Heuristic Evaluation of CircLing

1. Problem/Prototype Description

CircLing is an app for users to save and share snippets (in the form of "Memories") of their foreign-language, digital conversations for future reference.

2. Violations Found

H1

1. **H1 Visibility of System Status / Problem: Sender of texts in Memories unclear / Severity: 2 / Found by: C**
   a. Task: "Simple: View a memory in Chinese text"
   b. User response: On the "Memories" page, I can't tell if I or the other person sent the text highlighted– it's ambiguous.
   c. Rationale: Knowing who sent the text can give an indication of how prone to error it is.
   d. Solution: Having different text bubble colours depending on the sender like in iMessage.
2. **H1 Visibility of System Status / Severity: 1 / Found by: C**
   a. Problem: How users can see the rest of the conversation in a Memory is not clear in the prototype, but it is in the slides.
   b. Task: "Simple: View a memory in Chinese text"
   c. User response: I can't do anything with those memories other than saving them? Can I see the rest of the conversation? Where can I find the rest of the conversation?.
   d. Rationale: The conversations have no context to them if users can't see the other messages.
   e. Solution: Add the conversation page to the prototype.
3. **H1 Visibility of System Status / Severity: 3 / Found by: B**
   ○ Task: View a random text memory in any language
   ○ Description: You can't tell what filters are currently applied, so you might miss some memories because of a filter that you weren't aware of
   ○ Rationale: Users should be able to understand the status of the Memories page within the app without having to guess which filters have been applied
   ○ Fix: Include the currently applied filters at the top of the Memories page
4. **H1 <mark>Visibility</mark> of System Status / Severity: 2 / Found by: B**
   ○ Task: Understand your language use statistics (part of the See how your language use overlaps with a bilingual friend task outlined in the team slides)
   ○ Description: There is no confirmation that new goals have been saved in the Edit Goals page

- ○ Rationale: Users do not know if the app correctly saved their preferences as they do not receive any notification that changes have been applied unless they reopen the Edit Goals page
- ○ Fix: Display a notification that goals have changed after a user modification has occurred

5. **H1 Visibility of System Status / Severity: 3 / Found by: C**
   a. Problem: When on the Memories versus Saved page, the difference is unclear
   b. Task: "Simple: View a memory in Chinese text" & "Moderate Task": Save a memory in text."
   c. User response: I can't tell what the difference between searching for a memory and a saved memory is.
   d. Rationale: The function of specifically saving a memory is unclear and makes the Memories page seem redundant, so users don't really know exactly what they're looking at in either page.
   e. Solution: Add some distinguishing features between the Memories and Saved pages, since both just seem to save snippets of information, can be searched, and can be filtered.

6. **H1: Visibility of system status / Severity: 2 / Found by: D**
   a. Task 2: Save a memory in text
   b. Problem Description: Saved message bubbles have a yellow-filled bookmark icon but non-saved messages don't have any icon indication
   c. Rationale: While it is reasonable for users to guess that no bookmark means the bubble is not saved, it is not necessarily a clear indication of its ability to be bookmarked/status of the message
   d. Suggested Fix: Add a non-filled bookmark icon in the bubbles that aren't saved yet, which fills up when a user chooses to save

H2

7. **H2 Match between system and the real world / Severity: 3 / Found by: B**
   a. Task: See how your language use overlaps with a bilingual friend
   b. Description: The Language Buddies text is not quite understandable without a description. It could be interpreted as friends who want to speak the same language as you or those who are already at a certain skill level
   c. Rationale: Language Buddies is not a well-known term outside of the app and so might require outside knowledge to understand
   d. Fix: Add a description of what Language Buddies mean

8. **H2 Match between system and the real world / Severity: 3 / Found by: C**
   a. Problem: "Save" icon looks like the *status* of the Memories page. /
   b. Task: "Simple: View a memory in Chinese text"
   c. User reaction: It's like I'm saving the Memories page itself (metaphor for IRL, that's how the save icon usually works)
   d. Rationale: It's hard to know that that is another page for a first-time user.

e. Solution: Have the "Saved" button in the bottom toolbar.

9. **H2 Match between system and the real world / Severity: 3 / Found by: B**
   a. Task: View a random text memory in any language
   b. Description: The alignment of messages in the Memories page is similar to messaging in iMessage and other messaging apps, which can make it seem like multiple staggered messages are a conversation with one another when they're actually separate memories
   c. Rationale: Users join the app with prior experience with other messaging apps, and so this app should mirror their real-world experiences to avoid confusion
   d. Fix: Consider changing the message alignment or including spaces/dividers between individual memories

10. **H2: Match between System and the Real World / Severity: 3 / Found by: A**
    a. Task: Complex Task
    b. Description: There are 9 pairs of bars on the graph displaying weekly data
    c. Rationale: It is unclear what the 9 pairs of bars correspond to given that the graph is displaying weekly data and there are only 7 days in a week. The graph's vagueness is confusing and could potentially frustrate users who are trying to get a better understanding of their language usage
    d. Fix: Include only 7 pairs/sets of bars on the graph when displaying weekly data and label each set with the day of the week

11. **H2 Match between system and the real world / Severity: 2 / Found by: B**
    a. Task: See how your language use overlaps with a bilingual friend
    b. Description: It isn't really clear what the username on the You and Marie page refers to (i.e. whether it's from a specific messaging app or a CircLing username)
    c. Rationale: Users may be accustomed to seeing friends' usernames for specific apps within the app itself (e.g. Instagram or twitter usernames on people's respective pages), but this app does not have the functionality to add a username. Including a username here therefore does not match with experiences users may be accustomed to in their prior experience and so may be confusing.
    d. Fix: Remove the username from this page

