Goh

Team 7 - Product Backlog

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Problem Statement

Group and collaborative environments have struggled to coordinate and credit the contributions done by the individuals of the group. Our goal is to deliver a web application that can bring together the functionality of a project task manager where users can communicate, collaborate, and track their project. Additionally, generating an analytical report of the contributions of each group member that can be viewed after the completion of the project.

Background Information:

Target Users

During the K-12 school years there have been numerous projects in science, literature, and history that require group collaboration. Measurements in individual participation within the group setting have mostly been delegated to peer evaluations. Additionally, project management has been delegated to the coordination of multiple communication applications. While project task managers are common, for users within both the academic and professional sphere, a service that can coordinate and credit individuals within the group is much needed.

Similar Platforms

There are many project managing services available such as ClickUp and Trello. These services allow group members to create checklists and various functionalities to track the progress of the users. Additionally, ClickUp includes a chatting functionality that will allow group members to message each other and coordinate within the locality of the application.

Limitations

The biggest limitations of ClickUp and Trello is that they do not have a functionality to display the contributions of each group member after the project is completed. To combat this, we plan to implement various analytical reports at the end of the project that display the amount of time that each group member worked on each task. Additionally, we believe that not every group member has tasks that are relevant to them. ClickUp and Trello do not have personalized interfaces for group members. By incorporating interfaces that are personalized to group members, focusing on displaying tasks relevant, we believe that we can make the planning and collaboration process more efficient.

Functional Requirements

*** User(Member, Leader, and Guest)**

*** Member (Project and task editing privilege)**

*** Leader (Owner)**

*** Guest (Task metadata and transfer between users privilege)**

1. As a user, I would like to register for a Goh account.
2. As a user, I would like to login to my account.
3. As a user, I would like to be able to change my account information (reset password, change avatar, username, linked email, and etc.)
4. As a project leader, I would like to create the project.
5. As a project leader, I would like to create tasks for my project.
6. As a project leader, I would like to share my project and its tasks with other members.
7. As a project leader, I would like to promote guests to project members.
8. As a user, I would like to be able to easily navigate between my projects and tasks.
9. As a project leader and member, I would like to be able to delete tasks.
10. As a project leader, I would like to set the status of tasks (multi user or single user).
11. As a user, I would like to be able to take on a task.
12. As a user, I would like to search for a specific task (Ctrl-F functionality).
13. As a user, I would like to be able to change the status of my tasks.
14. As a user, I would like to be able to record the time spent on my tasks.
15. As a user, I would like to comment on group members' tasks.
16. As a user, I would like to receive feedback from group members.
17. As a user, I would like to be notified when one of my group mates comments on me.
18. As a user, I would like to be notified when a task is assigned to me.
19. As a user, I would like to see the due dates for each of my tasks (calendar system).
20. As a user, I would like to sort the priority of tasks.
21. As a user, I would like to pin/highlight features (pin tasks to the top).
22. As a user, I would like to view my project's progress at any time in its development.
23. As a user, I would like to have role tags (e.g. CS project: frontend, backend, logo designer, and etc.).

24. As a user, I would like to export the task calendar.
25. As a user, I would like to view all contributing users' time spent on tasks.
26. As a project leader, I would like to modify project content.
27. As a project leader, I would like to modify task content.
28. As a project leader, I would like to notify all the group members at once.
29. As a project leader, I would like to assign specific group members into a small group.
30. As a user, I would like to be notified when I am assigned to a small group.
31. As a user, I would like to see other members' contact information.
32. As a project leader, I would like to have group communication.
33. As a project leader, I would like to export the task calendar. So, I can write the specification of my project.
34. As a project leader, I would like to require the user to finish a task before other tasks.
35. As a user, I would like to see what task my group mates are working on.
36. As a user, I would like to pin someone. So, it is quicker to contact someone.

Non-Functional Requirements:

Architecture and Performance

For the Goh project, we plan to develop a web-based tool with a disjointed frontend and backend design model. With this design model, we can evenly divide the tasks to the limited human resource we have and maintain the accuracy and robustness of the source code. The frontend will be written under the ReactJS framework which is useful in designing basic UI widgets and interactive features. In addition to basic UI design, we plan to adopt ThreeJS, a powerful library used for creating and displaying animated 3D computer graphics in a web browser using WebGL, and graphing tools D3JS in order to provide better visualization for users. We will deploy the application with PHP7, which provides more powerful features in frontend-backend communication than HTML.

The backend will be developed under Google Firebase, which provides built-in libraries and NoSQL databases for user authentication and store/retrieve/update project information and user logins.

Security

All the authentication and user information will be stored using Google Firebase. Since Google firebase is a well-established backend, we can provide a safer environment for our users.

User privacy and sensitive information are paramount to us. We are committed to not collecting user information or sharing user data with third parties maliciously. We will use Google Firebase as a database to manage the data. To prevent hacking, we will also backup the data on our servers periodically.

Usability
The interface will be visually appealing and very straightforward. Due to the nature of the website, it is imperative that the interface requires the bare minimum. Thus, it must act as a tool to support group members in their collaborative environment rather than inhibit it. If time allows, between instructor or management and students or employees, the interfaces will be very similar. The only major differences being that the instructors or management can assign projects to the students or employees. Additionally, we want to make sure that our product can be used for a variety of different screens and resolutions.

Testing
We strived to maintain the high-quality and accuracy of our application. The testing will be held each week starting from small unit tests and front-end features to multiple users' tests. Once we have the basic framework of the application done, we can start the black-box and usability test with potential users and record their feedback. In-group discussion will be held after each testing section to decide whether opinions should be taken or not.

Hosting/Deployment
Goh follows the design scheme of separated frontend and backend, we could maintain high-quality updates on either one of them with less risks of crashing. During the development period, we will host two servers on Google Firebase, one for developing versions and one for stable published versions.

Scalability
Goh strives to become the primary medium for project management and peer evaluations. With well over 100 million potential users, ranging from K-12 schooling to university and professionals, Goh would need to be ready to support these users at any time with acceptable response times of approximately 200ms. While the Goh prototype will be nowhere near the end goal, the initial framework and database we have chosen to implement can only support 100 concurrent users. Despite the drastic difference, the framework and database are scalable to be able to support approximately 20,000 concurrent users.

Availability
Goh servers aim to be available to users at all times. Due to the wide range of timezones that users could come from, Goh needs to be able to provide service to its users no matter the time.
Authentication service supports 20,000 verification per month