Team 02 SW Engineering CSC648 Spring 2020 Date: 03/05/2020

MILESTONE 1

LingoMingo

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History Table

Milestones/Version	Date
M1 V1	03/05/2020

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Executive Summary

The purpose of this website is to bring the cultural aspect of dialect to people who want to be fluent in more than one language. Today, being multilingual is essential for communication because of the diverse society we live in, but learning a language has become very dehumanized because of the lack of real conversations with people in their native tongue. This is the missing component we are trying to acknowledge and correct.

With LingoMingo, we've decided to bridge the gap between culture and language learning by creating a platform where users can communicate and help each other become more articulate. Many other platforms are solely applications on smartphones, but we are available to anyone who can access an internet browser.

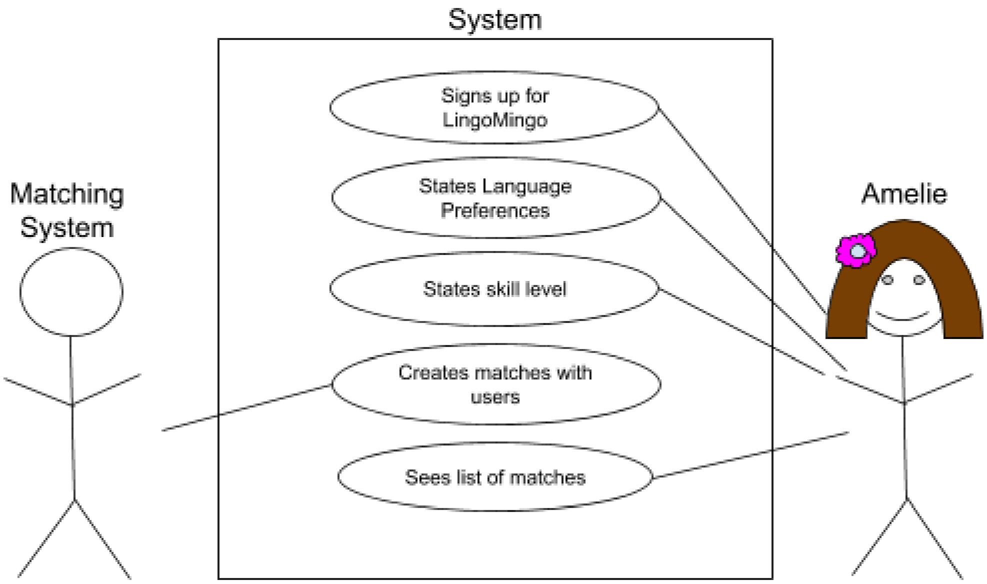
LingoMingo will allow users to interact with other users based on the language they want to learn. We focus on the user experience by giving them the full benefits of communicating with people in all parts of the world. We will provide flexible forms of communication and meeting new people by allowing users to communicate via text, voice, and video. Since we will be a free platform, there won't be any commitments to using LingoMingo. We prioritize the user's experience, so users can share their experiences through rating, posting and reporting.

Welcome to LingoMingo.

Use Cases

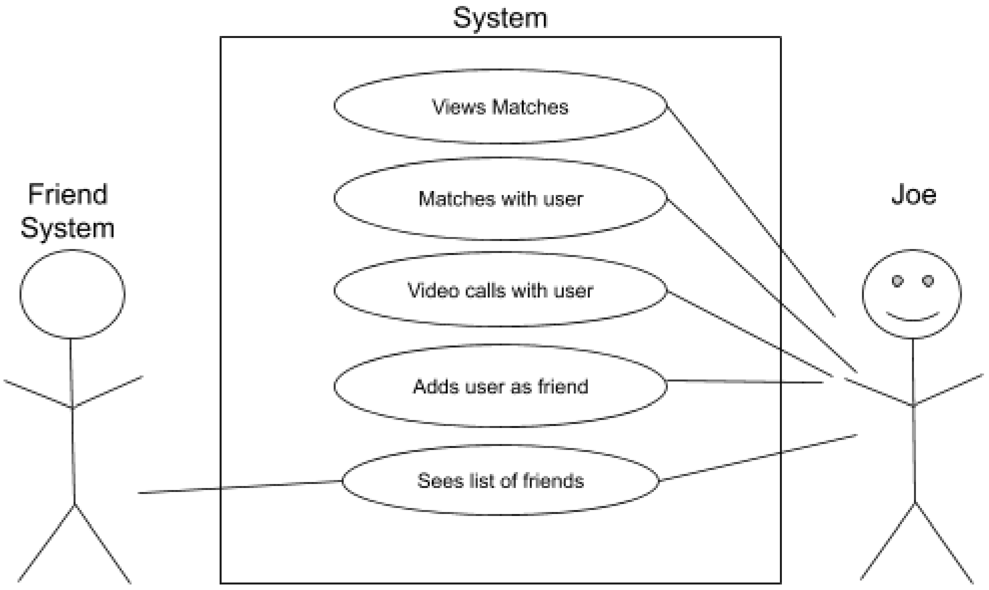
First Match

Amelie: 24, German National, Fluent in German, mid level English speaker, wants to learn English for her upcoming trip in the states. She found out about the website through one of her friends. She went to the site and signed up for it. During the **signup process** she stated her language preference and skill level. Once completed, she went on and got her first **match** with Otto from Australia. She **chose to connect** with Otto because they had **similar interests** according to his bio. She started a **conversation session**, where she was able to **text chat** and **video chat** with her new friend. They **talked in English** for a little to practice her English, then they **switched the conversation to German**, which Otto was not very fluent in. They had a great conversation, when they ended the session they gave each other a **5 star review**, so that the system will be more likely to **match them together again** in the future.



