MILESTONE 3

LingoMingo

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History Table

Milestones/Version	Date
M3 V1	04/23/2020
M2 V2	04/09/2020
M2 V1	03/26/2020
M1 V2	03/09/2020
M1 V1	03/05/2020

Table of Contents

1. Data Definitions V3

1. Unregistered User: These are users that have not registered an account yet. They will not have much privilege within our website. They will be able to see the created account page of LingoMingo only.

2. Registered User: A client or Premium client who is registered within the database with proper information and necessary documentations and has access to different functionality depending on their privilege within the application.
   a. Free: A registered user who has free access to all the site's features. They will see ads on their dashboard.
   b. Premium: A registered user who has access to all the sites features. Ads no longer are displayed on the registered user's UI.

3. Match: Users will have matches with other users. They will be matched based on language commonalities. Matches will be displayed in swiping format on a dashboard. Users can swipe right for matching with a matched user and left for unmatching with a user.

4. Chat: When a user has matched with another user they have the option to create a chat with that person
   a. Text: Text chat box where the users can converse to practice written language.
   b. Voice: Voice chat to practice spoken language without camera.
   c. Video chat: Both voice and video chat to practice spoken language.

5. Profile: This will be where Users talk about their interests and hobbies to let other users know a little bit more to get to know them. Parts of the profile can be private including age, location, and gender.

6. Post: People can post status comments or pictures on their account.

7. Language: In order to communicate with another user, the users need to know one language in common. We will set English as a common language.

8. Message: One user can send a voice or text message to the other user once they are friends.

9. Chat rooms: Page where users can interact with other users. Many users can be in one room.

10. Notifications: Display or notify the latest activities related to the LingoMingo.

11. Host: Registered users can create public or private chat rooms.

12. Support: A tab to solve the user's issues and answer their queries.

13. Report:
    a. User: User writing a report to send to an admin about another user if any misconduct or policy violation happened during chat conversations or private messaging.
    b. Post: User writing a report to send to an admin about a post on another user's profile page that is inappropriate or violates policies.

2. Functional Requirements V3

Unregistered User

Priority 1:

1. Unregistered users shall be able to sign up to account

   1.1 Unregistered users shall enter a name.

   1.2 Unregistered users shall enter date of birth.

   1.3 Unregistered users shall enter a username.

   1.4 Unregistered users shall enter a password.

   1.5 Unregistered users shall confirm a password.

   1.6 Unregistered users shall enter an email.

   1.7 Unregistered users should enter a location.

Registered-User
Priority 1:

2. Registered users shall be able to log in to account.

   2.1 Registered users shall enter an email or an username.

   2.2 Registered users shall enter a password.

   2.3 Registered users shall be able to reset password, if forgotten.

3. Registered users shall be able to log out to account.

   3.1 Registered users have to be logged in before being able to log out.

5. Registered users shall be able to submit data.

   5.1 Registered users shall be able to submit images in the chat.

   5.2 Registered users shall be able to submit text in the chat.

   5.3 Registered users shall be able to make new posts.

   5.4 Registered users shall be able to edit posts.

   5.5 Registered users shall be able to delete posts.

   5.6 Registered users shall be able to post unlimited.

7. Registered users shall be able to delete the account.

   7.1 Register user's profile shall also be deleted.

   7.2 Register users shall be able to temporarily deactivate accounts.

   7.3 Register user shall be able to reactive account.

10. Registered users shall be able to make changes in setting.

    10.1 Registered users shall be able to delete their account from the settings.

    10.2 Registered users shall be able to set their notifications.

    10.3 Registered users shall be able to change their password.

14. Registered users shall be able to choose a primary language.

    14.1 Registered users shall choose from a list of available languages on LingoMingo.

    14.2 Registered users shall be able to change their primary language.

16. Registered users shall be able to choose a language to learn.

    16.1 Registered users shall be able to change the language they want to learn.

    16.2 Registered users shall choose from a list of available languages on LingoMingo.

18. Registered users shall be able to choose the skill level they're at.

    18.1 Registered users shall be able to change the skill level

    18.2 Skill level shall be scaled into different levels. Example: (Advance, Intermediate, Beginners, etc.)

20. Registered users shall be able to choose a language they want to teach.

    20.1 Registered users shall be able to update the language they want to teach

    20.2 Registered users must be fluent in the language to be able to teach.

26. Registered users shall be able to match with another registered user.

    26.1 Registered users shall match based on:primary language, language to learn, language they want to teach

    26.2 Registered users shall be able to unmatch with another registered user.

    26.3 Registered users shall be able to match with multiple registered users at once.

4. Registered users shall be able to access and edit a profile.

    4.1 Registered users shall enter a new name while editing.

    4.2 Registered users shall be able to choose a profile icon.

    4.3 Registered users shall be able to update profile icons.

    4.4 Registered users shall be able to update their country.

    4.5 Registered users shall be able to update profile posts.

68. Registered users shall be able to ask for the help.

    68.1 Registered users shall be able to ask help with the support team.

    68.2 Registered users shall be able to email support teams.

28. Registered users shall be able to add another user as a friend.

    28.1 Registered users shall be able to unfriend.

    28.2 Registered users shall be able to block a friend.

    28.3 Registered users shall be able to create a chat with a friend user.

    28.4 Registered users shall be able to add additional specifications to matching, such as dialect.

    28.5 Registered users shall be able to look at friends' profiles.

    28.6 Registered users shall be able to make comments on other friend's posts.

24. Registered users shall be able to write a bio

    24.1 Bio shall be displayed in user's profile

    24.2 Registered users shall be able to update their bio

    24.3 Registered users default bio shall be empty.

30. Registered users shall be able to choose icons for display

       30.1 Registered users' icon shall appear on their profile.

       30.2 Registered users shall be able change to a different icon.

40. Registered users shall be able to report an account.

32. Registered users shall be able to learn multiple languages.

       32.1 Registered users shall be able to learn more than one language.

       32.2 Registered users shall be able to teach language to others.

Priority 2:

56. Registered users shall be able to make the group chat.

       56.1 Registered users shall be able to add people in group chat.

       56.2 Registered users shall be able to make video chat in a group.

       56.3 Registered users shall be able to make voice chat in a group.

       56.4 Registered users shall be able to see all the activity in a group chat.

       56.5 Registered users shall be able to mute the chat.

       56.6 Registered users shall be able to remove people from group chat.

       56.7 Registered users shall be able to choose whom to chat with.

56.8 Registered users shall be able to decline the group chat request.

56.9 Registered users shall be able to turn on the notification in group chat.

66. Registered users shall be able to upgrade their account.

66.1 Registered users shall be able to upgrade their account to premium to skip the ads.

66.2 Registered users shall be able to stay in basic membership which comes with the ads.

Priority 3:

18. Registered users shall be able to change their skill levels.

18.1 Registered users shall be able to change their skill levels.

18.2 Registered users shall be able to set their skills level

42. Registered users shall be able to manage the match users.

42.1 Registered users shall be able to skip through the match.

42.2 Registered users shall be able to unmatch with the matched users.

42.3 Registered users shall be able to check if the matched user is a real or bot.

37. Registered users shall be able to rate.

37.1 Registered users shall be able to rate other users.

37.2 Registered users shall be able to rate the apps.

34. Registered users shall be able to choose the methods for communication

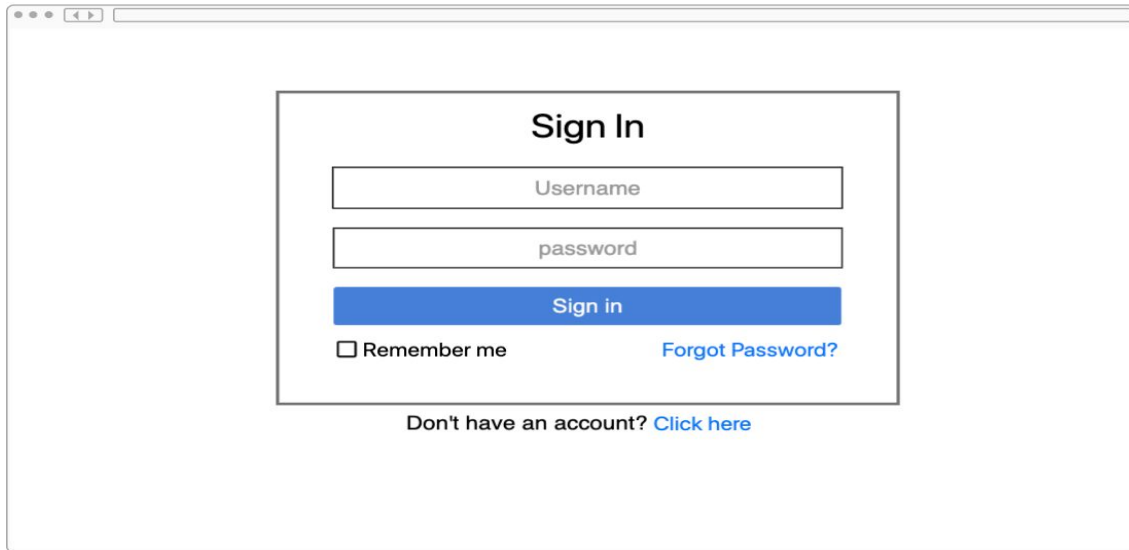34.1 Registered users shall be able to communicate via text.