12. **H2: Match between system and the real world / Severity: 4 / Found by: D**
    a. Task 1: View a memory in Chinese text
    b. Problem Description: There is no information on how the message bubbles in the Memories page is sorted
    c. Rationale: In the real world, things are usually sorted based on their chronological order in the form of a list, having these bubbles may create confusion if there is no clear indication or option to customize its sorting
    d. Suggested Fix: Create a sorting feature and add components that indicate how each bubble is different in terms of that sorting (e.g. if sorted by most recent, each bubble could have small box that indicates when that message was sent)

H3

13. **H3 User control and freedom / Severity: 3 / Found by: B**
    a. Task: View a random text memory in any language
    b. Description: You can only click on a message once to view it in detail and save it. Once a message is marked as saved, it is not possible to click on it again for the detailed view
    c. Rationale: Users cannot undo mistakenly saving a message or check message details again without navigating to the saved messages page, searching for that message, and then deleting it
    d. Fix: Keep messages clickable even after an individual message is saved

14. **H3 User Control and Freedom / Severity: 2 / Found by: B**
    a. Task: Save a memory in text
    b. Description: No back button from the Saved Memories page to the original memories page, user needs to un-click the Save icon
    c. Rationale: Users cannot very easily recover from accidentally navigating to the Saved Memories page
    d. Fix: Add a back button to the Saved Memories page

15. **H3: User Control and Freedom** / **Severity: 3 / Found by: A**
    a. Task: Complex Task
    b. Description: User can only set their language goals in terms of number of words per day
    c. Rationale: The user knows themself more than anyone, so they might want more control over the customization of their goals (i.e. tailoring them more to their past patterns so that their goals are more achievable)
    d. Fix: Allow the user to edit the units of their goal (i.e. words per week, words per month, etc.)

16. **User control and freedom / Severity: 2 / Found by: D**
    a. Task 3: See how language use overlaps with a friend
    b. Problem Description: There is no cancel button after changing the words/day goal of a particular language
    c. Rationale: A user may change their mind and want to go back to their original goal. Currently, the only option is to retype it (if they remember) or press back (which is unclear whether it will save the goal)
    d. Suggested Fix: Add a clear cancel button

17. **H3: User control and freedom / Severity: 3 / Found by: D**
    a. Task 3: See how language use overlaps with a friend
    b. Problem Description: There is no way to remove or block a friend
    c. Rationale: The user's privacy should be a priority which includes giving them the option to remove or block another user from their feed

       d. Suggested Fix: Have an explicit button or kebab button that leads to actions you can take with another user (remove, block, etc.)

18. **H3:** **User control and freedom / Severity: 2 / Found by: D**
    a. Task 1: View a memory in Chinese text
    b. Problem Description: There is no way to remove or hide a message bubble from the Memories screen
    c. Rationale: It can be the case where a user chooses not to see a particular message bubble due to its content so the interface must provide an option for them to do so
    d. Suggested Fix: Have a hide/remove button next to the bubble

H4

19. **H4 Consistency and Standards / Severity: 3 / Found by: B**
    a. Task: All Tasks
    b. Description: The orange color in the app is used in a few different ways. For example, orange text is clickable in the "Week" link and the menu buttons at the bottom bar, but the color is also used to denote language colors that aren't clickable
    c. Rationale: Users may accidentally click on language names and other non-clickable items, assuming that they are a button/link like other orange-colored items, and become confused
    d. Fix: Use white or a different color for language names and other non-clickable items

20. **H4:** **Consistency and Standards / Severity: 2 / Found by: A**
    Task: Complex Task
    Description: The goal for English and Chinese is 150 words/day (as defined in the "Edit Goals" section") but the graph says that the goal is 100
    Rationale: The goals defined by the user are not reflected in the graph detailing the stats of the user which takes control away from them
    Fix: Ensure that the goal(s) specified by the user are reflected throughout the app (the graph, progress circles, etc.)

21. **H4:** **Consistency and Standards / Severity: 1 / Found by: A**
    Task: Complex
    Description: The title of the screen reads "You & Marie" with the user coming first but then the stats below are displayed as "Marie" then "You"
    Rationale: The order of the users is inconsistent. It is also common for app's to prioritize to the user and always display their information first so users are used to that experience and might want it in this application as well
    Fix: Make the user's data be displayed before their friends

22. **H4** **Consistency and Standards / Severity: 3 / Found by: B**

a. Task: See how your language use overlaps with a bilingual friend
b. Description: People who want to practice the same language as you are listed as Friends on the Insights page but as Language Buddies in the You page, and the concept of Language Buddies isn't described
c. Rationale: Users may find the difference in terminology between Language Buddies and Friends confusing as they are used in different pages within the app but seem to have similar functions
d. Fix: Use consistent language of either Language Buddies or Friends throughout the app

23. **H4 Consistency and Standards / Severity: 3 / Found by: B**
    a. Task: See how your language use overlaps with a bilingual friend
    b. Description: People who want to practice the same language as you are listed as Friends on the Insights page but as Language Buddies in the You page, and the concept of Language Buddies isn't described
    c. Rationale: Users may find the difference in terminology between Language Buddies and Friends confusing as they are used in different pages within the app but seem to have similar functions
    d. Fix: Use consistent language of either Language Buddies or Friends throughout the app

24. **H4 Consistency and Standards / Severity: 1 / Found by: B**
    a. Task: See how your language use overlaps with a bilingual friend
    b. Description: On the general Insights page, languages shared with friends are identified with the phrase "You both want to practice more," while in the page with more detailed insights, the different phrase "Both of you want to speak more" is used
    c. Rationale: Users might assume there is a reason why these two different phrases are used as opposed to a single consistent phrase
    d. Fix: Use the same phrase "You both want to practice more" in both locations