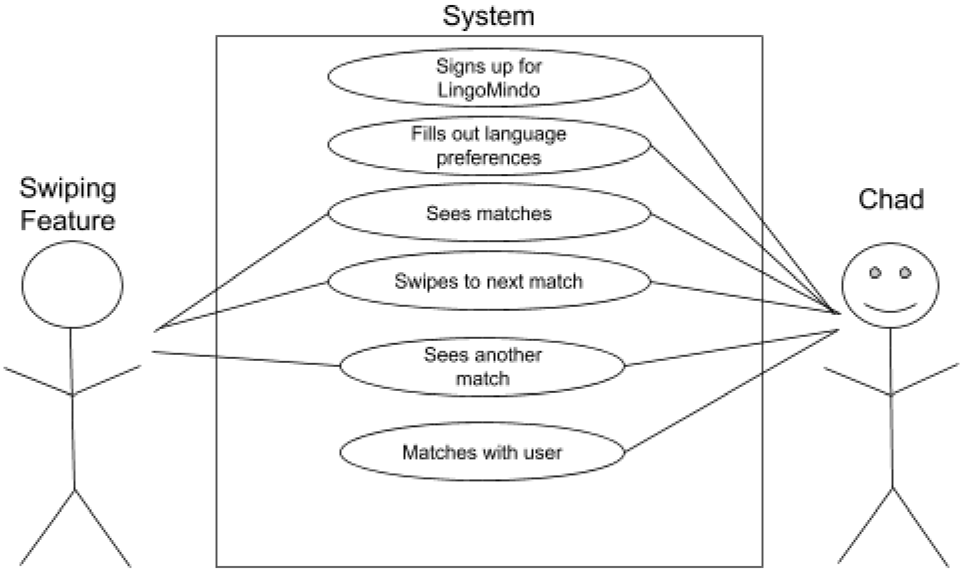
Making First Friend

Joe: 23, Avid language learner, Fluent in German, English and Spanish, but wants to meet new people, and he's willing to teach others. After some searching on the internet, he wants an app that is free and **low commitment**. He **signed up** with ease and started using the **matching system**. He included his hobbies tags on his profile's bio. He chose a random language to learn and chose the three languages he's fluent in. He matched with John who was fluent in English and wants to learn German. They both used **texting** to interact, but as they got to know each other, they ended up doing **video calling**. The video call was very pleasant, Joe taught basic German to him. As they were about to end the call, Joe **added John as a friend**, so they can **message each other whenever.** After Joe used Lingomingo for months, he got busy and forgot about the website. Eventually he stopped using it altogether and decided to **delete** his Lingomingo **account**.



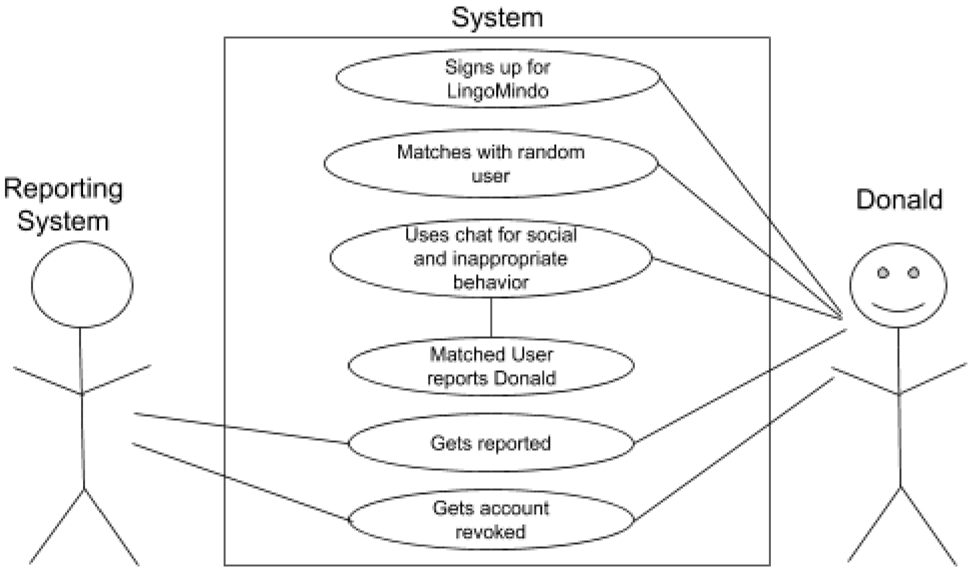
Inexperienced High School Student

Chad: 16, American High Schooler, failing Spanish class, needs to learn Spanish so he can graduate high school. He was trying to get help online so he started looking for a website to learn spanish. While searching for a website he found a really cool website named Lingomingo which was **free** of charge. Chad went through a **registration process** where he had to specify the **language** he wants to **learn** and the language he can **teach**, the **area/location** he is trying to find the people he wants to learn spanish. He also had to fill out his **skill label** for the language he wants to learn and teach to find a perfect match for him. Once Chad signed up on the website, he could see a person's profile with an **icon** and their skill level. According to his preference, he could **click to match** with the person or go to the **next profile**. In this way, he could match and start chatting, video calling and if both agree they could meet and learn when they are in the same location because when choosing location he could do specific area or global.



