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CSCI 3010

Individual Project Proposal

1. Our initial project idea is to create a web application that allows users, specifically gamers to find other gamers to play with and find new friends that have similar interests. This will potentially include features such as user profiles, user personality cards, friend suggestions, LFG(looking for groups) features and more to be determined later.
2. In order to develop a web application, we plan on utilizing React and Node.js in order to implement it and potentially host it on Heroku. We will be using JavaScript, HTML/CSS in order to create the front end. We will use Bootstrap and styled-components libraries in order to make it look aesthetically pleasing. Additionally, we will try implementing a database in order to store information about each user.
   a. React - Somewhat familiar
   b. Node.js - Somewhat familiar
   c. JavaScript - Not familiar
   d. HTML/CSS - Familiar
   e. PostgreSQL - Familiar
   f. Amazon S3 - Not familiar
   g. GraphQL - Not familiar
3. Our project won't work if it doesn't have…
   a. Our project won't work if it doesn't have a database
   b. Our project won't work if it doesn't utilize React and Node.js
4. We would need graphics such as the game logos that will be grabbed from Google images and will be uploaded to an Amazon S3 bucket which from there we can use the API to upload the images onto our website. Images can be cited on the website. Other than that, there will be no other outside data that will be utilized.
5. There will be a front end and a back end which will be integrated together using GraphQL. The front end will be made with React and the back end will be made using PostgreSQL.
   a. Classes/objects
      i. React does have classes but inheritance could be shown through other means. We know that we can have nested components, such as having a profile component and having the personality cards component nested within that, so that they're all interacting with each other.
      ii. Based on my research, we will potentially use Iterator and prototype. We will need to do more comprehensive research into how I will implement these design patterns.
   b. Database model
      i. The database model will consist of the following components:
         1. Games
         2. Friends

3. User profile
4. Other…
    ii.   In order to form the database model, we will need to do Database Normalization to figure out the structuring of my database that we will use.
6. The GUI user interface will be the actual web page that will be created using HTML and CSS. Here are some initial sketch design ideas of the web pages.
   a. Games Page
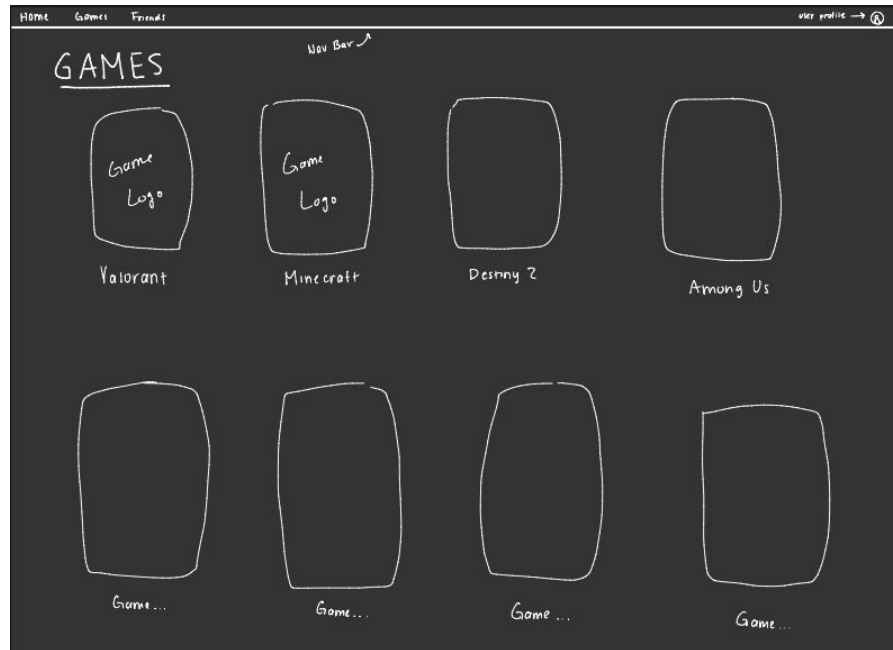
For this page, the game logos will be displayed with the respective name of the game under it and when you click on the logo or the name, it takes you to a page where you can see who plays that specific game and if anybody is looking for people to play with.

    b. Friends Page
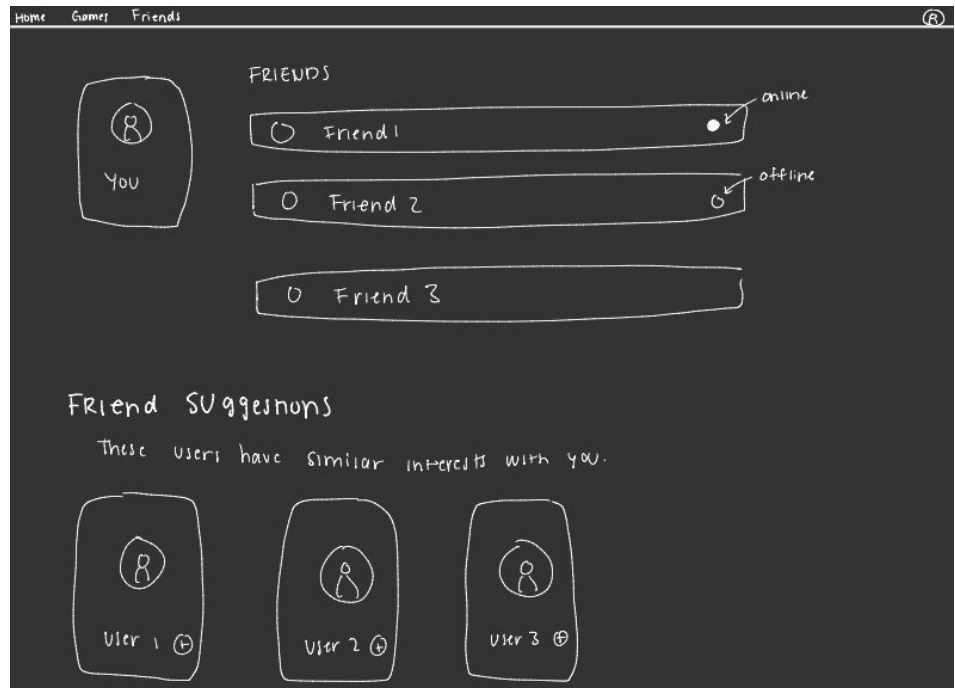
- Algorithm that adds to some "Connection" variable between two users based on number of similar games/similar personality traits. Then for the friend suggestions, grab the top 3-5 users with the highest connection level to the user to display.