25. **H4 Consistency and Standards / Severity: 3 / Found by: B**
    a. Task: Save a memory in text
    b. Description: The format of the Saved Memories screen is different from the original Memories screen, just showing a list instead of a conversation-like interface
    c. Rationale: The inconsistency how messages are displayed in the Memories and Saved Memories pages might be confusing for users and unnecessary because users have to learn how to use both interfaces
    d. Fix: Choose 1 of the 2 formats for both pages

26. **H4 Consistency and Standards/ Severity: 1 / Found by: B**
    a. Task: Save a memory in text
    b. Description: The save icon in the top right corner of the screen becomes filled in when you click on it and navigate to that page, but the other icons do not

    c. Rationale: Users might be a bit confused about the inconsistency between how the current screen is denoted in the bottom menu as opposed to the top right corner and what that discrepancy means

    d. Fix: Change the color of the icon to orange when a user navigates to the Saved Memories page, but do not fill it in

27. **H4 Consistency and Standards /** Problem: No confirmation when deleting a Saved Memory. / Severity: 2 / Found by: C
    a. Task: "Moderate Task": Save a memory in text."
    b. User reaction: I could accidentally delete a memory.
    c. Rationale: Users would have to re-add a memory if they accidentally save it.
    d. Solution: Add a confirmation step for deletions.

28. **H4 Consistency and Standards /** Problem: In the "Edit Goals" page, the languages are being referenced in the Latin script as opposed to their original script, which is different from the page right before it. / Severity: 2 / Found by: C
    a. Task: "Complex Task: See how language use overlaps with friends."
    b. User reaction: The other pages had languages in their original script before, would help to have it here as well
    c. Rationale: This is inconsistent with the goal of allowing users to see the language in its original script.
    d. Solution: Either have languages described in their own word/script or have them in English throughout the app.

29. **H4: Consistency & Standards / Severity: 3 / Found by: A, C**
    a. The interface used the string "Save" on the first screen for saving the user's profile, but used the string "Update" on the second screen. Users may be confused by this different terminology for the same function.
    b. Fix: Use the same string on each screen.

30. **H4 Consistency and Standards / Severity: 1 / Found by: B**
    a. Task: Understand your language use statistics (part of the See how your language use overlaps with a bilingual friend task outlined in the team slides)
    b. Description: The "Save" button in the "Edit Goals" screen uses a yellow to orange gradient, which isn't used for any other buttons in other screens
    c. Rationale: Users might be confused why the Save button is a different color and font than other items and if this denotes a different meaning
    d. Fix: Change the colors of the Save Button to either orange text or a gray button to match other buttons in the app

31. **H4: Consistency and standards / Severity: 2 / Found by: D**
    a. Task 1: View a memory in Chinese text
    b. Problem Description: Some message bubbles have icon of platform the message is from but the most bottom bubble does not have an icon

    c. Rationale: While it was clear for the user to identify where most of the messages come from, it would cause confusion that even only 1 bubble does not follow this pattern

    d. Fix: Add an icon, if that bubble was intended for in-app messaging within the Circling app, it would be best to add a Circling icon

32. H4: Consistency and standards / Severity: 1 / Found by: D

    a. Task 3: See how language use overlaps with a friend

    b. Problem Description: In the UI where a user compares their statistics with their friend, the text says "You both want to speak more …"

    c. Rationale: Given that this is a text-based app, the user would automatically assume that there is no speaking involved rather only actions of texting

    d. Suggested Fix: Replace "speak" with "type" or something more universal (e.g. "practice")

33. H4: Consistency and standards / Severity: 2 / Found by: D

    a. Task 3: See how language use overlaps with a friend

    b. Problem Description: The add a friend button uses a plus icon with a circle is typically used without the existence of another pressable button

    c. Rationale: This creates confusion within the users whether they are supposed to only press the circle plus, or the entire button, or if it works either way.

    d. Suggested Fix: Remove the circle and just have the plus icon with the add button to make it clear that it is just one button

34. H4: Consistency and standards / Severity: 4 / Found by: D

    a. Task 3: See how language use overlaps with a friend

    b. Problem Description: When adding a new friend, there is no indication of what platform that friend comes from whereas in the Memories screen, most bubbles indicate whether they come from WhatsApp, Messenger, etc.

    c. Rationale: A user would want to have a clear idea which chat they are retrieving it from

    d. Suggested Fix: Add a UI that separates friends based on which platform they come from and take advantage of the use of icons

35. H4: Consistency and standards / Severity: 4 / Found by: D

    a. Task 2: Save a memory in text

    b. Problem Description: A user saves a message bubble but when they go to the Saved Memories screen, the UI is a chat interface with different friends instead of the message bubble

    c. Rationale: The user is uncertain to whether saving the message bubble means saving the entire chat or saving that specific bubble

    d. Suggested Fix: Presumably, make it clear in the Saved Memories screen that it is only saving these specific bubbles

36. H4: Consistency and standards / Severity: 2 / Found by: D

    a. Task 1: View a memory in Chinese text

    b. Problem Description: The messages in the bubbles are center aligned

    c. Rationale: In most messaging platforms, messages are either left or right aligned. Having it center aligned here makes it inconsistent with major platforms. Also, there is HCI research that states how left aligned is much more readable than center aligned texts

    d. Suggested Fix: Set all the texts to either left and/or right-aligned instead of center-aligned