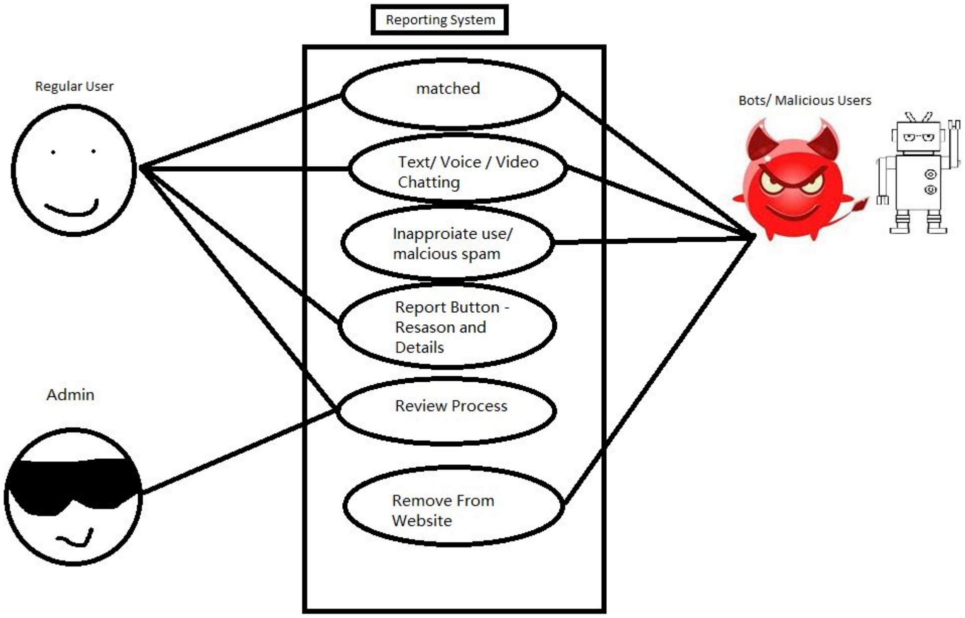
Inappropriate Usage of Account

Donald: 65, Desperate lonely old man, literally only here to stalk people on webcam chats (oh no), knows English and is **not willing to learn** any language **or teach**, he signed up for the website **just to chat** with others, He got into a session with Ann who is trying to learn English. Donald **didn't put in any effort** into teaching nor communicating and created a **hostile environment** for Ann. After the session ended, Ann **rated** Donald 1 star and **reported him**. Upon review by lingomingo staff, Donald was **banned** from the service.



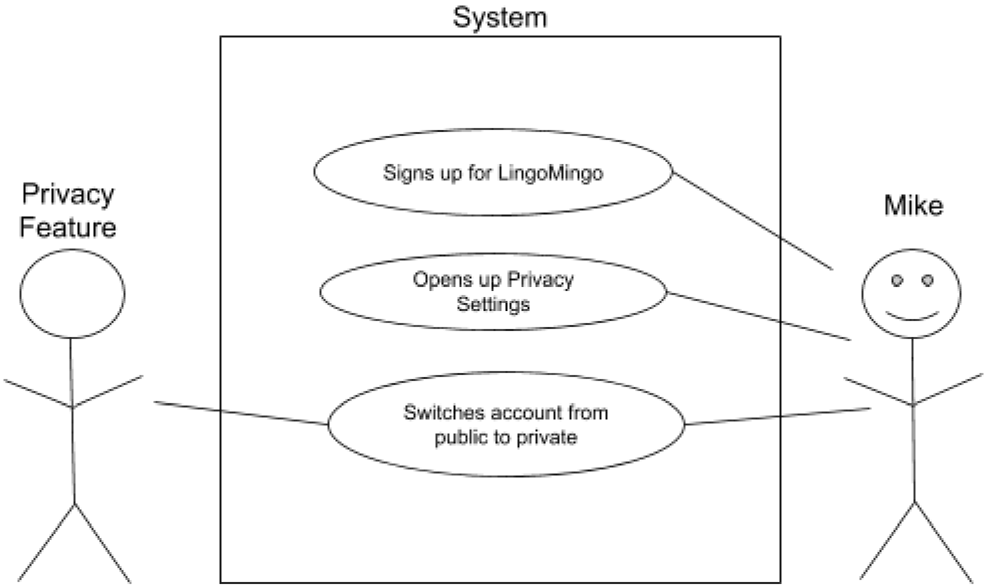
Reporting For Bots

Alexander: 18, Foreign exchange student who is fluent in Spanish. He is originally from Spain, but decided to do a semester abroad in Paris. Alexander wants a platform to do **voice-chat**, since he doesn't have a webcam and he's not very good at typing. Ideally the platform will be **available on the computer**, as he doesn't have a smartphone to use mobile apps. After he did some searching on the web, he found LingoMingo. At first, Alexander is skeptical of whether LingoMingo is like another Omegle with a bunch of **bots**. Thankfully, LingoMingo is normal and has real people to talk to. On the few occasions where Alexander does encounter a bot, he would check their profile to see if they are **posting any status, leaving likes or posts** in general. If the users seems inactive, he'd **report** the user as a **bot**, and include picture evidence.