c. Profile Page
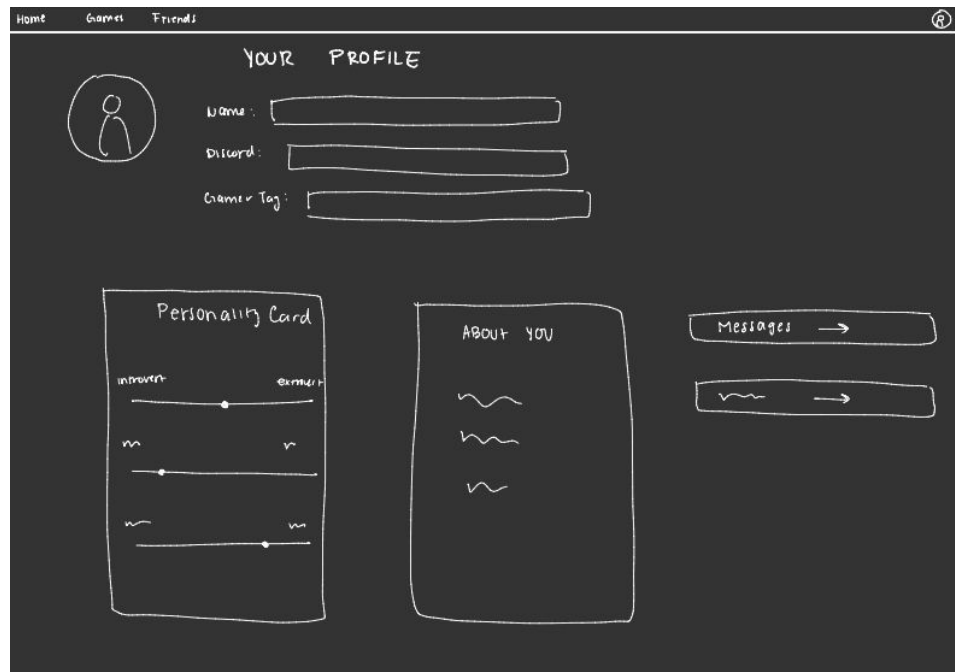
    d. Login Page

    e. Looking to Play/ Leaderboard page

        i.

        ii. This page will show up when you click on the game from the Games page.

    f. There will also be a user settings page, where the user can personalize their profile and their personality card.

7. Plan for Rest of Semester:

    a. Week 1:

        i. Homework 2, Part 2&3 will be due

        ii. This week, we will need to finalize our initial plan by revising and conducting more research into the tools that I will use to be more familiar with them.

        iii. We will need to set up my Github and initialize all our checkpoints into folders.

1. Setup of the "barebones" of the project and setup the skeleton of our project
   iv. Implement React and set up an initial page with "Hello World!"
   b. Week 2:
      i. Design and implement the basic layout of each page (front-end)
      ii. Make a more concrete, complete home page
   c. Week 3:
      i. Homework 3 will be due during this week.
         1. Turn in basic layout of the web pages, critique and see what we need to improve on, what changes need to be made
      ii. Preform database normalization and create a database model
   d. Week 4:
      i. Take critiques from previous week and implement changes
      ii. Work on implementing back-end database with PostgreSQL
   e. Week 5:
      i. Figure out how to store images within the database (Amazon S3?)
      ii. Front end should be able to use the database and display on the web pages
   f. Week 6:
      i. This week will be focused on making the website look aesthetic
      ii. Maybe gather user feedback from friends/family and see what looks good
   g. Week 7:
      i. Homework 4 will be due
      ii. This week work on integrating the front end and back end together (using GraphQL)
      iii. Implement changes to front-end based on feedback
   h. Week 8:
      i. Make sure there are no conflicts when pulling data from database after integrating front end and back end together
      ii. Make sure website is working properly
   i. Week 9:
      i. Start on project presentation
         1. Make slides
         2. Organize each slide for different topics to be discussed
   j. Week 10:
      i. Homework 5 will be due
         1. At this point, everything should be good to go
         2. Finalize slides and get ready for demo

8. We intend to stay engaged in the course while working on the individual project by actively participating in class programming exercises, as well as continuing to do the out-of-class programming exercises. We will also look further into class examples via the

GitHub resources provided and make sure we have a clear understanding of the topics being covered in class.