34.2 Registered users should be able to communicate via voice.

34.3 Registered users should be able to communicate via video call

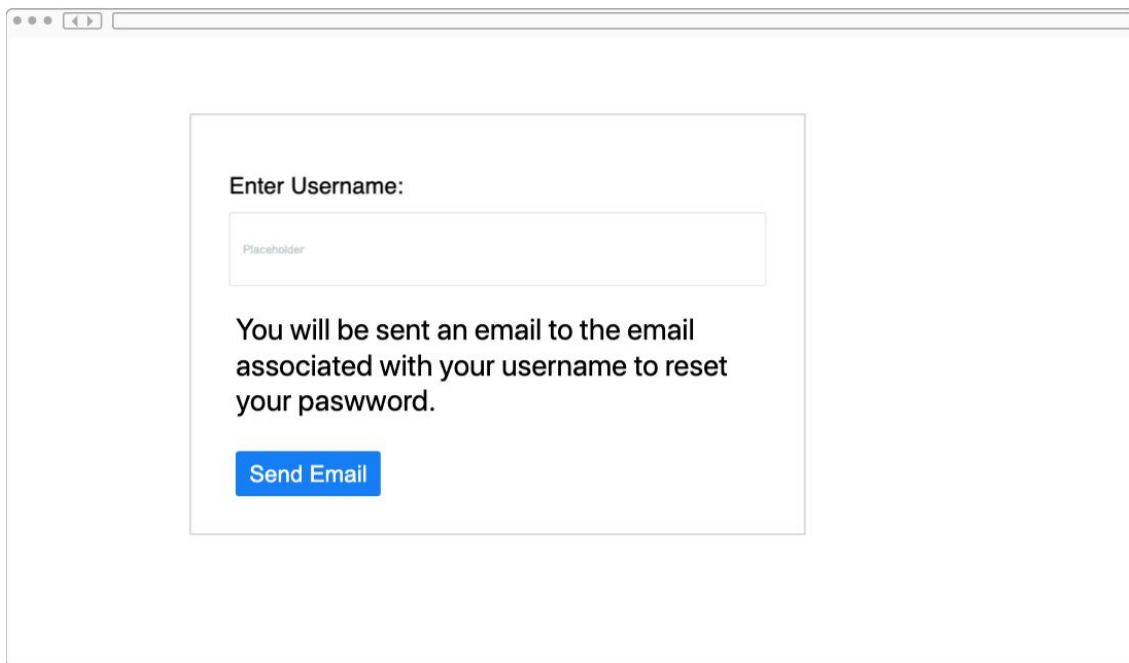# 3. Wireframes Based on your Mockups/Storyboards V2 (detailed)
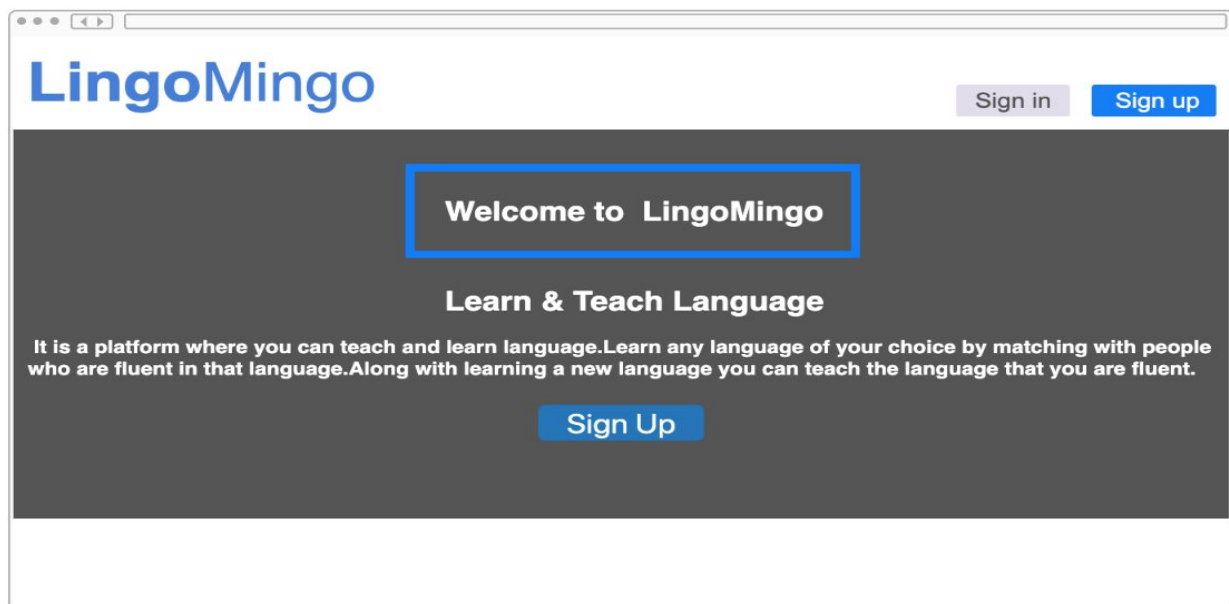
Welcome Page: This is the first page any user will see if they don't have an account, or are not logged into an account. They can either choose to sign in or sign up.

Sign In Page: This is what a user sees once they click on sign in from the welcome page. They write their username and password and proceed to our homepage. If they forgot their password they can click on the link which will take them to the following page. If they don't have an account, they have the option of signing up.

Forgotten Password: This is what they see when they forget their password. They enter their username/email which will send them a link to reset their password.

Register: This is what the user will see when they try to sign up for an account. They need a name, email and password or they have the option to sign in if they already possess an account.

Register: This is a continuous page of the registration page where they must choose the language of their choice that they would like to teach and learn. They also have the option to fix up their profiles with information about themselves.