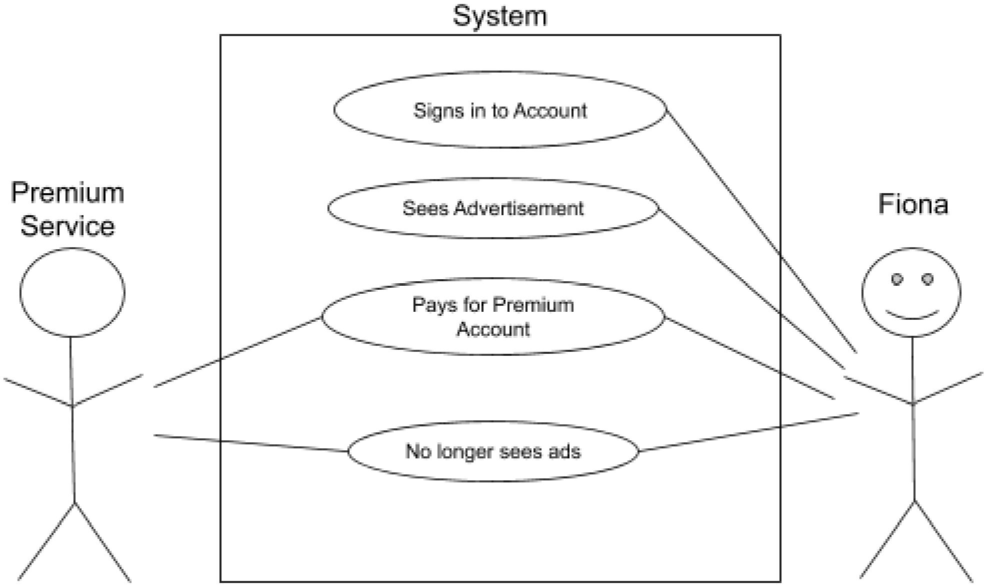
Privacy Middle Schooler

Mike: 12, A middle schooler, who knows English and Chinese but wants to learn another **dialect** in Chinese. He knows how to speak **Mandarin** but **wants to learn Cantonese** to watch his Cantonese dramas. He hears from a friend in class that LingoMingo is a cool language learning site. He signs up and starts matching with other people. He **set a specification that adds dialect** to the matching specification. He manages to find people that know Chinese in Cantonese dialect. He enjoyed his experience as he was able to learn Cantonese. Mike's parents required that he make his profile private so other users can't see personal information. He made his account private in **privacy settings**. He does hope that LingoMingo might add a **group chat** in the near future but for now he is satisfied with what LingoMingo has to offer.


System
Privacy Feature
Signs up for LingoMingo
Opens up Privacy Settings
Switches account from public to private
Mike

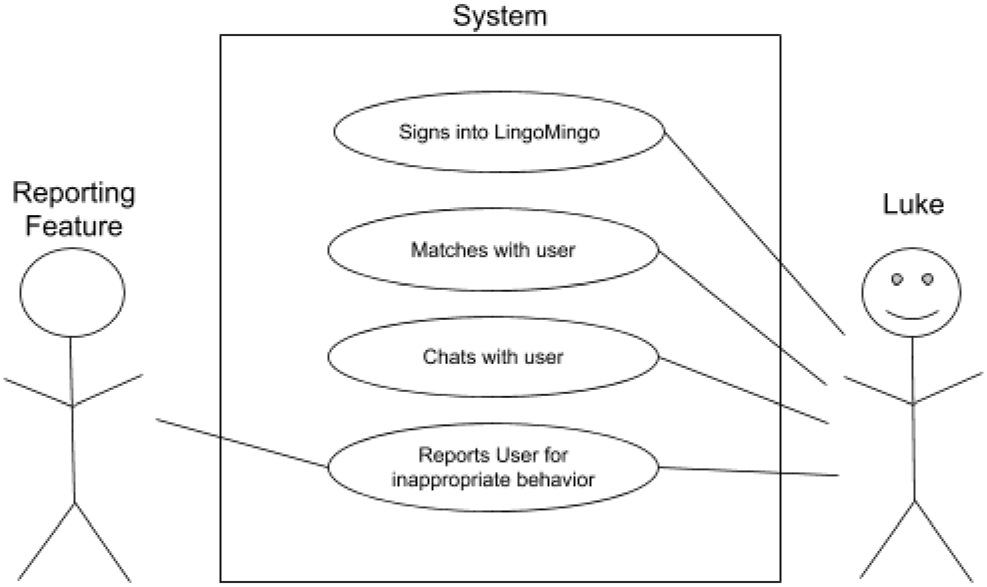
Premium Account

Fiona: 28, A working social worker, who knows English, Spanish, Italian and wants to learn Japanese. She wants to learn Japanese, since she wants to move to Japan one day and she heard from her coworker about LingoMingo. She used LingoMingo for the first time and fell in love with it. Since she has extra money and uses the website often, she didn't mind paying for a **premium account**. She no longer sees any **ads** whenever she uses the website. She's glad that it was **affordable** and was a **one time purchase**.



Unsatisfied Customer

Luke: 50, A banker, who knows English, Russian but wants to learn Italian. Luke wants to learn Italian whenever he's away from work, so he found LingoMingo. He used LingoMingo for a couple of days and didn't like it because he met some who were participating in inappropriate behavior. He viewed the profiles who were **inappropriate, rude or mean** during chats. He made sure to **report them** whenever the people.



List of main data items and entities

1. Unregistered User

   These are users that have not registered an account yet. They will not have much privilege within our website
2. Account - Registered User / Premium

   We will have three types of accounts in total. A registered user is someone who registered themselves within our DB. They have a free account. A premium account is someone who paid to get special privileges.
3. Match

   Users will have matches with other users. They will be matched based on language commonalities.
4. Chat

   When a User has a match they have the option to create a chat with that person where they can text/voice/video chat.
5. Rate

   Users will be able to rate other users after they chat together. This will be used mostly to see if users are violating any rules and to see who is doing well
6. Profile

   This will be where Users talk about their interests and hobbies to let other people know a little bit more to get to know them
7. Post

   People can post comments or pictures on their account
8. 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.
9. Message

   One user can send a message to the other user once they are friends
10. Chat rooms

    Page where users can interact with other users. Many users can be in one room.
11. Notifications

    Display or notify the latest activities related to the LingoMingo.
12. Host

    Registered users can create public or private chat rooms.
13. Support

    A tab to solve the user’s issues and answer their queries.