H5

37. **H5 Error Prevention / Severity: 2 / Found by: B**
    a. Task: Understand your language use statistics (part of the See how your language use overlaps with a bilingual friend task outlined in the team slides)
    b. Description: You have to navigate to the "Edit Goals" page to see the numerical goal of words per day
    c. Rationale: Since users cannot see new word goal totals once they have changed them, it can be difficult to tell if you've accidentally mis-entered a word goal
    d. Fix: Include the selected word goal total in the same area as the progress circles

38. **H5 Error Prevention /** Problem: Threshold between "Memories" and "Insights" unclear on toolbar. / Severity: 2 / Found by: C
    a. Tasks: "Simple: View a memory in Chinese text" & "Complex Task: See how language use overlaps with friends."
    b. User reaction: I can't see borders between "memories" and "stats"-- don't know which one will open if i click in the middle.
    c. Rationale: Users should be able to see which button will be pressed when they touch a portion of the screen.
    d. Solution: Introduce a light border between toolbar buttons.

39. **H5 Error Prevention / Severity: 2 / Found by: B**
    a. Task: View a random text memory in any language
    b. Description: The time frame selection looks like a text entry box, which can cause problems with formatting or trying to find a specific date and time
    c. Rationale: Users may accidentally enter a malformatted date or use different date formats depending on their cultural background or country of residence (i.e. mmddyyyy vs ddmmyyyy)

40. **H5 Error Prevention / Severity: 3 / Found by: B**
    a. Task: Save a memory in text
    b. Description: The trash can symbol is used for saved memories, and it's unclear whether clicking it will un-save the message or delete it as a memory entirely
    c. Rationale: Users may hit the trash can icon mistakenly thinking that a message will be deleted and still see the same message in their overall Memories page. Conversely, users may avoid hitting the trash can entirely out of concern that the message will be deleted

       d. Fix: Either replace the trash can icon or label it with the word "un-save" to indicate that the message is not permanently deleted

41. **H5 Error Prevention / Severity: 2 / Found by: B**
    a. Task: See how your language use overlaps with a bilingual friend
    b. Description: The Add Friend and Search pages accessible from Insights have a bar at the top that looks as though it can be pulled down, but you need to use the Cancel button to exit the page
    c. Rationale: Users may mistakenly attempt to drag down the page to close it and become confused
    d. Fix: Allow users to close the page by dragging down
42. **H5 Error Prevention / Severity: 2 / Found by: B**
    a. Task: Save a memory in text
    b. Description: The same bookmark-shaped icon is used to represent both an individual saved memory and the saved memories page as a whole, and so it can be unclear that the icon in the top right corner navigates to a separate page
    c. Rationale: Users may be confused at the meaning of the icon in the top right corner and think it represents saving all selected messages on the page (this is how I interpreted it initially), mistakenly clicking on it and navigating to a list of saved messages
    d. Fix: Use a different icon for the Saved Memories page or move it to the bottom menu

H6

43. **H6 Recognition rather than recall /** Problem: When not on the "Insights" page, what the button on the bottom right of the toolbar does is ambiguous. / **Severity: 2** / Found by: C
    a. Task: "Complex Task: See how language use overlaps with friends."
    b. User reaction: Bottom right– I can't tell what that icon is if I haven't used the app before, even though it's a central function.
    c. Rationale: Can make all tasks available to the user more clear; they can't see they can have insights without rummaging through the app.
    d. Solution: Have small text under the icons in the toolbar to indicate what they are.
44. **H6 Recognition rather than recall / Severity: 2 / Found by: B**
    a. Task: See how your language use overlaps with a bilingual friend
    b. Description: The horizontal dotted lines on the activity graph are a bit unclear in meaning, since they don't seem to match up to average or maximum word counts
    c. Rationale: Users may have to understand the meaning of the dotted lines within context and then remember this meaning across uses of the app to understand joint use statistics
    d. Fix: Label the dotted lines with their meaning (e.g. Average Word Usage)
45. **H6 Recognition rather than recall / Severity: 3 / Found by: B**

    a. Task: View a random text memory in any language
    b. Description: It can be unclear where the messages in the Memories page come from since they are texts that might be difficult to understand out of context
    c. Rationale: Users may have to remember the rest of the conversation and context associated with a particular text message or look it up in the corresponding messaging app to get a better understanding of where the memory is from
    d. Fix: Label a memory with a time, location, or other identifier (e.g. Los Angeles 2020)

46. **H6: Recognition Rather Than Recall / Severity: 2 / Found by: A**
Task: Complex Task
Description: The progress circles are not labeled with the quantitative amount of progress the user has made
Rationale: The user has to remember what their goal was to figure out how much they have left to achieve it. It would add to the UX if they could see how much they have done so that even when they have reached the goal, they can see how much in total they have completed
Fix: Add a fraction to accompany the progress circle (i.e. 73/100 words)

47. **H6 Recognition rather than recall / Severity: 2 / Found by: B**
    a. Task: View a random text memory in any language
    b. Description: both the Filter Memories page and the main Memories page contain a search bar, and it is unclear if these two search bars have different functions
    c. Rationale: If there are differences between what the Filter Memories and main Memories pages search over, users will have to recall these differences and choose the appropriate place to search rather than being informed of the difference by the app
    d. Fix: Label the search bar in the Filter memories page to indicate how its function is different from the bar accessible from the main messages page

48. **H6 Recognition rather than recall / Severity: 2 / Found by: B**
    a. Task: See how your language use overlaps with a bilingual friend
    b. Description: When comparing word use in the circles, you don't know if the total that your friend is aiming towards is similar to yours and so it is more challenging to do a comparison between two people
    c. Rationale: Users may have to reach out to their friend to get an understanding of their word goals and then remember this number to get a more accurate comparison between the quantities of words they and their friend have practiced rather than being informed through the app
    d. Fix: Include the total number of words spoken so far in addition to the percentage progress for the user and their friend

49. **H6 Recognition rather than recall /** Problem: Navigating to the Memories page is unintuitive. **/ Severity: 2 / Found by: C**

      a. Task: "Simple: View a memory in Chinese text", but refers to getting to that page from any of the other pages

      b. User reaction: There is nothing with the word "Memories" to show me how to get back to that portion of the app.

      c. Rationale: The chat icon, to a novice user, could be confused to be part of a (nonexistent) chatting function, and they may struggle to get back to the Memories page.

      d. Solution: Adding the word "Memories" under the chat icon to show that it refers to the Memories page.

