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Capstone Project Proposal

Brief Summary of the Project:

For our capstone project, we have decided to work on a new social-media platform. A user of this platform wouldn't have a profile, just their name and a picture. The focus would be on participating in groups that people are free to create and invite others to. These groups would allow for creating events, having discussions, posting photos, and more! In addition to this, there would be a messaging component so people that are not in groups with each other could still communicate through this platform. The academic focus of the project would be on networking, graph theory, databases, and cryptography (passwords).

Description of what will be difficult:

The core difficulty of this project lies in supporting the wide array of functionalities the platform will offer, such as: calendars and event scheduling, photo uploading to the database, discussion threads, group creation and visibility, user searching (through other users as well as past discussions), and account creation and deletion (considering graph theory). In addition to this, we will need to learn more about and be able to execute: the storage and efficiency of large data sets, communication over the internet, storing and accessing from a database, and ensuring passwords are properly encrypted.

Justification of the "independent exploration" angle:

Through this project we'll learn how to create an independent web app using JavaScript, as well as practicing good design while doing so. We will be teaching ourselves how to use a new set of tools (a new programming framework, specifically), which is something we will likely be doing a lot when joining new jobs and starting new projects. Also, this project is highly expandable. If we choose (and if we have time to) we may stretch the same idea to handheld devices, giving us an opportunity to learn the tools necessary for phone app design.

Tools, packages, and frameworks to be used:

For this project we will use JavaScript as our programming language, with AngularJS as our MVC (Model-View-Controller) Framework. AngularJS has experienced increased popularity in the past year by over 300%, and has very good accessibility in tutorials and documentation available.

A tentative timeline for the project broken down by week:

The rough schedule for our project is defined below:

Week Beginning	Checkpoints
January 20th	Planning: Functional requirements, project UMLs, use case diagram, and choose basic design
January 26th	Planning: Database tables, server setup,
February 2nd	Account creation/deletion (authentication), sign in and basic design
February 9th	Make structure of a group part 1 (discussion threads)
February 16th	Make structure of a group part 2(create events)
February 23rd	Make structure of a group part 3(post photos, visibility)
March 2nd	User Create/Delete groups
March 9th	Post/Delete from group
March 16th	Spring Break
March 23rd	Create invite/accept invite capability
March 30th	Search for groups (possibly by location)
April 6th	Extra use cases
April 13th	Extra use cases and design
April 20th	Communicate with people outside groups
April 27th	Test requirements
May 4th (short week)	Test requirements

An emergency plan for what to do if you run out of time:

In the event that our capstone project becomes too involved for the time which we are allotted, we will pursue a core functionality. The necessary functionality in the project will be creating an account, creating a group, inviting others to the group, posting to the group (discussion thread), and creating events.

The stretch goals that we are striving to reach include posting photos, allowing for account visibility, searching for groups, and communicating with individuals outside of groups. We will be following the schedule above and removing the stretch functionalities if we do not have time to complete them. If we advance in the project ahead of schedule we will begin the core functionalities for an android application.