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1. Introduction

a. Purpose

The main purpose of this document is to present a detailed description of the Horizon social media app. It will explain the features, interfaces, what the system will do, and the constraints in which the software must operate. This document is intended for the developers of the system and the client and serves as a guide for future enhancements and modifications.

b. Client

The client is Edwin Rodriguez, a professor from Cal Poly Pomona who envisions a new social media platform that allows for meaningful engagement.

c. Company

Horizon is a newly formed company that specializes in web applications that are scalable, secure, and user-friendly.

d. Scope of Project

This app will be a social media app for the client. The app will feature user accounts, content creation, voting system, communities, and messaging between users. Horizon hopes to combine the features of popular social media platforms such as Reddit and Instagram to create a fresh and new idea.

2. Overall Description

Horizon-social media is a social media platform where users can create accounts, join communities, interact through posts, comments, voting, and messaging. The app is designed for users to create content and engage with others. Communities will act as a backbone for the platform and allow users to do a variety of functions.

3. Functional Requirements

FR 1. User Management

FR 1.1 Account Creation

- a. First and last name: User inputs first and last name; system validates for length and allowed characters.
- b. Email Address: User inputs valid email format, the system checks for uniqueness.
- c. Phone Number: Optional input for additional verification; the system validates the format.
- d. Username: User creates a username to be identified by; system validates for length and uniqueness.
- e. Confirmation: User reviews all inputs on a confirmation screen before the final submission; there are also options to edit any field.

FR 1.2 Password

- a. Password Criteria: Enforce a minimum length (e.g. 5 characters) and requirements for numbers or special characters.
- b. Password feedback: If the requested password does not contain the necessary characters they will be prompted to re-try

FR 1.3 Security Questions & Answers

- a. Selection of Questions: Provide a list of pre-selected security questions from which the user can choose.
- b. Storage of Answers: Store answers securely and use them for possible account recovery.

FR 1.4 Verification

- a. Email Verification: After account creation, clicking on a unique link sent to the user's email will confirm its validity and verify their account.
- b. Phone Verification: After account creation, the system will send a unique code to the user's phone and entering the said will verify your phone within the application.

FR 1.5 Terms of Service and Privacy Policy:

- a. User Agreement. Present the terms and conditions and Users need to read and accept terms and policies of the service before account creation.

FR 1.6 CAPTCHA Verification:

- a. Bot Protection: Implement CAPTCHA verification during account creation to prevent automated submissions.

FR 1.7 User Profiles

- a. Public Profile: User profiles contain information such as username, bio, and activity. Users can control the visibility of those fields to others.

FR 1.8 Following System

- a. Follow Mechanism: Users can follow communities or individuals to see their post in their feed
- b. Unfollow: Users can unfollow communities or individuals to stop seeing their posts in their feed

FR 2. Content Creation and Management

FR 2.1 Post Creation

- a. Media Uploads: Support uploading of images with videos, with size restrictions and format checks.
- b. Post Description: Users can add descriptions that are visible below the media.
- c. Sound Integration: Users can select or upload sounds to accompany their posts.
- d. Tags: Users can add up to a specified number of tags which notifies another user of the post.
- e. Privacy Settings: Users can choose if they want their post to be seen by followers or everyone by a post to private or public in the settings of their post.
- f. Hide/Show Comments: User can choose if they want people to be able to comment on their post
- g. Hide/Show Votes: Users can choose if the amount of upvotes or downvotes can be seen

FR 2.2 Content Editing and Deletion

- a. Edit Functionality: Allow users to edit any of their posts: changing any attributes of the original submission.
- b. Delete Functionality: Enable users to delete their own posts with a confirmation prompt before final deletion.

FR 2.3 Filtering

- a. Filter Content: Implement keyword filtering options for users to find specific posts.