50. **H6 Recognition rather than recall / Severity: 3 / Found by: B**

      a. Task: See how your language use overlaps with a bilingual friend

      b. Description: The Activity graph between two individuals includes measurements but no axes

      c. Rationale: Users may have to intuit the meaning of the values in the graph (especially for the bottom time axis) and remember this meaning across multiple uses

      d. Fix: Add meaningful axes with units on the Activity graph

51. **H6 Recognition rather than recall / Severity: 2 / Found by: B**

      a. Task: View a random text memory in any language, Save a memory in text

      b. Description: Filtering by date is a feature, but there is no way to know if you've filtered correctly since the memories are not associated with a date

      c. Rationale: Users must remember the date filters that they've applied as well as the dates that a message has been sent

      d. Fix: Label each message with a date

52. **H6: Recognition rather than recall / Severity: 3 / Found by: D**

      a. Task 1: View a memory in Chinese text

      b. Problem Description: After filtering the message bubbles based on a particular language, there is no indication on what the status of the filter is after closing the filter tab

      c. Rationale: After filtering and closing the filter tab, the user must remember what option they chose instead of having that information being readily available on the screen (or alternatively they must go back to the filter option to clarify)

      d. Suggested Fix: Simply have the Memories screen indicate that the bubbles are currently filtered to show a certain language (even when the filters tab is closed)

53. **H6: Recognition rather than recall / Severity: 3 / Found by: D**

      a. Task 3: See how language use overlaps with a friend

      b. Problem Description: There is no option to "favorite" a friend

      c. Rationale: If a user has many friends, the friend that texts the most often may not necessarily mean it is the friend they want to "favorite" or have the most practice with. Because of this, a user must manually find the friend they want to favorite and remember who they are because there is no indication

d. Suggested Fix: Have a favorite or pin button that pins a friend to the top of the list

54. H6: Recognition rather than recall / Severity: 3 / Found by: D
   a. Task 2: Save a memory in text
   b. Problem Description: In the Saved Memories screen, there is no indication of what language each chat/bubble is in
   c. Rationale: Currently, a user must try to remember which saved message belongs to which language, which increases their cognitive load
   d. Suggested Fix: Have a simple box that indicates what language the message is in

55. H6: Recognition rather than recall / Severity: 3 / Found by: D
   a. Task 1: View a memory in Chinese text
   b. Problem Description: In the Memories screen, there is no indication of the date of the message
   c. Rationale: Currently, the user must try to remember when the message was sent rather than having the info being readily available to them
   d. Suggested Fix: Have a small text on top of the bubble that details the date

56. H6: Recognition rather than recall / Severity: 2 / Found by: D
   a. Task 2: Save a memory in text
   b. Problem Description: In the Saved Memories screen, there is no information about how many messages I've saved
   c. Rationale: The user must either try to remember or manually count how many bookmarked/saved messages they have
   d. Suggested Fix: Besides the Saved Memories title, have a number that counts how many saved messages the user has

57. H6: Recognition rather than recall / Severity: 1 / Found by: D
   a. Task 3: See how language use overlaps with a friend
   b. Problem Description: The "save" button when changing the words/day goal is always active (even when no changes were made)
   c. Rationale: Having an inactive button when there has been no changes made yet may help the user quickly identify whether any changes were made
   d. Suggested Fix: Create a gray version of the same button to show before any changes are made

58. H6: Recognition rather than recall / Severity: 1 / Found by: D
   a. Task 3: See how language use overlaps with a friend
   b. Problem Description: There is no indication to see how many friends a user has
   c. Rationale: Quite a subtle problem but it would help a user remember how many friends they can interact with via this app if it explicitly says how many of their friends are also in the app
   d. Suggested Fix: Next to the title Friends, add a number that indicates the number of friends

H7:

59. **H7 Flexibility and Efficiency of Use / Severity: 2 / Found by: B**
    a. Task: See how your language use overlaps with a bilingual friend
    b. Description: In order for a user to compare word usage after finding out who their language buddies are on the You page, they have to find these language buddies by searching for them on the main Insights page
    c. Rationale: Users who compare joint use statistics with the same friends frequently do not have the ability to speed up this interaction without moving through multiple pages
    d. Fix: Have the icons for language buddies link to the corresponding joint use statistics page for the user and that language buddy
60. **H7 Flexibility and Efficiency of Use /** Problem: No way to "Star" or "Favourite" among saved interactions. **/ Severity: 3 / Found by: C**
    a. Task: "Moderate Task": Save a memory in text."
    b. User reaction: How will I get to the saved memories that are particularly relevant without searching each time?
    c. Rationale: Users can see their most relevant conversations with fewer tasks
    d. Solution: Add a "Star" function to the "Saved" page.
61. **H7: Flexibility and Efficiency of Use / Severity: 2 / Found by: A**
    a. Task: Complex Task
    b. Description: It takes several steps to view a fellow friend's profile/stats
    c. Rationale: A user who is accustomed to the app may want a shortcut to view their friend's profile to compare stats with them while they are on the "Memories" screen
    d. Fix: Make the users that are present on the "Memories" screen a shortcut to their profile by simply clicking on their profile picture
62. **H7: Flexibility and Efficiency of Use / Severity: 2 / Found by: A**
    a. Task: Moderate Task
    b. Description: To unsave a memory, you have to go to the "Saved Memories" screen and delete it
    c. Rationale: Say, for example, the user saves a memory by accident. The user should be able to quickly undo their mistake, but the current setup requires too many steps and is not efficient
    d. Fix: Using the fix I recommended in Violation #5, the user could click the bookmark icon again to turn it into the outlined bookmark which indicates that they wish to unsave it
63. **H7: Flexibility and efficiency of use / Severity: 2 / Found by: D**
    a. Task 1: View a memory in Chinese text
    b. Problem Description: Having to tap on a user's profile picture to access the bookmark button adds unnecessary steps

