* What is the problem you are solving?
  + The problem being solved is the lack of an existing search functionality in the GroupMe messaging app. Existing popular messaging platforms such as Facebook Messenger, Slack, and Discord all have an option to search through past messages, but GroupMe has no such functionality. This project will allow GroupMe users to search through their prior messages, as they would be able to in other apps.
* What data will you use?
  + The data on which the app is being tested is a collection of GroupMe chats. Although the total number of messages in these chats does not quite reach the targeted 100k mark, there is more than enough data to demonstrate a basic search functionality, even for less common queries.
  + The data on which the app could potentially be used in the future is any existing GroupMe chat, if the search tool is invoked on by one of the members in the chat.
* What work do you plan to do the project?
  + The project will involve creating a bot for GroupMe to automatically handle search queries. The components of the project include message crawling, search infrastructure, and query handling. The bot will continually crawl its groups for messages to stay up to date in its retrievals and to be notified of queries. Messages of a special format in the group will be considered queries. Whenever a query is processed, the bot will perform a search on its database and respond to the query.
* Which algorithms/techniques/models you plan to use/develop? Be as specific as you can!
  + The data crawling will be done through the built-in GroupMe API, which can be queried through the requests library. Messages will be parsed from the Json results and converted into a format such that they can be handled by Solr. The functionality will include searching by both user and keyword. All messages will be stored in the database such that they are partitioned by group, since a search always occurs on just one group. In order to handle user searches, messages will be indexed by user, sorted on timestamp. Whenever a user search is performed on a group, messages from that user will be returned, with most recent messages being shown first. In order to handle keyword searches, the program will use the functionality built into Solr for searching on keywords. Messages will be returned ordered by relevance, with ordering by recency if possible.
* Who will evaluate your method? How will you test it? How will you measure success?
  + The program will be evaluated through testing on real-world data from our own groups on the GroupMe app. The evaluation and testing will be intended to simulate realistic searches which users would want to perform. For the keyword search, the search terms will consist of important events and topics for the group. For the user search, the search can consist of any of the users who have been posting regularly in the group. Results will be tested for both usefulness and accuracy. The test for usefulness is not objective, but rather a subjective verification that the results generated are of practical worth. The accuracy can be verified manually by retrieving the correct search results by hand. This method, of course, is long and impractical, hence the need to implement a GroupMe search bot. Thus, the method of manual searching will be used only enough to verify that the programmatic search is correct. In terms of precision and recall,
* What do you expect to submit/accomplish by the end of the semester?