student that is chosen by advisor, he/she can do this operation.

3.Advisor can exit from the system.

4.Advisor can return to main menu.

5) Domain Rules

1. **Student Domain Rules:**
    - A student cannot register for a course without having an assigned advisor.
    - A student can only log in with a valid username and password.
    - Each student must have a unique student ID.
    - A student's transcript should be updated promptly after successful course registration.
    - Only students of a certain class year can register for specific courses.
    - A student wishes to enroll in a course, they must have been successful in the prerequisite courses for that specific course.

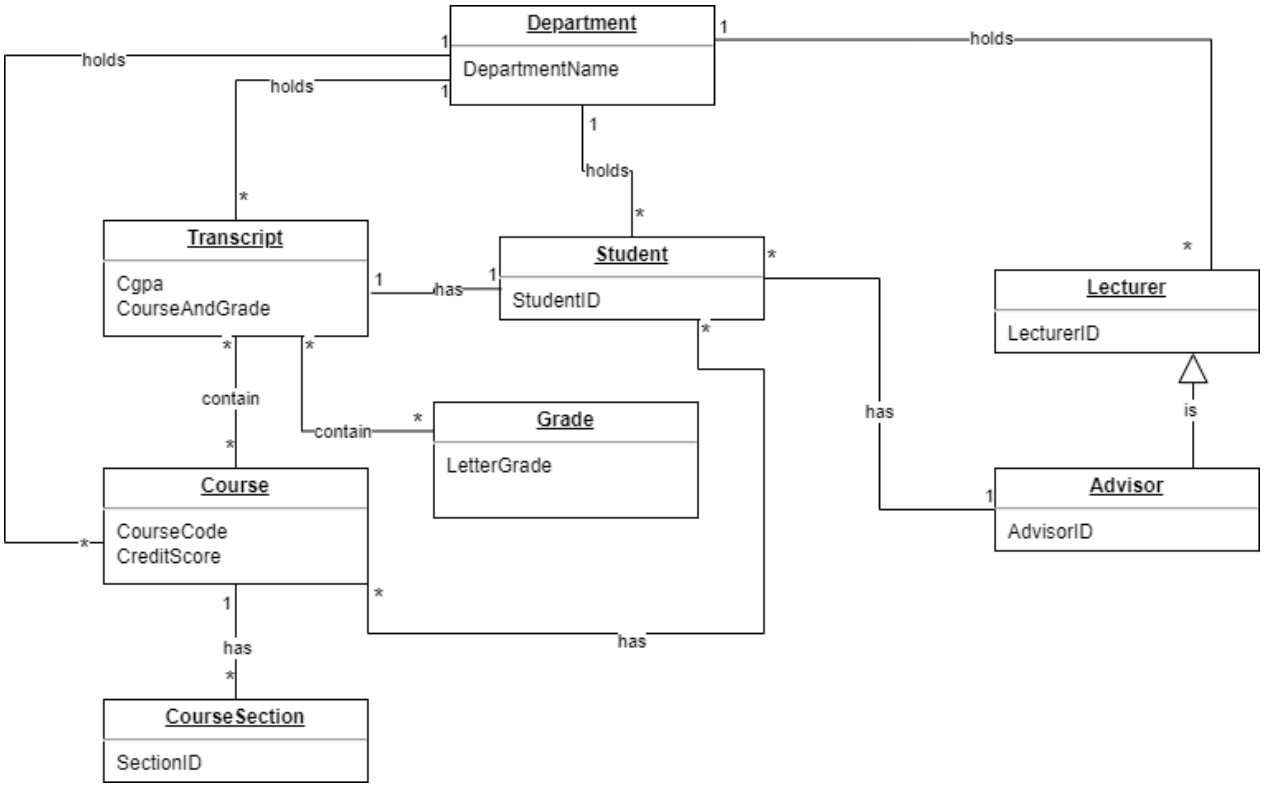
2. **Advisor Domain Rules:**
    - An advisor must have a unique ID.
    - An advisor can only log in with a valid username and password.
    - Advisors can only manage course requests for students they advise.
    - Advisors should provide timely feedback on course requests.

3. **Course Domain Rules:**
    - Each course must have a unique course code.
    - Pre-requisite courses must be clearly defined and enforced during the registration process.

4. **User Interface Domain Rules:**
    - The user interface should follow accessibility standards.
    - Error messages should be clear and informative.