    c. Rationale: There is only 1 action a user can do after tapping on the profile picture of another user in the Memories screen, which is inefficient because it adds more steps to something that can be simplified

    d. Suggested Fix: Have the bookmark icon available next to the bubble so user can instantly bookmark without tapping on the profile

64. **H7: Flexibility and efficiency of use / Severity: 3 / Found by: D**

    a. Task 3: See how language use overlaps with a friend

    b. Problem Description: There is no way to sort or filter my list of friends

    c. Rationale: It may be a common thing that a user would want to access frequently contacted friends. As of now, a user must manually search for another user of interest

    d. Suggested Fix: Add a sorting feature that can sort the list (e.g. based on interaction frequency)

H8:

65. **H8 Aesthetic and Minimalist Design / Severity: 2 / Found by: B**

    a. Task: See how your language use overlaps with a bilingual friend

    b. Description: A user's friends are listed twice - once in the Insights page and again when a user clicks on the magnifying glass icon to search for a friend

    c. Rationale: Having a separate page for searching friends includes redundant information and can be removed to promote minimalism

    d. Fix: Remove the separate search page and just place a search bar in the Friends section of the Insights page

66. **H8 Aesthetic and Minimalist Design / Severity: 3 / Found by: B**

    a. Task: View a random text memory, Save a memory in text

    b. Description: The clickable search bar and the filter icon both seem to navigate to the same page

    c. Rationale: Including these as two separate buttons is unnecessary as one of them is rendered redundant and could be removed

    d. Fix: Combine these two functions into a single menu

67. **H8 Aesthetic and Minimalist Design /** Problem: Text looks a bit busy on the "Saved" page. / Severity: 2 / Found by: C

    a. Task: "Moderate Task": Save a memory in text."

    b. User reaction: It's hard to distinguish messages from each other unless I strain a little and put in the effort.

    c. Rationale: More distinction/division between conversations will make the task of finding a specific text more clear and intuitive.

    d. Solution: Introduce higher-contrast text, stickers indicating which filters apply, or sort by relevance and more colours.

68. **H8: Aesthetic and Minimalist Design / Severity: 3 / Found by: A**

    a. Task: Complex Task

    b. Description: The "Friends" section takes up too much on the "Insights" screen

    c. Rationale: The "Insights" screen should be dedicated to analyses of the own user's data

    d. Fix: Create a separate screen and button on the navigation bar for the "Friends" section

69. **H8: Aesthetic and Minimalist Design / Severity: 2 / Found by: A**

    a. Task: Complex Task

    b. Description: The "Language Buddies" section on the "You" screen is a bit redundant since the user's friends are listed on the previous screen

    c. Rationale: The "Language Buddies" section is taking up space that can be used to show more stats of the user's language usage

    d. Fix: Remove the "Language Buddies" section and add additional insight on the user's data such as average word/day for each language, total words said in each language, etc.

70. **H8: Aesthetics and minimalist design / Severity: 2 / Found by: D**

    a. Task 1: View a memory in Chinese text

    b. Problem Description: In the memories screen, the spacing and grid system (for example: the search button and the memories title) are not consistent (different spacing values)

    c. Rationale: Inconsistent spacing and grid systems may create a subtle unease within the users given that users naturally spot inconsistency and correlate them with dysfunction

    d. Suggested Fix: Apply a more concrete spacing and grid system, for spacing use increments of 4px (4px, 8px, 12px, 16px, etc)

H9:

71. **H9 Help Users Recognize, Diagnose, & Recover from Errors /** Problem: Can't delete Memories. / Severity: 4 / Found by: C

    a. Task :"Simple: View a memory in Chinese text"

    b. User reaction: How you delete is unclear unless you know how to use the app

    c. Severity: 4

    d. Rationale: The user's Memory page could get overcrowded with Memories they don't even want, especially when they accidentally add one.

    e. Solution: When hovering over a memory, being able to save it but also delete it.

72. **H9 Help Users Recognize, Diagnose, & Recover from Errors /** Problem: No option to archive memories. / Severity: 3 / Found by: C

    a. Task: "Moderate Task": Save a memory in text."

    b. User reaction: I could accidentally delete a memory, archiving is more forgiving.

c. Rationale: Users can re-add a memory if they accidentally delete it.

d. Solution: Add an "archive" option for Saved Memories.

H10

73. **H10 Help and Documentation /** Problem: No instruction as to how users save memories. / Severity: 3 / Found by: C
    a. Task: "Simple: View a memory in Chinese text"
    b. User reaction: How does something get to "Memories"?
    c. Rationale: There is no way to understand how one gets these conversations into the app, which is a pretty central functionality.
    d. Solution: If this action is made through other apps (i.e. iMessage), show in the onboarding process and mockup how users can achieve this.