Homepage: This is the homepage of our website. This is the page a user sees when they want to meet other users after they are already registered. They can either choose to match with them or click next to see the next person they can match with.
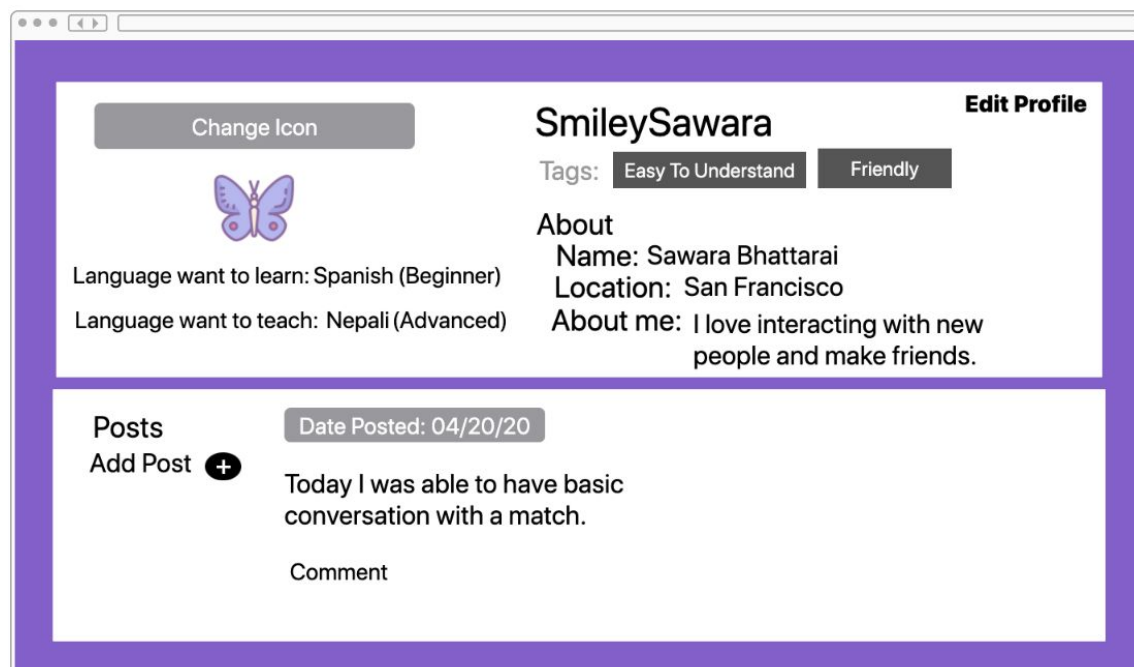
Profile: This is what a user's profile page will look like. They can add posts and change their icon as they please.
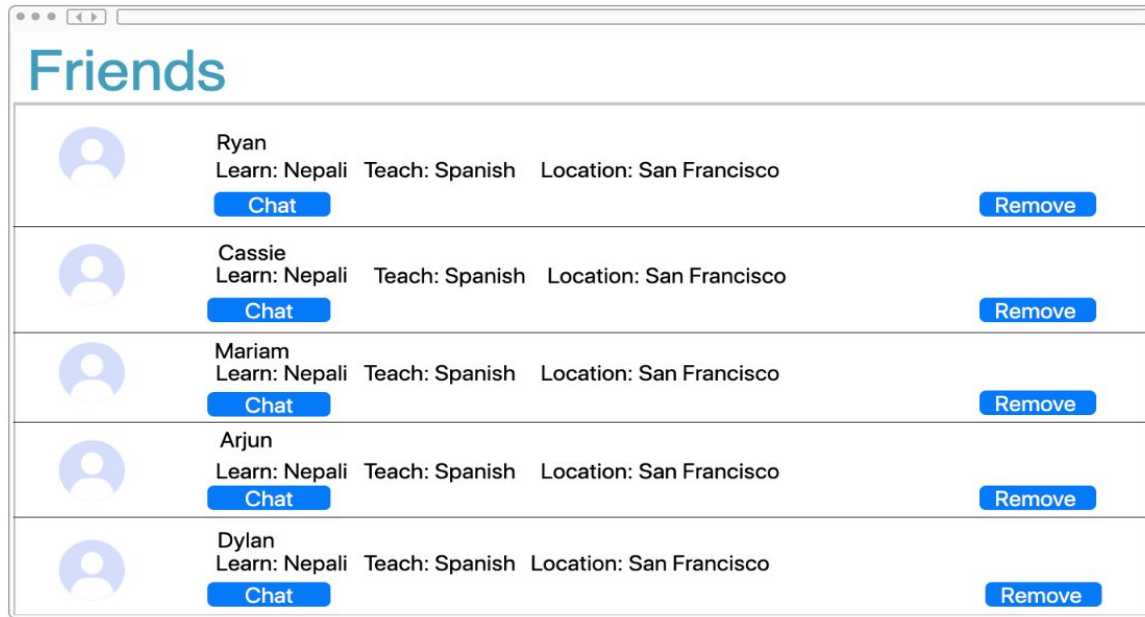
Friends: This page shows the friend list of a user. After getting a match, the user can add the other matched user as their friend and this page is to see all the friends. They can also click on the chat button to