Initial list of functional requirements

1. User shall be able to sign up and log in to account
    a. User can create an account using their email address and set a password through the website. Once they have an account they will be able to sign in and log out as needed.
2. User shall be able to edit any data after it is submitted
    a. If a user wants to make any changes to their account (e.g. password, icon, location, language), they will be able to do so in the settings.
3. User shall be able to delete or deactivate account
    a. If a user wants to delete their account, the option is available in settings as well as deactivating the account so they can come back.
4. User shall choose a primary Language
    a. User must choose the language they are fluent in or the language they want to teach.
5. User shall choose a language to learn and the skill level they're at
    a. User has the option to choose which language to learn and also the skill level (e.g. beginner, intermediate, advanced)
6. User shall choose the country they're from
    a. User chooses an area that they're located in for other users to see
7. User should write a bio
    a. A bio will tell other users what that person is interested in and what they're looking for
8. User shall be able to add user as a friend
    a. After matching with a user, they should be able to add the user as a friend
9. User shall be able to choose icons
    a. We will have a set of icons available for user to choose as a profile picture
10. User should be able to choose more than one language to learn
    a. User doesn't have to be focused on only one language, can be matched with users of multiple languages.
11. User shall be able to choose who to chat with
    a. User will have option of who to choose.
12. User shall be able to text
13. User shall be able to voice chat
14. User shall be able to video-call
15. User shall be able to rate conversation
16. User shall be able to delete a friend
17. User shall be able to report an account
18. User shall have a language in common to be matched
19. User shall be able to skip through matches
20. User shall be able to chat with added friends

21. User shall be able to see profile of other users
22. User shall be able to delete their account
23. User shall be checked if they’re a bot.
24. User shall be able to use LingoMingo on the browser
25. User shall be able to match with other users.
26. User shall be able to post statuses on their profile.
27. User shall be able to add another user as a friend.
28. User should be able to post pictures on their profile
29. User shall be able to like other people’s posts.
30. User should be able to make their profile private or public.
31. User should be able to add additional specifications to matching, such as dialect.
32. User should be able to make group chats.
33. User should be able to upgrade their account to premium account.
34. User should be able to view all the activities in the chat group.
35. User shall be able to add another user as a friend.

List of non-functional requirements

Security

1. Login shall be required to utilize website and learn a language
2. User's shall verify their emails when registering an account
3. User's shall be able to set a display name different than their email
4. User's emails shall not be displayed by default
5. Passwords shall be encrypted before storing in the database
6. Content uploaded by users shall be audited by the administrator
7. User's payment information shall be encrypted
8. This site shall not accept any third party cookies

Audit

1. New registrations shall be audited by the administrator
2. New registrations shall be approved by the administrator
3. Users shall not be able to login to administrator accounts

Performance

1. The site loading time shall be less than 4 seconds for all screens
2. Application shall be able to retrieve information from the database and react in a timely manner.
3. The site shall handle requests asynchronously following a REST format

Capacity

1. The total data storage for the site shall not exceed 80% of the server's capacity for this site
2. The website shall be capable of handling at least 50 users
3. The website shall be scalable, so that new features can be added easily

Reliability

1. Downtime for maintenance shall be less than 3 hours per month
2. Downtime for maintenance shall not affect the site's main functionality
3. In all cases, users shall be informed of downtime for maintenance, either via an announcement on the main page, or e-mail

Recovery

1. In case of a total site failure, the whole site shall be shut down for revision.
2. If the site is broken, the mean time to recovery shall not exceed one day.

3. User data is the most valuable aspect and priority will be placed on recovering such data in case of total failure.

Data Integrity

1. Database tables shall be backed up weekly
2. Administrator shall be able to execute a recovery if needed
3. Image sizes shall be restricted to at most 1 megabyte
4. Images shall be uploaded in jpg, jpeg, or png formats
5. Images will be saved on Amazon's s3 storage server
6. URLs to image will be stored on the database

Compatibility

1. The site shall be compatible with the last version of the Safari browser version 11.1.2
2. The site shall be compatible with the last version of the Firefox browser version 70
3. The site shall be compatible with the last version of the Chrome browser version 80
4. Third party applications shall not be able to modify any content that may affect the site compatibility
5. Content should be able to be ignored by most popular ad-block services.
6. The site shall be able to account for any other compatibility issues created as a result of browser updates in the future
7. The site should be compatible to escalate to new databases

Conformance with Coding Standards

1. Architecture and design standards shall meet all the requirements listed under the High-level system architecture and technologies used section of this document
2. Design pattern is to be strictly enforced with all aspects of the site.
3. Appropriate documentation must be created for all code that is individually written for future maintenance.
4. Production code shall not have any log or output to the console.
5. All errors must not halt the web application without appropriate error handling.
6. Only working code that meets all code standards shall be submitted to the main branch of the project repository
7. Code shall be thoroughly tested and debugged before being considered working code
8. All internal errors and exceptions encountered when writing or modifying code shall be stored in a log
9. Any error that can affect the site's functionality shall be reported to the user
10. Errors shall be handled in a way that does not affect site functionality
11. The whole production cycle of the site shall be finished at least one week before the delivery date

12. The site shall be tested and debugged as a whole product at least one week before the delivery date
13. The site shall not be launched without all priority one features finished and working
14. All major changes to the application shall be discussed by the team and communicated to the class CTO.

Look and Feel Standards

1. The application and it's layouts shall look professional
2. The site shall be simple, so that it is usable to a wide range of users, and all previously mentioned parties
3. Targeted users will be the main priority for ensuring usability and readability.
4. Elements on screen shall meet the compatibility standards of all supported browsers
5. Elements on screen shall meet the compatibility standards of all supported browsers on mobile devices
6. Elements on screen shall be aesthetically pleasing
7. The site shall be able to work correctly without mouse interaction
8. The site shall be able to work correctly without keyboard interaction
9. Elements in screen shall be resized automatically without user interaction when being loaded in all the different platforms supported by the site
10. Application's user interface shall make it easy for users to find what they are looking for.

Scalability

1. The CPU instance and storage capacity shall be updated to be able to handle a large amount of users if needed
2. It should be able to add extra resources and also keep the structure intact.
3. Individual users should be able to use the app efficiently and properly even when the number of users keeps increasing.