74. **H10 Help and Documentation /** Problem: Unable to search for a user with a phone number, but this is not clear. / Severity: 1 / Found by: C
    a. Task: "Complex Task: See how language use overlaps with friends."
    b. User reaction: It looks like I can only search by username and not phone #, but that isn't verbalised.
    c. Rationale: Users could get frustrated if they don't know their friends' usernames and are unable to know why they can't search by phone number.
    d. Solution: Introduce a search by number functionality or make clear that users can only search for someone else via username.

75. **H10 Help and Documentation /** Problem: Not clear what a user can do about wanting to practise the same language as friends / Severity: 2 / Found by: C
    a. Task: "Complex Task: See how language use overlaps with friends."
    b. User reaction: Both wanting to practise more: nothing actionable here, unclear what I should do with this information.
    c. Rationale: The information will end up redundant if it's not actionable.
    d. Solution: Have actionable items (ways to practise with those friends).

76. **H10 Help and Documentation / Severity: 2 / Found by: B**
    a. Task: Save a memory in text
    b. Description: When a message is not saved or has been removed from saved messages, it's unclear that you can click on the icon of the person who sent it to save the message
    c. Rationale: Users who have no saved messages when initially joining the app may not know how to save a message and might need documentation or an introductory sequence to understand how to use this feature
    d. Fix: Include empty outlines of the save icon next to unsaved messages in a similar fashion to how filled icons are placed next to saved texts

H11

77. **H11 Accessible Design / Severity: 3 / Found by: B**
    a. Task: Understand your language use statistics (part of the See how your language use overlaps with a bilingual friend task outlined in the team slides)
    b. Description: Red and green are used adjacent to one Another to distinguish languages on the Activity graph
    c. Rationale: Users who are red-green colorblind might have a lot of difficulty understanding the graph since they cannot distinguish between the two colors
    d. Fix: Use colors other than red and green and/or add different patterns to each of the bar types in graphs
78. **H11 Accessible Design / Severity: 2 / Found by: B**
    a. Task: View a random text memory in any language
    b. Description: The search bar contains gray text on a darker gray background, which might be difficult to read for some users
    c. Rationale: Visually impaired users may find the search bar illegible because of the lack of distinguishable text from the background
    d. Fix: Use more contrasting colors for this text
79. **H11 Accessible Design /** Problem: No voice features for pronunciation of the text. / Severity: 3 / Found By: C
    a. Task: All
    b. User reaction: I'd like to be able to hear how the Memories are correctly pronounced.
    c. Rationale: This could be particularly useful to users with low or impaired vision, and would dramatically improve users' pronunciation.
    d. Solution: Add a little speaker icon to tell a user how their Memory is pronounced.

80. **H11 Accessible Design /** Problem: Page for "Saved" can't be accessed other than a small button on the upper right corner of the "Memories" page / Severity: 3 / Found By: C
    a. "Task: "Moderate Task": Save a memory in text."
    b. User reaction: There's only an icon and it doesn't look like it's taking me to a new page with the bookmark.
    c. Rationale: The Memories page gives me the impression of serving that purpose because there is no clear indication that that is where I access my saved content.
    d. Solution: Having "Saved" on the lower toolbar instead.
81. **H11 Accessible Design /** Problem: Text looks a bit busy on the "Saved" page.
    a. Task: "Moderate Task": Save a memory in text." / Severity: 1 / Found By: C
    b. User reaction: For filters and search, I'd like to see the search bar and time frame selection more visible/higher contrast
    c. Rationale: Higher contrast in the text will make the tasks of searching and filtering more clear and intuitive, especially to low-vision users.
    d. Solution: Go for a lighter grey or a white.

82. **H11 Accessible Design / Severity: 2 / Found by: B**
    a. Task: See how your language use overlaps with a bilingual friend
    b. Description: Contrast for the gray text on the Activity Graph might be a bit too low to fully distinguish from the background
    c. Rationale: Users with visual impairments may not find the graph text legible
    d. Fix: Choose a lighter colored text or darker background to improve contrast

H12

83. **H12: Value Alignment & Inclusion /** Problem: The language being specified as "Chinese" is a bit too general. / Severity: 4 / Found By: C
    a. Task: "Simple: View a memory in Chinese text"
    b. User response: Is this Mandarin Chinese?
    c. Rationale: Languages can vary dramatically depending on the dialect (Chinese, Arabic, etc.), and Chinese specifically has many dialects that are sometimes not even mutually intelligible. The user should be able to discern which dialect is being referred to.
    d. Solution: Specifying dialects, regions, and variations that users are learning.

84. **H12: Value Alignment & Inclusion /** Problem: No translations– people can save their texts but there is no indication as to how that would be helpful in learning the language if they happen to forget what it means. / Severity: 3 / Found By: C
    a. Task: "Simple: View a memory in Chinese text"
    b. User reaction: Are there translations available?
    c. Rationale: It would be much more helpful to recall the context of the conversation if users struggle to understand the meaning after a while of not reading the text.
    d. Solution: When a user highlights a Memory, they can see a "translate" icon using an API.