go to the message page to text their friend from this page whereas the remove button is for the user to remove the other users as their friend.
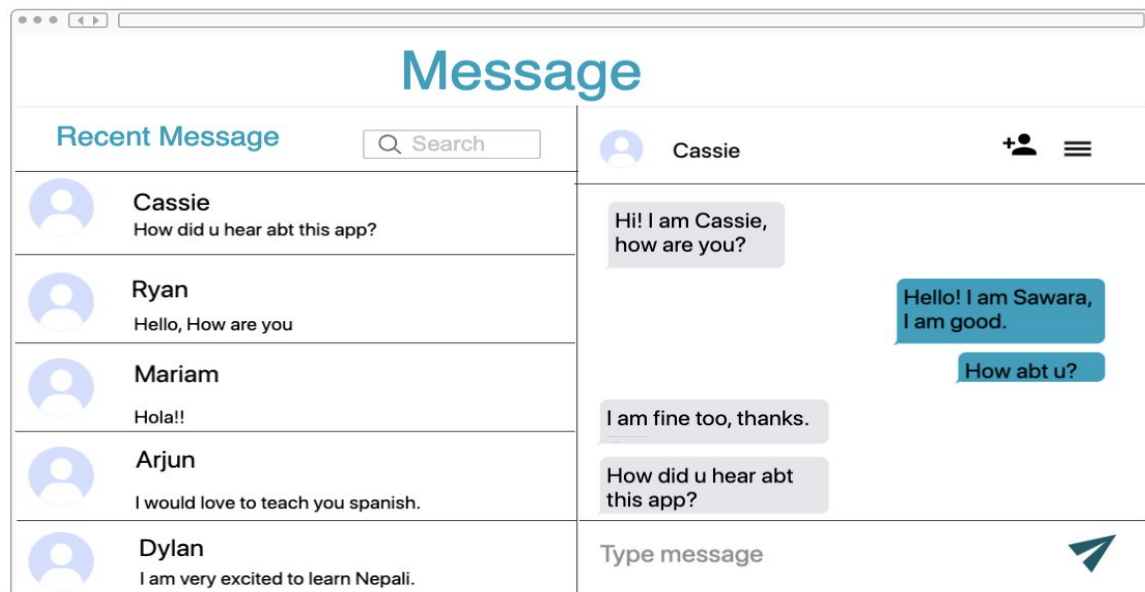
Messages: This page shows the messages. Once users are matched they can message each other to learn and teach the language. This page is for users to contact and learn or teach the language.
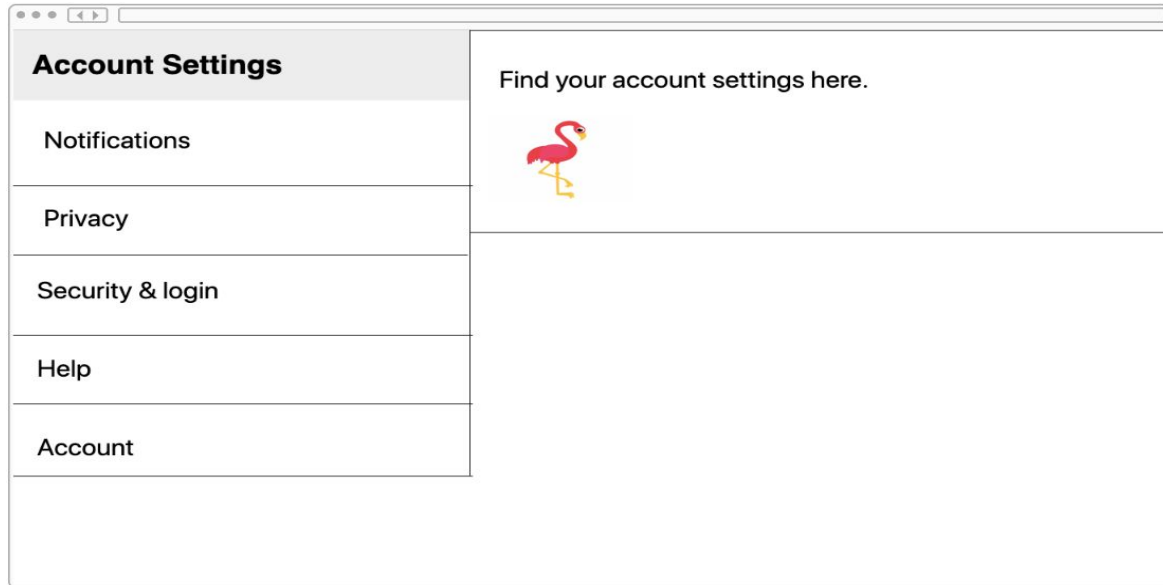
Settings: This is the setting page where users can make changes in their account. They can make changes like security of their page, privacy policy as well as if they need any help, users can contact the support team on this page using help.

