HW3 - Design

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Problem statement :

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, but 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.

Use cases:
- Search for class
- Register/add the classes
- Login into SUOnline
- Drop a class
- Put on Waitlist
- Transfer from waitlist to class

Analysis of "Nouns" & filtering candidates:

SU Online - Too large. Not a class. **Discard**.
Student - Contains name, SUID, courses taken, current status of credits. Some of the responsibilities of the student include logging in and out of Su online, search and register for classes, drop the class before the deadline. - **Yes** it is a class.
Class – contains the capacity of class, information regarding the course for which the class is, current class strength and has many responsibilities - **Yes**
Course- Contains prerequisites, credits, capacity - **Yes**.
Prerequisites - Attribute of course.-- not a class. **Discard**.
Registration Deadline - Static attribute, contained within the Course. **Discard**.
Credits - Attribute contained within Course and Student. - not its own class. **Discard**.
Undergrad & Grad Student - Each of them are subclasses of student. These classes along with Student exhibits *inheritance*. **Yes**.

Email - Not implemented in this application. Not a class. **Discard**.
Advisor - contains list of students. Responsibility includes moving the students, who email him/her about the details, into the waitlist. - **Yes**.
Name - contained within Student - not a class. **Discard**
SUID - contained within Student - not a class. **Discard**.
Waitlist - Responsibilities include adding students in particular Course waitlist, automatically enrolling the students in Course when the space becomes available. **Yes**.
Order - not a class. **Discard**.

Final list of classes:

- Student
- Course
- Undergrad student
- Grad student
- Advisor
- Waitlist
- Class

Knowledge the object of these classes maintain are,
Student: name, SUID, Current credits, list of courses

Course: prerequisites, registration deadline, credits

Class: Max capacity, Current class strength, course

Waitlist: pair of courses and waitlist

Undergrad student and grad student: Max credits student can take.

CRC Cards:

The CRC cards are as shown below,

Student

Grad student, Undergrad student

- log in into SUOnline
- search for classes
- add classes
- drop classes
- Log out of SUOnline
- Request the advisor to be added to waitlist

	- Course
	- Advisor
	- Class

Course

- Provides the credits for the course
- Provides list of pre-requisites
- Provides the registration deadline.

Advisor

- Add Student to waitlist

	- Student
	- Waitlist
	- Course

Waitlist

- Provide with the right waitlist as per course
- Move student from waitlist to the class.

	- Student
	- Advisor
	- Course
	- Class

Class

- Get the available space
- Check whether a class is full or not
- Enroll the student into class

- Student
- Course

Student

Grad student

- All the responsibilities of the student
- Provides the maximum credits the student can take

- Class
- Course
- Advisor

Student

Undergrad student

- All the responsibilities of the student
- Provides the maximum credits the student can take

- Class
- Course
- Advisor