Web Site Policies

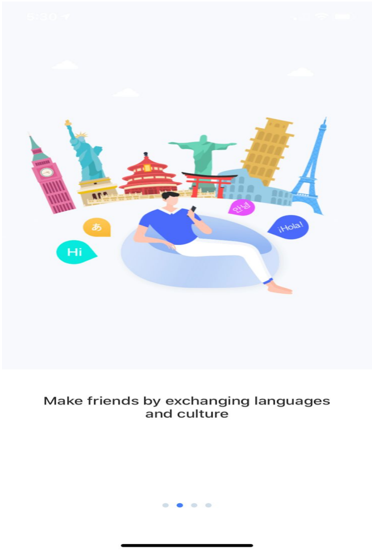
1. A link to the policies of this site shall be always visible in its settings page to be accessible by all the parties
2. The site will not store any payment information.
3. Users payment information shall be kept confidential and secure
4. The website shall allow users to register an account.
5. Email verification shall be implemented upon registration.
6. User's shall agree to the application's privacy policy before using the product.

Competitive analysis

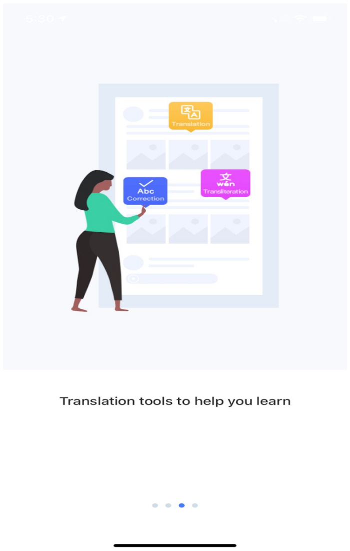
Competitive Apps

1. https://www.hellotalk.com/

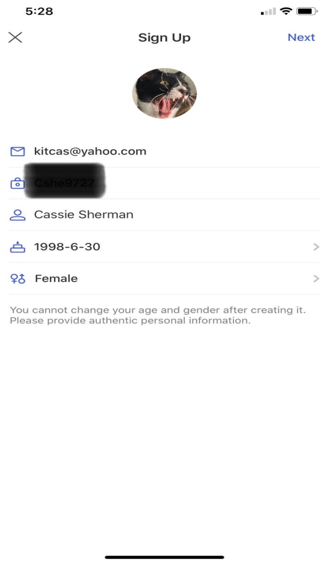
- Allows users to study vocabulary
- user can buy listening lessons
- Languages they provide: English, Japanese, Korean, Chinese, French, Spanish, Italian, Russian, Arabic, Portugese, German



Make friends by exchanging languages and culture



Translation tools to help you learn



kitcas@yahoo.com

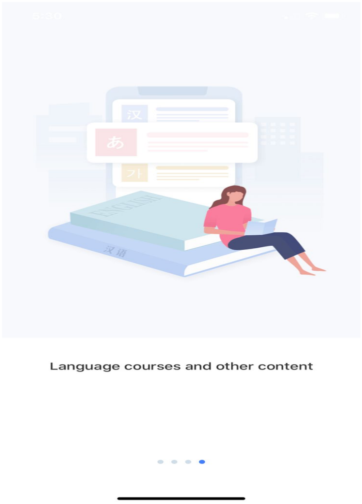
[redacted]

Cassie Sherman

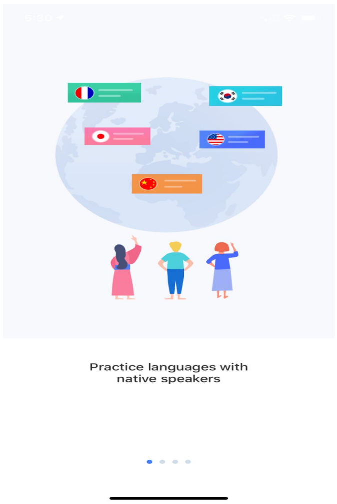
1998-6-30

Female

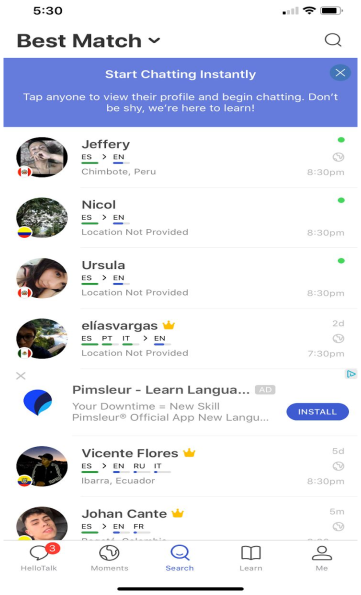
You cannot change your age and gender after creating it. Please provide authentic personal information.



Language courses and other content



Practice languages with native speakers



Start Chatting Instantly

Tap anyone to view their profile and begin chatting. Don't be shy, we're here to learn!

Jeffery
ES > EN
Chimbote, Peru
8:30pm

Nicol
ES > EN
Location Not Provided
8:30pm

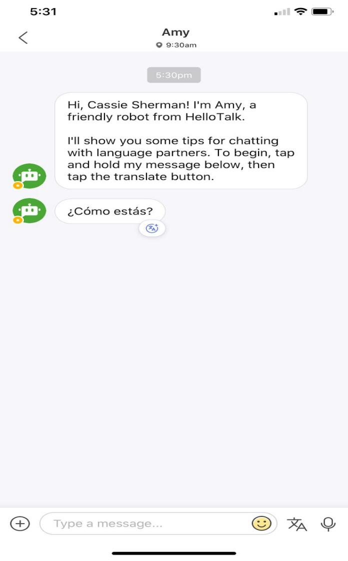
Ursula
ES > EN
Location Not Provided
8:30pm

elíasvargas
ES PT IT > EN
Location Not Provided
2d
7:30pm

Pimsleur - Learn Langua... AD
Your Downtime = New Skill
Pimsleur® Official App New Langu...
INSTALL