4. High level database architecture and organization V2

Business Rules

1. An unregistered user can create multiple account
2. A registered user must be linked to only one account
3. Registered users can upgrade one account to premium
4. A registered user will match with multiple registered users based on similar languages
5. Registered users can create many chats with any of their matches
6. Profiles must choose at least one primary language
7. Profiles must choose at least one learning language
8. Regular accounts will display at least one advertisement
9. Accounts must have only one profile
10. Profiles can create multiple posts
11. Accounts can friend with multiple accounts

Description of Entities, Attributes and Relationships

Unregistered Users are users that haven't made an account on LingoMingo yet. Non-registered users wouldn't be able to utilize any of LingoMingo's features, besides the ability to sign up an account on LingoMingo and browse the homepages.

Entity: Unregistered User

Attributes: User_id

Relationship: Create (Account)

> Non-registered user and account: 1 to M
>
> Non-registered Users can make one account. Meanwhile an account is linked to one non-registered user. After an account is created, the non-registered user becomes a registered user.

Registered Users can use all the features LingoMingo has to offer: matching, messaging, voice calling, and video calling. Registered users can customize their profiles to express their individuality publicly or privately.

Entity: Registered User

Attributes: User_id: key, Account_id: key, Name: composite, Dob: multi-value, Age: derived, Primary Language, Learning language

Relationships: LinkedTo (Account), Make (Post), Choose (Primary Language)(Learning Language), Send (Chats)

Registered users and Account: 1 to 1

Registered users are linked to an account. If the register user deletes their account, both the user and account ids won't be reused.

Registered users and Primary Language: M to N

Register users can have one or multiple primary languages. By allowing registered users to select multiple primary languages, they would be able to teach multiple languages to other users and not be limited to having one primary language.

Registered users and Learning Language: M to N

Registered users can have one or multiple learning languages. Some registered users may want to learn multiple languages and would be able to select multiple languages.

Registered users and chats: M to N

Registered users can chat to multiple users simultaneously. Users aren't restricted to messaging one person at a time as it would be limiting for the user's experience.

Accounts are created by unregistered users which then become linked to a registered user. Every registered user would be assigned to an account that is unique to them. In other words, if the registered user decides to delete the account, the account id won't be reused. Also, there are two types of accounts: regular and premium. Regular accounts are free and provide almost all the features on LingoMingo has to offer besides the no ads feature.

Entity: Account

Attributes: Account_id: key, User_id: key, Email: key, Profile_id: key, Average rating, Type (Regular or Premium)

Relationship: IsA(Free/Premium), Has(Profile), Gain(Rating)

Account and Regular: 1 to 1, ISA relationship

An account can be a regular or premium account. Regular accounts are the default account type that is free and offers almost all of the LingoMingo's features besides the no-ad feature.

Account and Premium: 1 to 1, ISA relationship

An account can be a regular or premium account. Premium accounts are the upgraded account type that isn't free and offers all the features LingoMingo has to offer. Premium accounts won't have to watch advertisements every so often unlike regular accounts.

Account and profile:1 to 1

An account can only have one profile, as having multiple profiles wouldn't serve any purpose.

Account and rating: 1 to 1

An account has an averaged rating based on their past conversation. If the registered user was helpful, they would have a higher rating. Meanwhile users that are inappropriate would either have very low ratings or be reported. Each account has one average rating, which is why it's one to one relationship.

Profiles are created upon finishing the sign up process. In a profile, registered users are able to express themselves through posts, bios, languages that they know and languages that they want to learn.

Entity: Profile

Attributes: Profile_id: key, Account_id: key, Posts

Relationships: Have(Account), Have(Post)

Profile to Account: 1 to 1

Each profile is unique to an account. No profile id would be reused for another account.

Profile to Posts: 1 to M

Each profile can have none to many posts depending on the user's preference. Posts are created by one registered user and would remain at the registered user's profile.

Chats are created from the matching system, where two registered users match and start talking to one another. Chats, for now, remains as only messaging but we may add more entities for the video and voice feature. Registered users can chat with multiple people simultaneously.

Entity: Chat

Attributes: Chat_id:key, User_id:key, Learning Language

Relationships: Send(Registered User), MadeBy(Match)

Chat to Registered user: M to N

Chats are created from the matching system between two registered users. Or the chat can be created from a friends list, if we manage to implement the friend system.

Posts are made by users and appear on the user's profile. Registered users can post profile statuses to express themselves publicly or to their friends. Posts are posted in the registered user's profile, which can be reported if the post is inappropriate.

Entity: Post

Attributes: Profile_id:key, Post_id:key

Relationships: Have(Profile), Made(Profile)

Profile to Post: 1 to M

Registered users can have multiple posts on their profile if they choose to post. Posting is optional and can be public or private. Posts are created by one profile, as each profile is responsible for their own posts.

Friends are where users are allowed to add one another user after matching. Friends are able to chat with each other anytime.

Entity: Account

Attributes: Friend_id:key, Account_id:key, Status

Relationships: Recursive(Account)

Account to Account: Recursive Relationship

Accounts can friend with another account. If accounts are friend with one another, they can message with each other anytime, visit each other's profile even if they are set to private.

