Code Buddies

IDEA:

Code buddies - a platform where you can connect with your friends and write and review code in real-time, while also being able to interact through chat, voice call, or drawing out your ideas to each other. The application facilitates building cool apps together and bonding better through the following features: creating and joining coding sessions along with your buddies, a complete and intuitive buddies list, history of past sessions, statistics, theme personalization, communication tools such as drawing boards, chats, code reviews, notifications, and voice calls.

REQUIREMENTS:
- The application can be broken up into two main parts:
  - Main Screen
  - Session Screen

- When the application starts the user is greeted on the Main Screen.

Main Screen contains the following:

- Buddies List:
  - Each item of this list represents a friend of the user from his messenger friends list, each friend is also noted as a 'buddy' inside the app. For each buddy his messenger profile picture and his name are shown.
  - A user can interact with a buddy from this list and can pin him to the top of the list or send an invite to an existing session that he is the admin of.

- ○ A user can search buddies in the list. A buddy name will match the searched text if the searched text is a substring of the buddy name.
- Sessions List:
  - ○ Each item of this list represents a session, and contains the following information about a session: session name, the name of the admin of the session, date of creation and the date of the most recent contribution to the session.
  - ○ For each session in the list, the user can do two actions:
    - ■ Join the session - redirects the user to the Session Screen which will contain all the information specific to the selected session
    - ■ Leave/delete the session - depending on what role the user has in the selected session this functionality changes meaning:
      - If the user is a member of the selected session, he is simply removed from the list of members of the session and the session will no longer be showed in his Sessions List
      - If the user is an admin, he can choose to do the following:
        - ○ Deleting the whole session which will erase all the chats, code reviews, files of the session and will kick all the members out of the session including the admin.
        - ○ Transferring ownership to a member, which will kick the current admin, promote a random member to the role of admin and the session data remains intact. (we are all friends, no differences are made 🙂)

If there are no other members to transfer the ownership to, the session will be deleted with all its data.

- A user can search sessions in the list, a session name will match the searched text if the searched text is a substring of the session name.

● Notification Tray:
- There are two types of notifications that you can receive:
  ■ You can receive an invite to a session and you have two options: Accept or Decline invitation. Accepting the invitation adds the buddy to the list of members of the session and the new session will appear under the user's List of Sessions. Upon accepting the invitation, the admin is informed through an information notification and an information notification will also be sent to the user if the invite operation was successful or not. Declining the invitation sends an information notification to both the admin and the user saying that the user declined the invitation.
  ■ You can receive an information notification, which contains status updates about your invites: successfully sending an invite to a buddy, the buddy declined/accepted the invite. This type of notification can also be marked as read, which will make it disappear from the notification area.
- If the maximum number of buddies in a session is reached and a new buddy tries to enter the session through the notification invite, they will receive an information notification that the session is full.

● Additional actions:
- Create a new session

- - The user can create a new session which will require him to complete a form asking for the session name and the maximum number of buddies allowed into the session (no more than 5).
    - After completing the form, the session is created: creates a new work environment with all the code contribution and communication tools, the user is automatically assigned as the admin.
  - Customise theme
    - The user can choose a new theme for the background of the application, and he can also change the font and the colour of the text for the text editor.

Session Screen contains the following:

- A session is defined as a special room that provides tools for code contribution and communication for a collection of users. The creator of the session has a special role called 'admin' and the rest are members.
  - A member can use all the tools of code contribution and communication to do the following actions: adding/removing/editing lines of code or files, chatting, joining audio calls, submitting/solving code reviews, drawing board, see session contribution statistics
  - An admin can do whatever a member can do with the addition of being able to invite users or kick members from his session.
- A session provides the following tools for code contribution and communication:
  - Active/inactive members list: a list containing as each item the picture of a buddy that is a member of the session and that buddy's name. Additionally it displays whether the member is currently active, meaning the member is currently online and is in the session screen of this session.

Inactive members are marked as inactive. Inactive members are offline members or members that are not in the session screen of this particular session (they could be in any other session screen).

- ○ Project file hierarchy
    - ■ Each session generates a directory which is the root of the session's project. All files and folders added by the members are under the session's project root.
- ○ File Explorer
    - ■ Shows the hierarchy of directories and files from the session's project root folder to all the members of the session.
    - ■ Files are shown synchronously between members, meaning if a member adds or removes a file, the File Explorer is updated accordingly to all the members currently participating in the session.
    - ■ A member can select a file to edit which will be opened in the Text Editor.
- ○ Text Editor
    - ■ A member can modify in real time the content of the file which will be displayed to all the other currently participating members of the session.
    - ■ The text editor can have multiple files opened. The files opened are displayed as tabs at the top of the editor. Each member has his tabs opened independently of all the other members.
    - ■ A member may also search in a file for a substring which all the strings containing the substring [separated by spaces will match.(CTRL + F)
- ○ Drawing board
    - ■ It is displayed as a tab in the Text Editor and is opened and closed from the Text Editor in the same manner that the files are handled.

- - - ■ A member can draw in it using a pencil tool or erase past drawings, each drawing is synchronous to all the other members, meaning whenever a member draws on the drawing table, the image will be updated to all members.
      - ■ A member can select the colour of the lines which he will draw with.
    - ○ Chat
      - ■ This communication tool allows members to send string messages no longer than 1024 characters to all other members as well as displaying past messages with metadata: who sent the message and the timestamp of the message.
    - ○ Audio call
      - ■ This communication tool allows members to join a common audio call, all members can see who is in the audio call.
      - ■ A member in an audio call can mute his microphone which will be shown to all other members through the active/inactive list accordingly.
    - ○ Code review
      - ■ A member can choose a range of lines from a file and write a review for those lines no longer than 1024 characters.
      - ■ Upon confirming the review, it will be posted in the reviews section where any member can see and add additional comments to the review and only the member that started the review can mark it as solved after communicating with all the members and after the problem is solved.
- ● Additional actions:
  - ○ Contribution chart

- - Is a statistical chart that can be accessed by every member of the session and displays in a chart format the contributions of each member for each month since the creation of the session. Contributions count as: adding/removing/editing lines or files, submitting/solving code reviews.
  - See code review section
    - This section shows a feed of the history of reviews and currently pending reviews. Each member can access this section and comment on any opened review, but only the original poster of the review may close the review. A closed review can no longer receive any comments.
  - Create new file
    - A member may select the path from the root folder of the session and the name of the file to be created, upon confirming the action a new file in the session is created which will be displayed synchronously to all other members.
  - Open an existing file
    - A member may open the file explorer of his own computer and select a file or folder that he wants to open and add to the session project, the member will be asked for a path from the session's project root. The addition will be displayed synchronously to all other members.
  - Leave session
    - A member may leave the current session. This returns the user back to the main page, it does NOT kick the user from the session.
    - The user will be marked as inactive in the session that he just left, and will get him out of the voice call, if he was part of it.

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