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Class Registration System

Use cases:

- Search for classes
- Login
- Add class
  - Must log in first
  - Students must meet prerequisites
  - If class full, email advisor to be put on waitlist
  - Waitlisted students admitted in queue order as space allows
- Drop class
  - Must log in first
  - Must be before registration deadline

On SU Online, students are able to search and register for classes. In order to add a course, students need to meet the prerequisites and the class may not be full. Students may also drop a class they decide not to take before the registration deadline. Students can only take a maximum of 18 credits if undergrad or 12 credits if grad student.

Students must be logged into SU Online before attempting to add or drop a class, but they can search for classes either logged in or not. If the class is full, students must send an email to their advisor with their name, SUID, and the course they want to take; students will be put on a waitlist for the requested course. If space allows, students will be automatically enrolled in the order they are listed on the waitlist.

Analysis of potential classes:

"probably classes,"

- Courses/sections: The Course class will hold information such as name, description, prerequisites, credits, and which sections are available this quarter. The Section class is a subclass of Course, and has information such as which professor is teaching, what time/day that section is offered.
  - Assumption: There may be courses that exist but aren't being offered in a certain term – info about the courses still needs to be stored in the system.
- Students: (undergrad and grad student): The student profile, it holds their type (undergrad or grad student), name, course history, courses currently enrolled in, number of credits, password.
  - Assumption: No student can be a professor.
- Registration (possible hidden class): The Registration class is responsible for the process of registering students, including validating prerequisites and schedule, checking whether section is full, etc. Registration has methods for add or dropping classes.

"possibly classes,"

- SU online: The system itself? Could be a class to validate log in. We were also thinking there needs to be a way to search for classes.
- Prerequisites: Discard because it's part of the Course class => Discard

- Waitlist: Possible class to keep information on students and emails sent. Responsible for validating email includes required details before adding students to the waitlist.
- Time/Date: (possible hidden class): Possible class to keep track of deadline of registration, as well as section and student schedules.
- Login (possible hidden class): We listed this as a possible class since students need to log in in order to register for classes or drop them. It would be responsible for logging students in, and validating passwords. Once logged in, the client is directed to the correct instance of Student.
- Email: The email will have information about which student is asking their professor (advisor) to add them to a waitlist for a specific course section.
- Professor: Stores information about which classes each professor teaches. The professor will also provide information to Waitlist after validating a Student's email. After discussing, we think this would make more sense as an attribute of each section.
  - Assumption: A professor may also be an advisor.

"rejected as classes,"