FR 2.4 Analytics and Reporting

- a. Performance Metrics: track engagement, reach, and growth
 - i. How many posts are there with a certain tag? How does it compare to this week before last week?
 - ii. Total number of user accounts and posts created
- b. Community Insight: Analyze data to understand community data, preferences, and trends
- c. Reporting Ability: Provides reports on community performance

FR 3. Interaction and Engagement

FR 3.1 Voting System

- a. Vote mechanism: Under each post, there will be an upvote button and a downvote button.
- b. Upvote: Users can upvote a post which will add to a post's score which starts at 0
 - i. Will darken upvote button when activated and add 1 point to total score
 - ii. If downvoted, the downvote button will revert to the original form and take back down vote
- c. Downvote: Users can downvote a post which will subtract from a post's score
 - i. Will darken downvote button when activated and subtract 1 from total score
 - ii. If upvoted, the upvote button will revert to original score and take back upvote
- d. Score Tracking: The post model should have an upvote and downvote attribute in the database and automatically update post scores based on the user interactions.

FR 3.2 Commenting

- a. On a post there will be a button beneath labeled with comments. A user should be able to click the button and be taken to another view with a text message bubble. The user should be able to write their thoughts and press post. Their comments should be visible to others who also open the comment button.
- b. Discussions

FR 4. Notifications

FR 4.1 Activity Notifications

- a. Message Notifications: Provide notifications for when a user receives a message
- b. Post Notifications: Whenever a someone user is following posts send notification
- c. Community Posts Notifications: Notify user of posts within a followed community
- d. Follower Notification: Notify users when someone requests to follow them
- e. Following Notification: Notify users when someone accepts their follow request
- f. Upvotes Notification: Alert users when their posts receive upvotes
- g. Frequency/repeat notification: Users can adjust notification frequency or turn off notifications

FR 4.2 Customizable Alerts

- a. Allow users to adjust the types of notifications they want to receive or mute if necessary.
- b. Messages: can be limited to only followers or random users or turned off

- c. Posts: Don't notify user of posts
- d. Community Posts: Don't notify user of community posts
- e. Follower: Don't notify of people requesting to follow
- f. Following: Don't notify when another user accepts their follow request
- g. Upvotes: Don't notify user when someone upvotes their post
- h. Frequency/Repeat notification: can be adjust to happen less often or turned off

FR 5. Messaging

FR 5.1 Direct messaging

- a. Friends list view that allows the user to select among friends to send a direct message. When a friend is selected, direct to a messaging view that allows the users to send messages to one another.
- b. In the messaging view, have a name displayed on the top, then the messages and/or images sent on the center of the view with user messages on the right hand side and other user(s) on the left hand side
- c. Be able to also send a message to an unfriended user as well. When receiving messages from an unknown user, display a warning that the user does not know the messenger.
- d. Group Chats: The friends list view will also have a button to send a new message that can choose one or more users to add to a chat.

FR 6. Community Features

FR 6.1 Follow Communities

- a. Notify users of posts within the community they are a part of.
- b. Display community under the users following list

FR 6.2 Moderation tools

- a. Logs:
 - i. Members: List of community member actions
 - 1. member leaves / joins: Track when members join or leave the community
 - 2. member sends a message / deletes message: logs when members send, edit, or delete messages
 - 3. member sends feedback: Record feedback or reports submitted by members
- b. Moderators: List of what moderators do within community
 - i. changes to community settings: Log changes made to community settings
 - ii. changes to permissions: Record modifications to user permissions and roles
 - iii. deletes any member messages: Log any message
 - iv. kicks any members
 - v. moderator leaves
- c. Reports:
 - i. List of complaints members of the community create
 - ii. Report are by default unresolved

- iii. Can mark reports as resolved

FR 6.3 Community Management

- a. Promotion: Owner or any mods can promote other users to help manage a community
- b. Hierarchy: Owner can define and create the ability of roles which can be assign to members of community

FR 6.4 Role Permissions:

- a. Read/View: View other content
- b. Write/Edit/Delete
 - i. Can post content features listed in (FR 2.1)
 - ii. Modify your own post: make any changes to features listed in (FR 2.1)
 - iii. Save changes to draft
 - iv. Can delete your own post
- c. Comment: Add comments to other posts
- d. Vote: Can upvote or downvote other posts
- e. Moderator
 - i. Delete any post on the community'
 - ii. Ban users in community
 - iii. View logs
- f. Access Control:
 - i. Modify user roles and permissions
 - ii. Manage access levels for different users or role
 - iii. Make edits to community name, description, profile pic, and banner
 - iv. Add restrictions and guidelines