Advertisements appear only for regular accounts. LingoMingo allows other companies to advertise their products on LingoMingo. Advertisements appear only for regular accounts. Premium accounts won't have any advertisements when they chat with another registered user. Advertisements will appear periodically throughout the use of LingoMingo
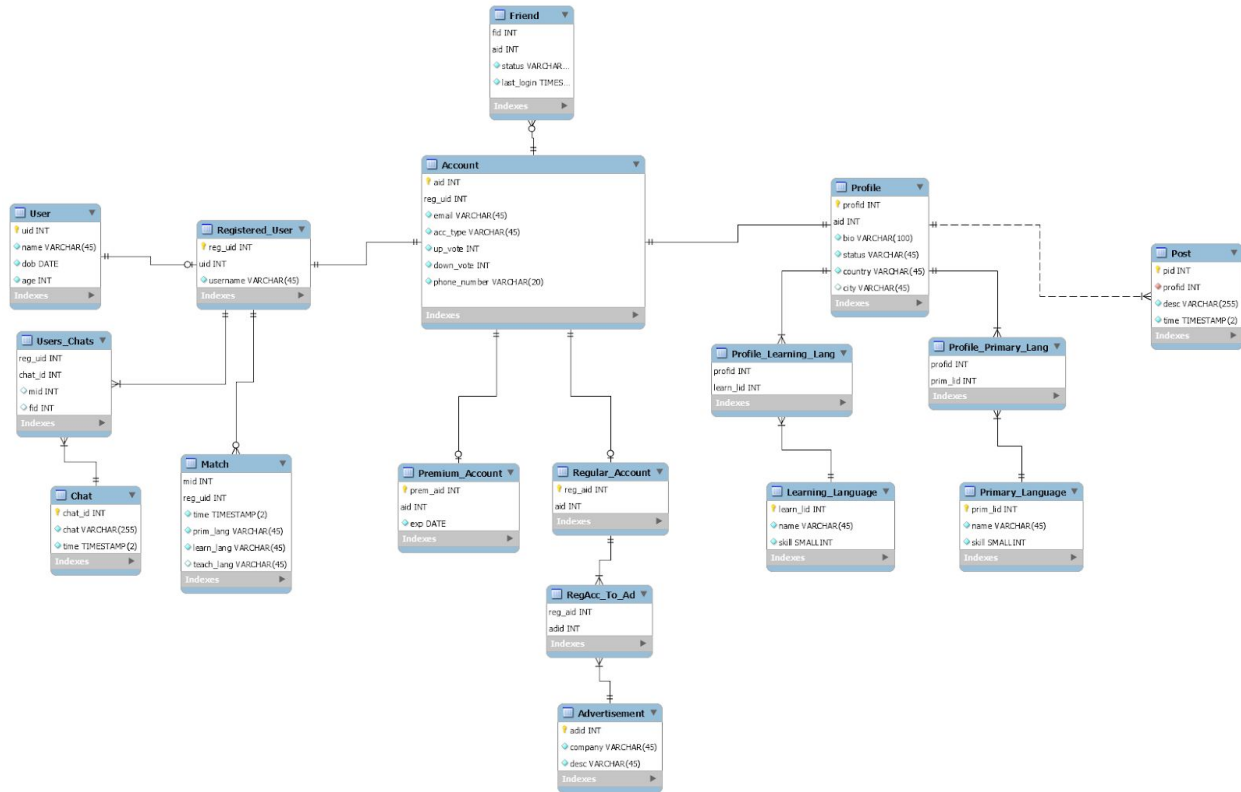
Entity: Advertisement

Attributes: Ad_id: key, Company_name: composite

Relationships: Have(Account)

       Advertisement to regular account: M to N

       Advertisements can be seen by many regular accounts, while each regular account can see many advertisements.

Database Model

Friend
- fid INT
- aid INT
- status VARCHAR...
- last_login TIMES...
- Indexes

Account
- aid INT
- reg_uid INT
- email VARCHAR(45)
- acc_type VARCHAR(45)
- up_vote INT
- down_vote INT
- phone_number VARCHAR(20)
- Indexes

User
- uid INT
- name VARCHAR(45)
- dob DATE
- age INT
- Indexes

Registered_User
- reg_uid INT
- uid INT
- username VARCHAR(45)
- Indexes

Profile
- profid INT
- aid INT
- bio VARCHAR(100)
- status VARCHAR(45)
- country VARCHAR(45)
- city VARCHAR(45)
- Indexes

Post
- pid INT
- profid INT
- desc VARCHAR(255)
- time TIMESTAMP(2)
- Indexes

Users_Chats
- reg_uid INT
- chat_id INT
- mid INT
- fid INT
- Indexes

Profile_Learning_Lang
- profid INT
- learn_lid INT
- Indexes

Profile_Primary_Lang
- profid INT
- prim_lid INT
- Indexes

Chat
- chat_id INT
- chat VARCHAR(255)
- time TIMESTAMP(2)
- Indexes

Match
- mid INT
- reg_uid INT
- time TIMESTAMP(2)
- prim_lang VARCHAR(45)
- learn_lang VARCHAR(45)
- teach_lang VARCHAR(45)
- Indexes

Premium_Account
- prem_aid INT
- aid INT
- exp DATE
- Indexes

Regular_Account
- reg_aid INT
- aid INT
- Indexes

Learning_Language
- learn_lid INT
- name VARCHAR(45)
- skill SMALLINT
- Indexes

Primary_Language
- prim_lid INT
- name VARCHAR(45)
- skill SMALLINT
- Indexes

RegAcc_To_Ad
- reg_aid INT
- adid INT
- Indexes

Advertisement
- adid INT
- company VARCHAR(45)
- desc VARCHAR(45)
- Indexes

- Media storage: Decide if images and video/audio will be kept in file systems or in DB BLOBs (decision on file vs. BLOBs must be made by the end of M2). Describe any other special data format requirements like for video/audio/GPS etc.