- Registration deadline: Rather than having a separate class for registration deadline, we think it would make more sense to have a separate date/time class since classes also have time and students have schedules. Registration deadline could then be an attribute of registration more generally.
- Credits: Credits are an attribute of courses, so we don't think it would be a separate class.
- SUID: This is an attribute of students.
- Advisor: After discussing, we think this would be an attribute of student, since each student has an advisor.
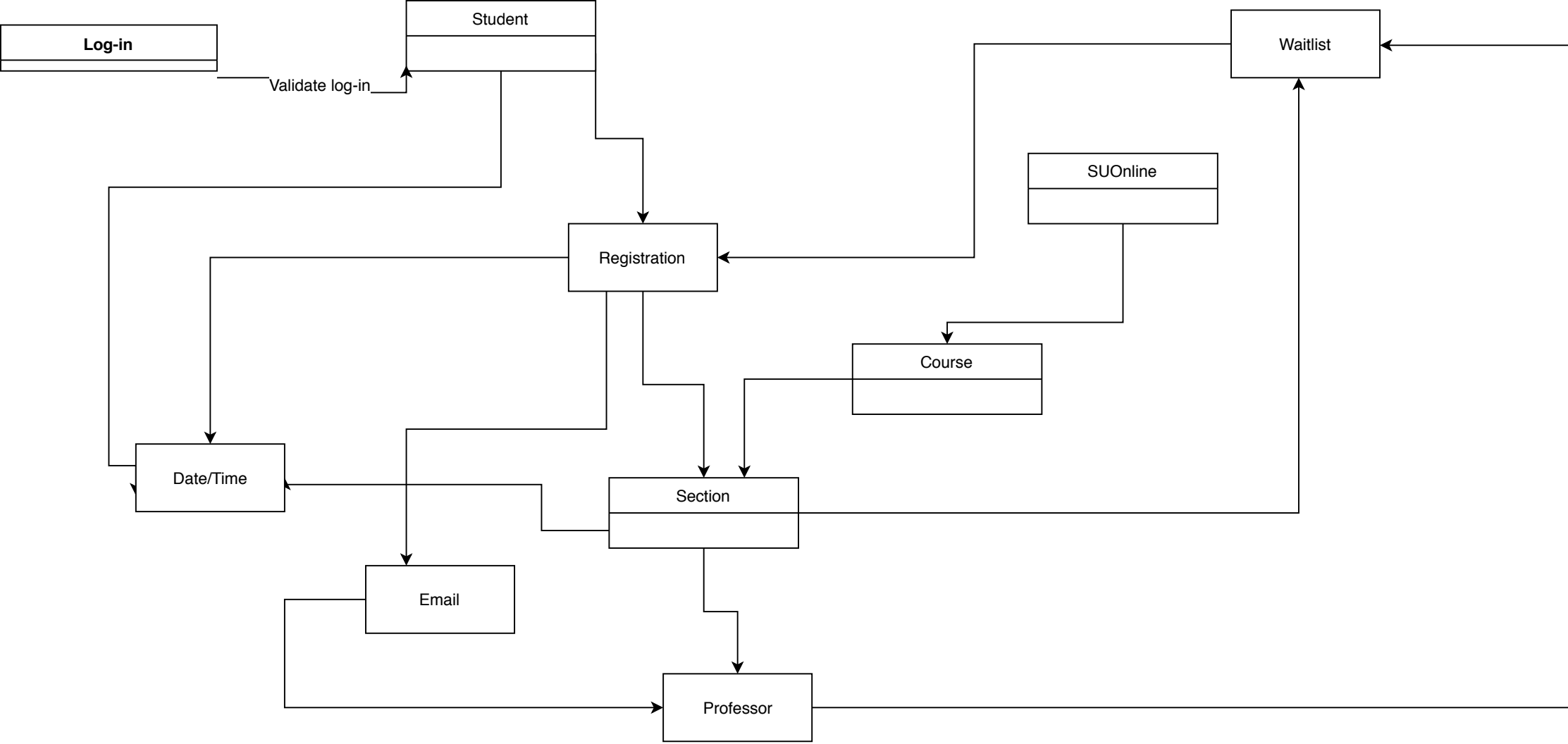 - Assumption: we decided to assume the advisor is the same as the Professor.

Relationships:

Inheritance: We only have 1 inheritance in our classes, and it's between Course and Section. Course is the super class, and Section inherits from Course. For example, a course can have multiple sections, and each section will have their own information, but also contain information about the course.

The student class has collaborating relationships with course, login and registration classes. Login class validates the students' credentials to give them access to the register class. Registration class is dependent on Login class, since students must be logged in to register. Registration class uses the information in the student class such as course history and currently enrolled courses to register the student for a course. The student class also stores course objects to keep track of the course history a student has taken.

Waitlist is dependent on registration, since registration is responsible for verifying whether the class is full. If a class is full, student needs to be put on a waitlist. If a space in the class opens up, Waitlist would be responsible for telling Registration which student is next in the waitlist queue.

Time/Date is not dependent on any other class, however Section and Registration are dependent on Time/Date. Section uses it to keep track of what time each course section is held, and Registration uses it to determine which students registered for classes first. This will determine who is enrolled, and who is waitlisted.

Student

• Knowing type of Student • Knowing number of credits current enrolled • Knowing student information (name, ID) • Knowing course history	• Course • Log-in • Registration • Date/Time

Course

Section

• Knowing course information (name, description) • Knowing prerequisites • Accessible by SU Online • Knowing number of credits • Knowing sections	• Section • SU Online

Course

Section

• Knowing section information (time/date, location, capacity, professor) • Inherited Course information • Provides information to Register • Uses DateTime class to store class schedule	• Course • Registration • DateTime

Registration

• Validating Student requirements (prerequisites, credit limit) • Validating Section requirements (capacity) • Validating schedule of student (Date/time conflict) • Responsible for adding and dropping students from selected section • Adds student from waitlist when section opens up	• Student • Section • Waitlist • DateTime • Email

Log-in

• Validate student credentials	• Student

SU Online

• Search courses	• Course

WaitList

• Stores Student information from Professor • Knowing which section of course it belongs to and when a section opens up • Knowing which students are waiting to be added to the Section • Provides information about which students are on waitlist to Registration	• Registration • Section • Professor

Professor	
- Provide information to Section (e.g. Professor teaches a Section). - Responsible for validating email about waitlist. - Provides information to Waitlist about which student wants to be added.	- Email - Waitlist - Section

Email	
- Stores information about Student from Registration (e.g. what section student wants to register for) - Sends information to Professor	- Registration - Professor