FR 6.5 Default Roles

Permissions listed in (FR 6.4)

- a. Administrator
 - i. Default
 - ii. Moderator
- b. Access Control
 - i. Moderator
 - ii. Default
 - iii. Moderator
- c. Default
 - i. Read/View
 - ii. Write/Edit/Delete
 - iii. Comment
 - iv. Vote

FR 7. Content Moderation

FR 7.1 Reporting

- a. Report Mechanism: When seeing content that is offensive, a user should be able to click a report button on a post that is sent for review to moderators.

FR 7.2 Blocking

- a. Blocking Users: Accounts should also have a feature that allows them from seeing another user after pressing a button. The button can be found on the other person's profile

FR 7.3 Content Removal

- a. Removal Process: When a user has been reported and the report proves justified, the system should be able to effectively remove all previous content from the reported user's profile which includes replies and posts.

FR 8. Search and Discovery

FR 8.1 Search Functionality

- a. There will be a search bar at the top of the home feed view in which the user can search for accounts or communities. If the user inputs a substring of the full name of an account or community, the search view should still display the name as a search choice
- b. Searching Accounts
 - i. Based on name of a user that fulfills matching requirements based on what was typed in
- c. Searching for Communities
 - i. Based on name that matches which was inputted into the search bar
- d. Recommendations
 - i. Recommended Friends: People that have similar followers may be recommended to each other
 - ii. Recommended Communities: Communities that the user may follow will be recommended similar communities

4. Nonfunctional Requirements

NFR 1. Performance

NFR 1.1 Accessible Rich Internet Application (ARIA)

- a. Ensure that HTML elements have proper ARIA attribute for screen readers

NFR 1.2 The app should have reasonable performance and loading times

NFR 2. Usability

NFR 2.1 Consistent user interface, fonts, colors, format across all views

NFR 3. Reliability

NFR 3.1 Security Requirements that allow for safe keeping of user details

5. External Interface Requirements

- a. User Interfaces: The app has a UI that works on desktop platforms
- b. Hardware Interfaces
 - i. Requires the user to access this web application through a browser
 - ii. The system should be deployable on cloud infrastructure like AWS

6. Risks and Assumptions

- a. Risk of security breaches should be mitigated by using proper security by providing correct User access and levels
- b. Security Risks
 - i. Data Breaches: Unauthorized access to user data from vulnerabilities or hacking
 - ii. Privacy Violations: Inadequate protection of personal information can lead to misuse or leaks
 - iii. Malware and Phishing: Risks from malicious attempts to deceive users into exposing personal information
- c. Compliance Risks
 - i. Content Moderation: Inadequate moderation might result in the spread of harmful or illegal content
- d. Operational Risks
 - i. System Downtime: Technical issues may affect app availability and user experience
 - ii. Scalability Issues: Difficulty in handling a large load of users may impact stability and performance
- e. User Engagement Risks
 - i. User Retention: Challenges in keeping user engagement
 - ii. Negative Feedback: Negative feedback may damage app reputation
- f. Technical Risks
 - i. Bugs and Glitches: App may have bugs or glitches that affect user experience
 - ii. Integration Issues: Problems integrating with third party services

7. Assumptions

- a. Compliance and Regulation
 - i. Regulatory Changes: Assumes existing regulations will remain stable or the app can adapt to new regulatory requirements
 - ii. Global Compliance: Assumes that app will comply with data protection and privacy laws
- b. User Base
 - i. User Adoption: Assumes a level of interest from users based on trends
- c. User Behavior
 - i. Engagement Patterns: Assumes patterns of user engagement and content interaction based on user research
 - ii. Feedback: Assumes user feedback will be used for improvement
- d. Content Management
 - i. Moderation Tools: Assumes availability and effectiveness of content moderation tools to manage content
 - ii. Community Standards: Assumes user will adhere to community standards and guidelines