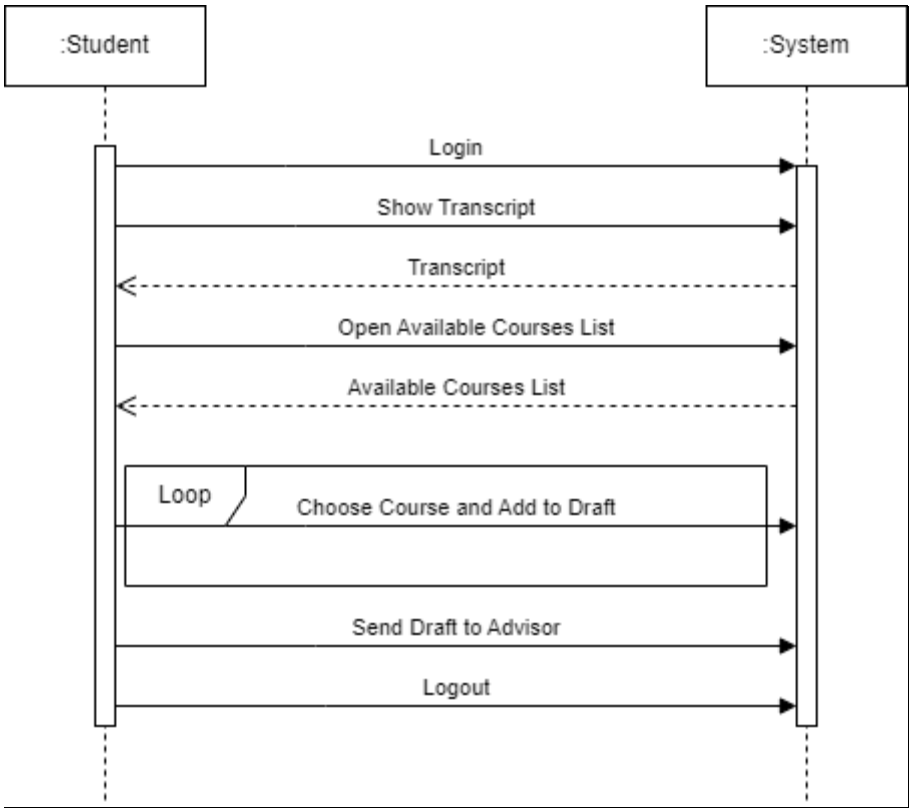
5. **JSON Input Domain Rules:**
    - The JSON input format for student information should adhere to a specific schema.
    - Data integrity checks should be performed when reading information from JSON files.

6) Domain Model

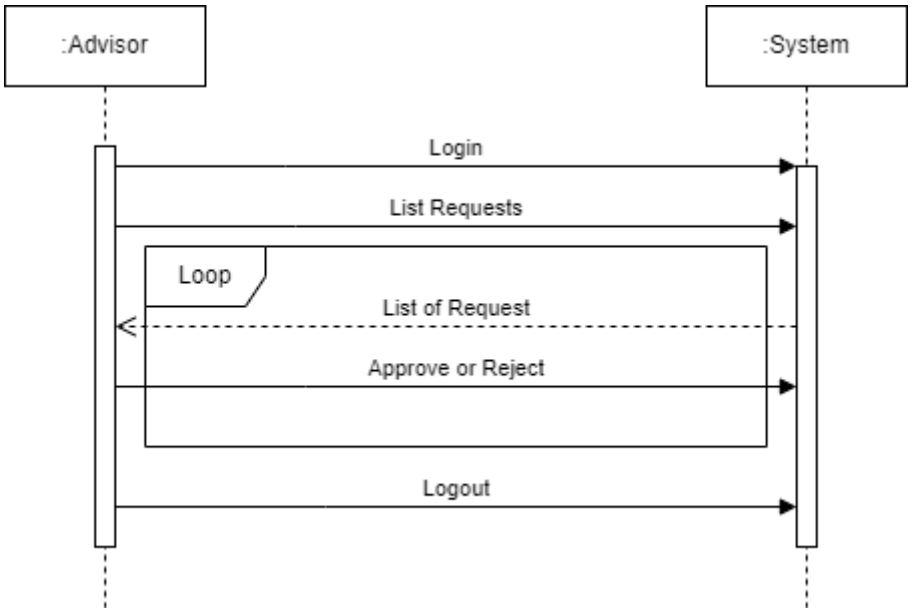


7) System Sequence Diagram (SSD)

a) Student SSD



b) Advisor SSD



8) Glossary

- **Student Lecture Registration System:**
  A software system designed to facilitate the course registration process for students in an educational institution.
- **Advisor:**
  An academic or administrative staff member responsible for guiding and assisting students in academic matters, including course selection and registration.
- **Command Line Interface (CLI):**
  A text-based user interface where users interact with the software by typing commands into a terminal or command prompt.
- **JSON (JavaScript Object Notation):**
  A lightweight data interchange format that is easy for humans to read and write and easy for machines to parse and generate.
- **Functional Requirements:**
  Specifications describing the functions and capabilities that a system must possess, including both user and system interactions.
- **Non-Functional Requirements:**
  Specifications that describe the qualities and characteristics the system must have, such as security, performance, and usability.
- **JAVA:**
  A high-level, class-based, object-oriented programming language designed for creating robust and secure applications.
- **Use Case:**
  A description of how a system will be used, typically outlining interactions between users (actors) and the system to achieve a specific goal.
- **Transcript:**
  A document that provides a record of a student's academic performance, including grades and courses completed.
- **Course Code:**
  A unique identifier assigned to a specific academic course.

- **Credit Score:**

  A numerical representation of the academic credit value assigned to a course, indicating the workload and difficulty level.
- **Pre-requisite Course(s):**

  Courses that must be successfully completed before a student is allowed to enroll in a particular course.
- **Main Success Scenario:**

  The expected sequence of actions and events leading to the successful accomplishment of a use case.
- **Alternative Scenario:**

  Variations in the sequence of actions and events that may occur in response to different conditions or inputs during the execution of a use case.