Vicente Flores
ES > EN RU IT
Ibarra, Ecuador
5d
8:30pm

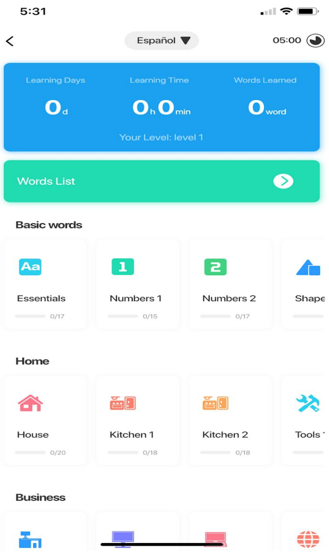
Johan Cante
ES > EN FR
5m

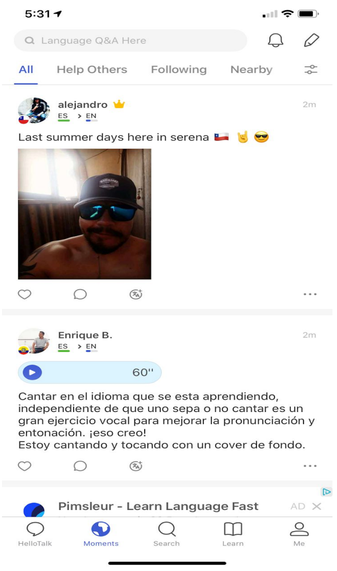


Hi, Cassie Sherman! I'm Amy, a friendly robot from HelloTalk.

I'll show you some tips for chatting with language partners. To begin, tap and hold my message below, then tap the translate button.

¿Cómo estás?



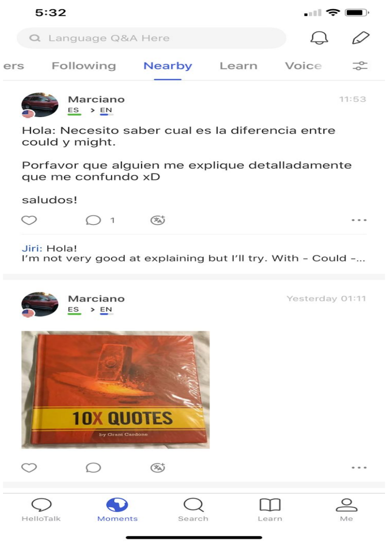


alejandro

Last summer days here in serena 🇨🇱 🤘 😎

Enrique B.

Cantar en el idioma que se esta aprendiendo, independiente de que uno sepa o no cantar es un gran ejercicio vocal para mejorar la pronunciación y entonación. ¡eso creo!
Estoy cantando y tocando con un cover de fondo.



Marciano

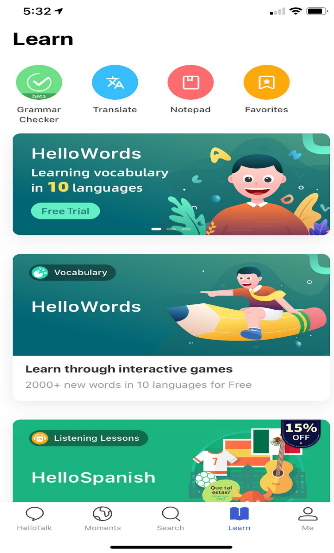
Hola: Necesito saber cual es la diferencia entre could y might.

Porfavor que alguien me explique detalladamente que me confundo xD

saludos!

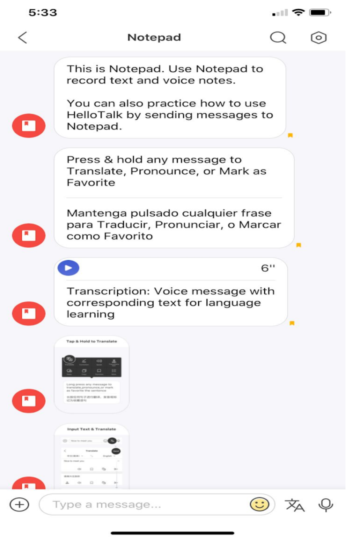
Jiri: Hola!
I'm not very good at explaining but I'll try. With - Could -...

Marciano



Learn through interactive games

2000+ new words in 10 languages for Free



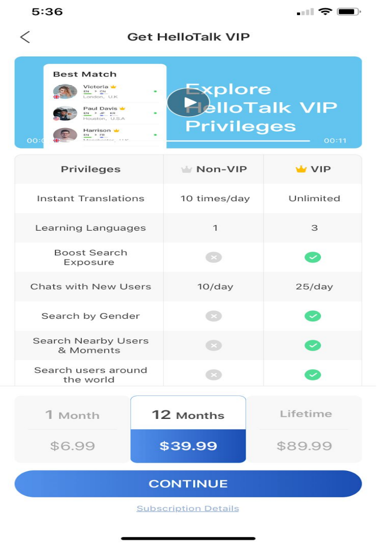
This is Notepad. Use Notepad to record text and voice notes.

You can also practice how to use HelloTalk by sending messages to Notepad.