All media files will be stored on the server. The database will store the file path, where the media file is located. For now, we don't have any special data format requirements yet. If we do, we'll include it.
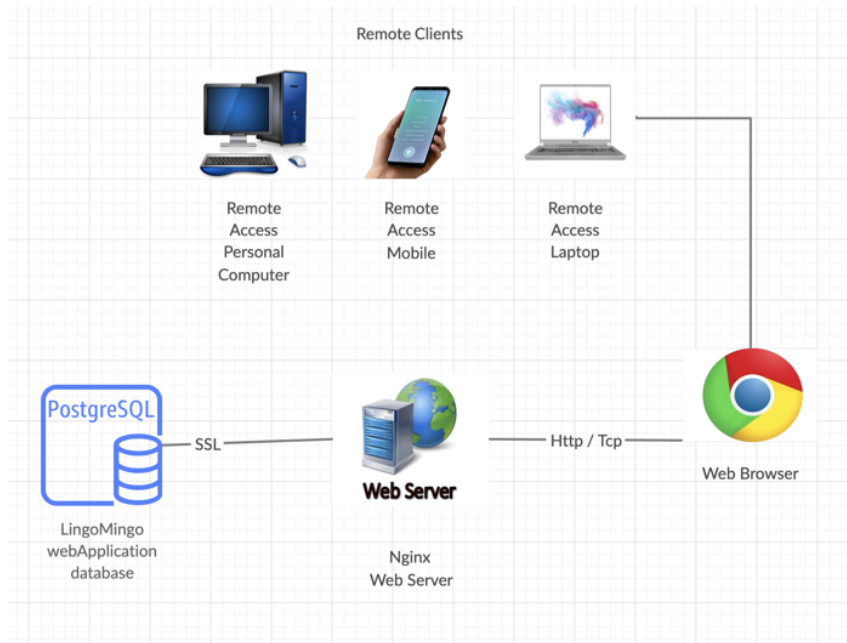
For example, when a user visits a person's profile. The person's profile picture will be obtained through the file path that's provided by the database.
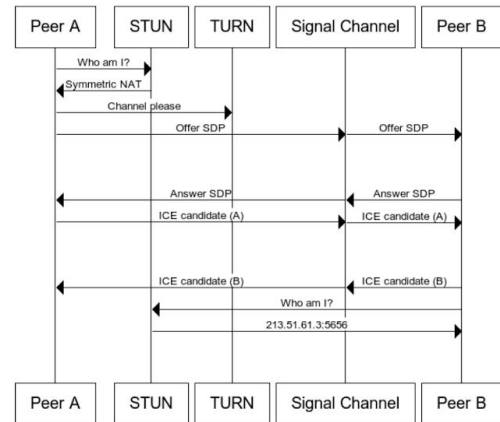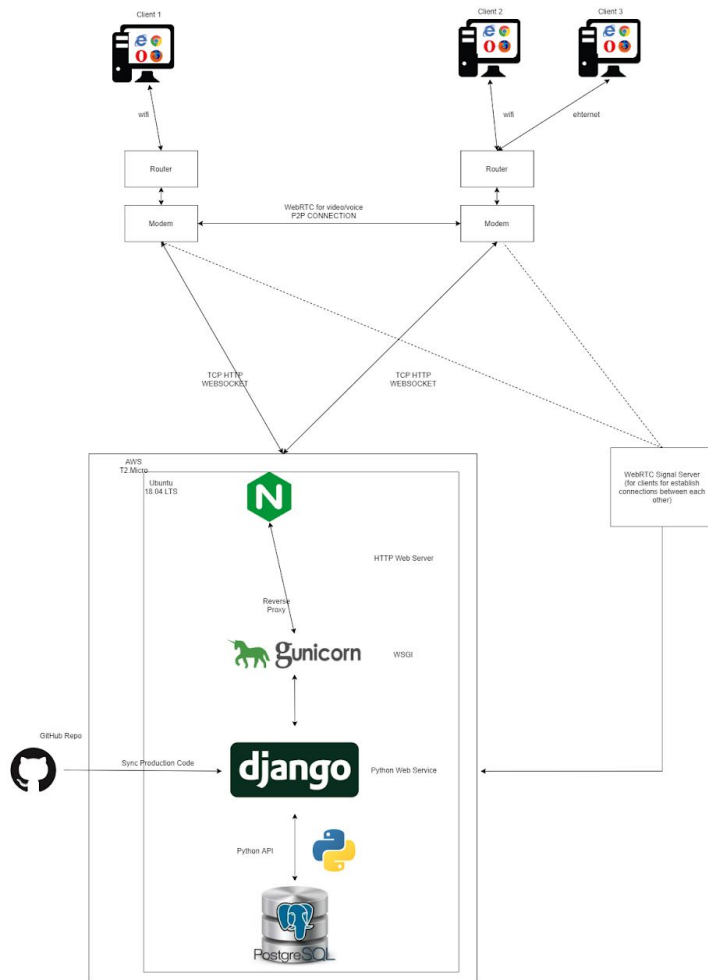
- Search/filter architecture and implementation: what will be the alg/SW for search; how will you organize search items from the user; what DB terms will be searched, how it will be coded and organized in the DB (check instructors' suggestions in the class. OK to use SQL and %like).

Our most used search function would likely be the matching process. User are getting match suggested to them on a daily basis. We plan to implement the search function inside Django since the framework has very powerful database management built in. For retrieving users, we can use User.objects.all() and make them filterable by doing Users.objects.filter(field=query). We can encapsulate these functions into one of the API for convenience and security. For example if we want to match a user who knows english and wants to learn german, the match api will filter the user query with primary_lang=german and combine that with learning_lang=english. So that the user gets matches that share at least one commonly known language.

5. High Level Diagrams V2 (detailed)

Application Network Diagram

Deployment Diagram