**Project Proposal - *AgreeMates***
CSE 403, April 2, 2014
Amit Burstein - bursta@{cs/uw}
William McNamara - mcnawi11@{cs/uw}

Vision

Keeping up with managing bills, chores, and supplies in an apartment environment can be a frustrating experience. Currently, solutions exist to solve some of the smaller problems in these environments like bill splitting and chore scheduling, however no overarching solution exists that solves all of these problems and is easily accessible through the web. *AgreeMates* is a mobile-accessible web application that helps keep track of bills, chores, supplies, agreements, and announcements for roommates using calendar and table views and notifications. The application is geared towards tenants living in apartment settings and even their landlords if applicable. We believe *AgreeMates* will alleviate the inherent frustrations of living with others.
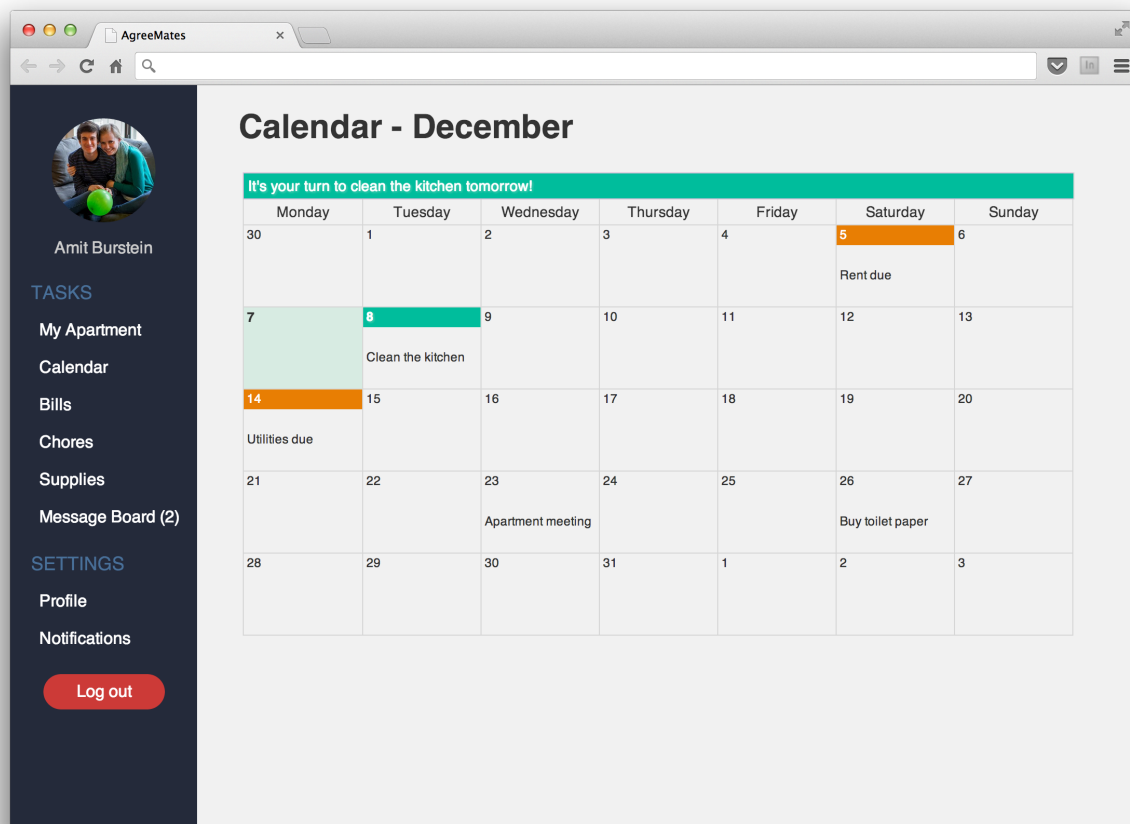
UI mockup

Application Features

Upon opening the *AgreeMates* website, new users are greeted with a friendly signup/login page that highlights the applications's features. After logging in, users are greeted with a main calendar view for displaying upcoming bill due dates, when certain roommates are to complete certain chores, etc. A sidebar displays links for common operations like updating your profile, starting a new "apartment" or adding new roommates to an existing one, adding and splitting up bills and chores, and a link to view supplies stocks (toilet paper, garbage bags, groceries, etc.),

a message board, and custom roommate agreements. A separate settings menu will be used to set up email/SMS notifications and tweak permissions and other settings.

Users may also decide to interact with landlords through *AgreeMates*. Upon logging into the application, a landlord sees a more slimmed down interface that allows for communication with possibly many "apartments".

Software Architecture
Given that the data for *AgreeMates* is relational in nature, the application will be backed by the PostgreSQL relational database system. To manipulate user data in the database and handle back end HTTP routing and data delivery, the application uses Node.js with the Express web framework. To handle the issue of a user login system and make it a seamless experience, the application will make use of the OpenID standard like many applications do across the web. To achieve a friendly front end UI, the application uses HTML, CSS, and JavaScript. The design will be responsive so users will be able to access the application through their mobile browsers. The actual hosting of the application will be done either through AWS or Heroku depending on future database requirements and pricing.

From a technical viewpoint, the work required to build this application is enticing since it encompasses the entire web stack from the back end to the front end. *AgreeMates* also uses popular and trendy web systems, frameworks, and platforms like PostgreSQL, Node.js, Express, and AWS/Heroku.

Challenges and Risks
The largest challenges we anticipate to come across while developing *AgreeMates* are creating an efficient and modular database scheme and designing an intuitive and attractive UI that leads to a god user experience. The data our application relies on is heavily abundant and relational in nature which can make the database design process very difficult; a poor database design could lead to future scalability issues. To minimize the risk of scalability issues, we may need to allocate more resources to database design and make use of UML diagrams or other visual tools. As for designing an attractive UI, to minimize the risk of creating a poor user experience, we could do some simple user research by asking other classmates or friends about their experiences using our paper prototypes, mockups, etc. This will give us a good idea of what goes into creating an intuitive UI before we begin implementing the heavier parts of the application.