85. **H12: Value Alignment & Inclusion** / **Severity: 3 / Found by: A**
    a. Task: Simple Task
    b. Description: There is no way to filter out memories that could be traumatic to the user such as texts about life changing events in the user's life (breakup, death, etc.)
    c. Rationale: Without a way to filter out memories, the presence of traumatic messages can trigger users and negatively affect their healing process and mental state
    d. Fix: Give users the option to filter out messages from certain people, during certain time periods, and via keywords

86. **H12: Value Alignment & Inclusion** / **Severity: 3 / Found by: A**
    a. Task: All
    b. Description: This UI is purely text based

  c. Rationale: Because this version of the UI does not include mixed media such as images, video, audio, it excludes those who speak sign language or those who use other mediums besides text to communicate

  d. Fix: Include mix media options such as audio, video, etc. to include a wider range of users

87. **H12 Value Alignment and Inclusion / Severity: 2 / Found by: B**

  a. Task: All Tasks

  b. Description: All titles and information related to the app itself are written in English without the ability to modify this setting

  c. Rationale: The app values enabling multilingual users to see messages in all languages they are familiar with, but users who may be more fluent in non-English languages might not be as able to benefit from its features

  d. Fix: Include an option to change the language of app text

[...create your numbered list of violations here]

3. Summary of Violations

Category	# Viol. (sev 0)	# Viol. (sev 1)	# Viol. (sev 2)	# Viol. (sev 3)	# Viol. (sev 4)	# Viol. (total)
H1: Visibility of Status	0	1	3	2	0	**6**
H2: Match Sys & World	0	0	1	4	1	**6**
H3: User Control	0	0	3	3	0	**6**
H4: Consistency & Standards	0	5	6	5	2	**18**
H5: Error Prevention	0	0	5	1	0	**6**
H6: Recognition not Recall	0	2	8	6	0	**16**
H7: Efficiency of Use	0	0	4	2	0	**6**
H8: Minimalist Design	0	0	4	2	0	**6**
H9: Help Users with Errors	0	0	0	1	1	**2**
H10: Help & Documentation	0	1	2	1	0	**4**
H11: Accessible	0	1	2	3	0	**6**
H12: Value Alignment & Inclusion	0	0	1	3	1	**5**
Total Violations by Severity	**0**	**10**	**39**	**33**	**5**	**87**

Note: check your answer for the green box by making sure the sum of the last column is equal to the sum of the last row (not including the green box)

4. Evaluation Statistics (in %)

Severity / Evaluator	Evaluator A Jaylene	Evaluator B Amrita	Evaluator C Defne	Evaluator D Daryl
Sev. 0 Ex: Eval A count / total sevs 0 in table #3	0/0 = 100%	0/0 = 100%	0/0 = 100%	0/0 = 100%
Sev. 1 Ex: Eval A count / total sevs 1 in table #3	1/10 = 10%	3/10 = 30%	3/10 = 30%	3/10 = 30%
Sev. 2 Ex: Eval A count / total sevs 2 in table #3	5/39 = 13%	17/39 = 44%	8/39 = 21%	9/39 = 23%
Sev. 3 Ex: Eval A count / total sevs 3 in table #3	6/33 = 18%	13/33 = 39%	8/33 = 24%	6/33 = 18%
Sev. 4 Ex: Eval A count / total sevs 4 in table #3	0/5 = 0%	0/5 = 0%	2/5 = 40%	3/5 = 60%
Total (sevs. 3 & 4) Ex: Eval A = sum(sev 3: sev 4 counts) / sum(sev 3: sev 4 in table #3)	6/38 = 16%	13/38 = 34%	10/38 = 26%	9/38 = 24%
Total (all severity levels) Ex: Eval A total sev count / total sevs (green cell) in table #3	12/87 = 14%	33/87 = 38%	21/87 = 24%	21/87 = 24%

*Note that the bottom rows are *not* calculated by adding the numbers above it.**

5. Summary Recommendations

UI and Design

- The UI is really clean, which is nice. We all loved the design.
- Some of the dark grey text (analytics, search) blends in with the dark background, you can consider making it lighter for **more contrast**.
- We really liked that you have data visualisations and would love to see:
  - **Labels** for key quantities and word totals in your usage statistics.
  - Timestamps and more context associated with messages.
  - **Axes/units** on graphs and statistics.
- Bottom toolbar: the functionalities could be made more clear with **text labels**.
- We caught inconsistencies in design that you can definitely very easily fix— hope H4 helps with that!

Task Flows & Minimising Errors

Task flows that should be a bit more clear:
- What do users do with "You and Katie want to practice more Chinese" information?
- What's the difference between "Saved" and "Memories"?
- How do users navigate to the Memories bar if none of the buttons navigating to it are labelled "Memories""?
- How do "Memories" get to the app in the first place? Do users select them? Making it more explicit how memories are chosen might make it easier for users to understand how your app works.
- What additional information do we get when clicking on a Memory other than the ability to save the message?
  - Does this action allow you to see the full form of a truncated message that includes ellipses in the Memories page? Does it link to a larger conversation snippet from which the message was taken from?

Avoiding errors & confusion:
- More back buttons: Clear exits out of pages like "Add Friend" and "Search".
- The ability to confirm before deleting, having an archive or a Recently Deleted.

Cultural Comments

Beyond heuristic violations, we thought the app should be a bit more culturally cognizant and more geared towards achieving language goals, as those reflect the values of the app. You could:
- Give users access to translations.
- Have an option to hear audio pronunciation.
- Specify dialect or geography.
- Consider making the main screen the **stats** screen so users are motivated to use their language and achieve their goals, since target users are multilingual people and/or 2nd+ generation Americans.
- Aim to be consistent in how you use these target languages. In the "Edit Goals" portion, they were referred to in English and in Latin script, whereas they were not in other parts of the app.

Severity Ratings

0 - not a usability problem
1 - cosmetic problem
2 - minor usability problem
3 - major usability problem; important to fix
4 - usability catastrophe; imperative to fix