Press & hold any message to Translate, Pronounce, or Mark as Favorite

Mantenga pulsado cualquier frase para Traducir, Pronunciar, o Marcar como Favorito

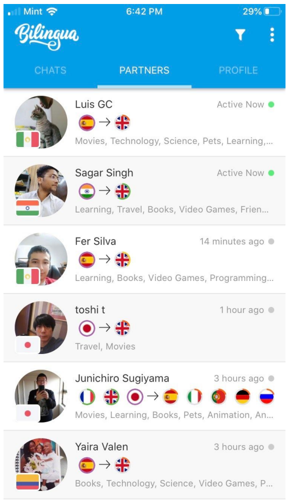
Transcription: Voice message with corresponding text for language learning



Privileges	Non-VIP	VIP
Instant Translations	10 times/day	Unlimited
Learning Languages	1	3
Boost Search Exposure	☒	✓
Chats with New Users	10/day	25/day
Search by Gender	☒	✓
Search Nearby Users & Moments	☒	✓
Search users around the world	☒	✓

1 Month	12 Months	Lifetime
$6.99	$39.99	$89.99

2. https://bilingua.io/



Mint 6:42 PM 29%

Bilingua

CHATS PARTNERS PROFILE

Luis GC Active Now
→
Movies, Technology, Science, Pets, Learning,...

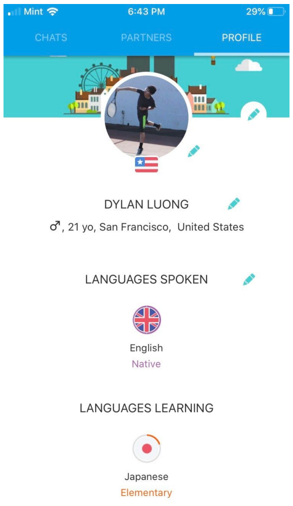
Sagar Singh Active Now
→
Learning, Travel, Books, Video Games, Frien...

Fer Silva 14 minutes ago
→
Learning, Books, Video Games, Programming...

toshi t 1 hour ago
→
Travel, Movies

Junichiro Sugiyama 3 hours ago
→
Movies, Learning, Books, Pets, Animation, An...

Yaira Valen 3 hours ago
→
Books, Technology, Science, Video Games, P...



Mint 6:43 PM 29%

CHATS PARTNERS PROFILE

DYLAN LUONG

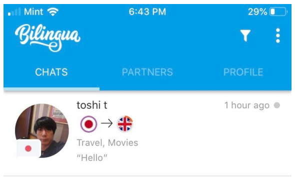
♂, 21 yo, San Francisco, United States

LANGUAGES SPOKEN

English
Native

LANGUAGES LEARNING

Japanese
Elementary



Mint 6:43 PM 29%

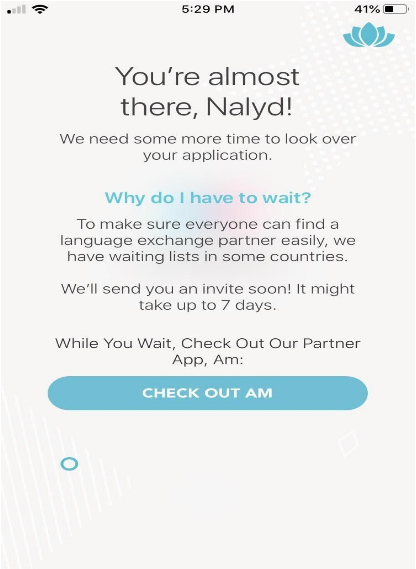
Bilingua

CHATS PARTNERS PROFILE

toshi t 1 hour ago
→
Travel, Movies
"Hello"

3. https://www.tandem.net/

- Offers only mobile app , no desktop version available.
- Long sign up process, as users have to wait up to **seven** days before they're able to use tandem.



5:29 PM 41%

You're almost there, Nalyd!

We need some more time to look over your application.

Why do I have to wait?

To make sure everyone can find a language exchange partner easily, we have waiting lists in some countries.

We'll send you an invite soon! It might take up to 7 days.

While You Wait, Check Out Our Partner App, Am:

CHECK OUT AM

Competitive Features Table

Feature\Product	HelloTalk	Bilingua.io	Tandem	Our Product
Voice/Video	+	+	+	+
Text Chat	+	+	+	+
Report System	+	+	+	+
Matching System	-	-	-	++
Rating System	-	-	-	++
Friend System	-	-	+	++
Access on Web Browser	-	-	-	++
Simple and Easy Interface	-	+	-	++

In comparison to our competitors, we plan to implement a more effective way of matching the user. We try to match the best user for the individual according to their requirements. For the user's convenience our product can be easily accessed not only in the mobile but also in the web browser whereas, our competitors don't have this feature. In order to improve the user experience, we will have a rating system which will let the users know the true quality and behaviour of that user. Also our product is simple and easy to use. Users don't need to have much knowledge on using the tools.

High-level system architecture and technologies used

Backend:

- Ubuntu - Operating System for our server
- Django - as backend framework
- Gunicorn - wsgi connecting django and nginx
- PostgresSQL - Database
- Nginx - web server
- Certbot - https certificate

Frontend:

- FontAwesome: where we get avatars country flags, and most of our system ui icons.
- Flag-icon-css: display flags for language/ location on site
- Bootstrap: UI
- WebRTC - framework we plan to use to achieve real time text, voice and video communication
- Google Analytics

According to caniuse.com if we implement WebRTC into our stack we will get approximately 56% of all users, however for our targeted audience which are desktop users, our coverage will be around 94%, Supporting MS Edge, Safari, Firefox and Chrome.

Team Members

Team Lead :	Cassie Sherman	
Backend Lead :	Ryan Hu	
Frontend Lead :	Mariam Shahab	
Database Lead :	Dylan Luong	
Github Master :	Sawara Bhattarai	--Front End Team Member
Documentation Lead:	Arjun Bista	--Back End Team Member

Checklist:

Item	Status
Team found a time slot to meet outside of the class	DONE
Github master chosen	DONE
Team decided and agreed together on using the listed SW tools and deployment server	DONE
Team ready and able to use the chosen back and front end frameworks and those who need to learn are working on learning and practicing	ON TRACK
Team lead ensured that all team members read the final M1 and agree/ understand it before submission	DONE
Github organized as discussed in class (e.g. master branch, development branch, folder for milestone documents etc.)	ON TRACK