CRC Cards

Class Name: Accounts
Parent Class: n/a Subclasses: n/a
Responsibilities: ● **Store account information** ● **Allow accounts to add each other as friends**
Collaborators: ● **Events**

Class Name: Events
Parent Class: n/a Subclasses: n/a
Responsibilities: ● **Store event information** ● **Allow accounts (users) to sign up for events**
Collaborators: ● **Accounts**

Class Name: Clubs
Parent Class: Events Subclasses: n/a
Responsibilities: ● **Store club information** ● **Allow accounts (users) to sign up for clubs**
Collaborators: ● **Accounts**

Class Name: Study Groups
Parent Class: Events Subclasses: n/a
Responsibilities: ● **Store study group information** ● **Allow accounts (users) to sign up for study groups**
Collaborators: ● **Accounts**

System Interaction with the environment:

Operating System:

- Any machine with Docker.

Programming languages:

- The back end is developed in the latest version of Python.
- The front end is developed in React.js.

Virtual Machines and Containers:

- We're gonna use Docker for containerization.

Databases:

- We will use MySQL databases for most of our storage, since we have determined that most of the data makes sense to be stored in this fashion. SQLAlchemy will be used with Python backend to interact with said database.

Network Configuration:

- MySQL database is accessed with port 42069.
- Web application is accessed with port 42070.

External Services and APIs:

- FastAPI will be used for frontend-backend connection. I think that's how it works.

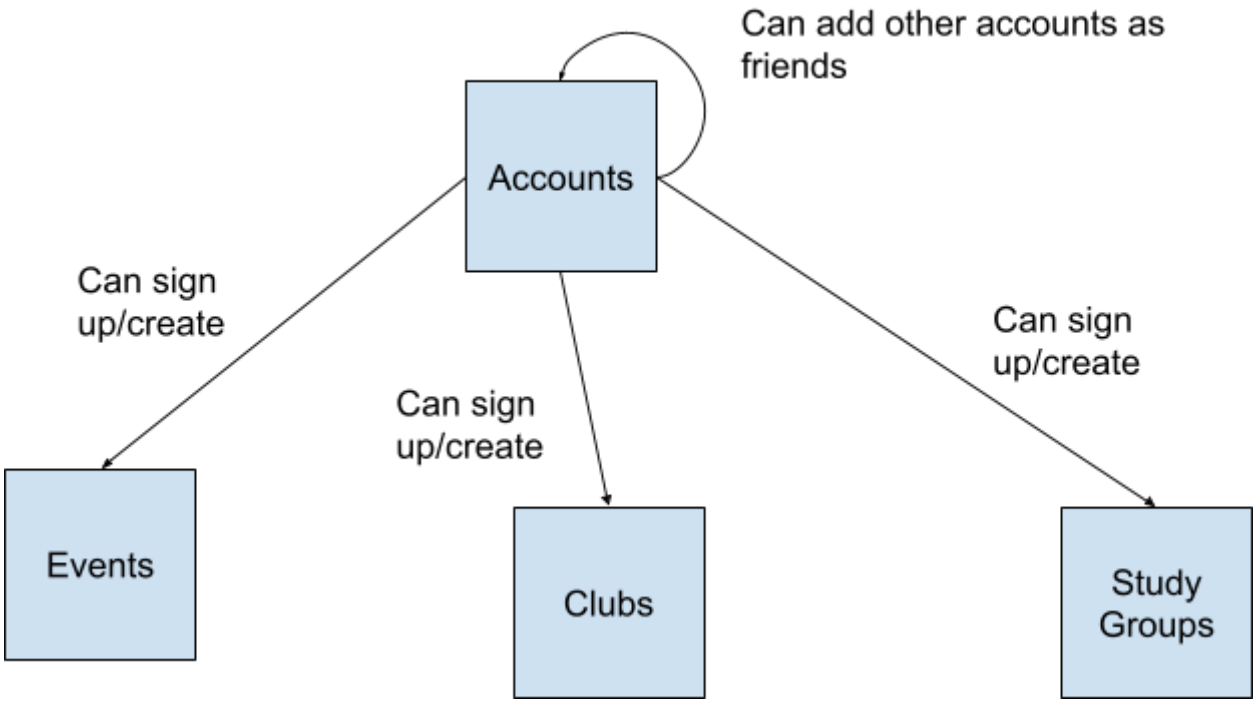
Hardware Requirements

- Enough to do a "docker compose up". Shouldn't be that much.

Assumptions

- Able to use Google, or any other browser.
- Servers involved in this system have internet access.

System Architecture Diagram:



System Decomposition and Error Handling

1) System Decomposition: Each of the components shown in the diagram would have their own webpage on our website (except accounts, unless you count the profile page), each with their own databases for storing their respective information. Accounts will be able to sign up for and/or create any of these, but I imagine we will not store which of them each account has signed up for/created. A simple “Username created this Event/Club Opening/Study Group” on the display is good enough.

2) Error Handling:

- Perhaps the user logs in incorrectly, then display something like “login failed”. Same deal for registration, if they somehow register incorrectly, like forgetting to enter a password. In general, most invalid user input should result in an error message the user can see.
- If a system failure occurs, ideally we have a way to make sure not too much is lost, but not sure how to do so.
- If a network failure occurs, we imagine the system will continue to retry to reconnect until then. Perhaps some way of informing the user of the network issue as well.
- The addfriend feature handles several types of errors. First, it is sent as a post request and uses fast api dependency injection to verify that the calling user is signed in and has a valid session (token). If not, it informs the client. Additionally, the call ensures that 1) the friend that the user is attempting to add exists in the database (ie, that the account exists) and 2) that the friend is distinct from the calling user (since a friend relationship should be between two different users). If either of these assurances does not hold, the user receives an appropriate error and displays a message explaining the error.
- Similarly, the friend list feature is sent as a post request so that the validity of the calling session can be authenticated via a fast api dependency injection. Currently, network errors (such as the server not having enough resources to process the request) are not handled for the friend related features. However, this can be easily implemented in the next sprint.