Visual and Interaction Design Requirements

Version 0.1

Key Features

- Webapp + Alexa Skill
- Webapp only allows the Amazon Echo owner to manage task information
- Can not be used as a stand-alone app

Prepared By

Team Go!

Frontend Components

- Login / Sign up
  - Standard email password sign in. Use Firebase's authentication service
- Roommates tab
  - List View displaying current added housemates (Empty if none)
  - Add new housemate
  - Delete housemates
- Tasks tab
  - Assign tasks to roommates
- The mockups for these components can be found later in the document.

Backend Components

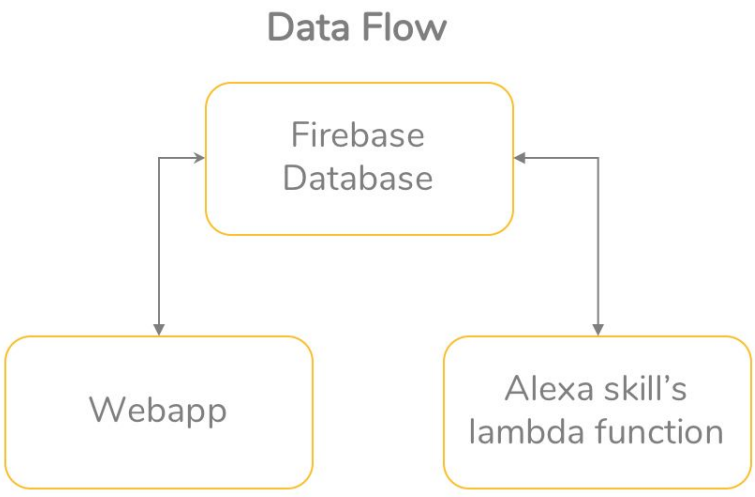


Figure 1: Data flow between different components of the app

- Use Firebase for user authentication; use Firebase's email & password authentication function.
- Write roommate and task assignment information to Firebase using user input from the webapp.
- Read Firebase database from the skill's lambda function and update the information as per the voice interaction model.
- Refer to *Figure 2* for Firebase database design

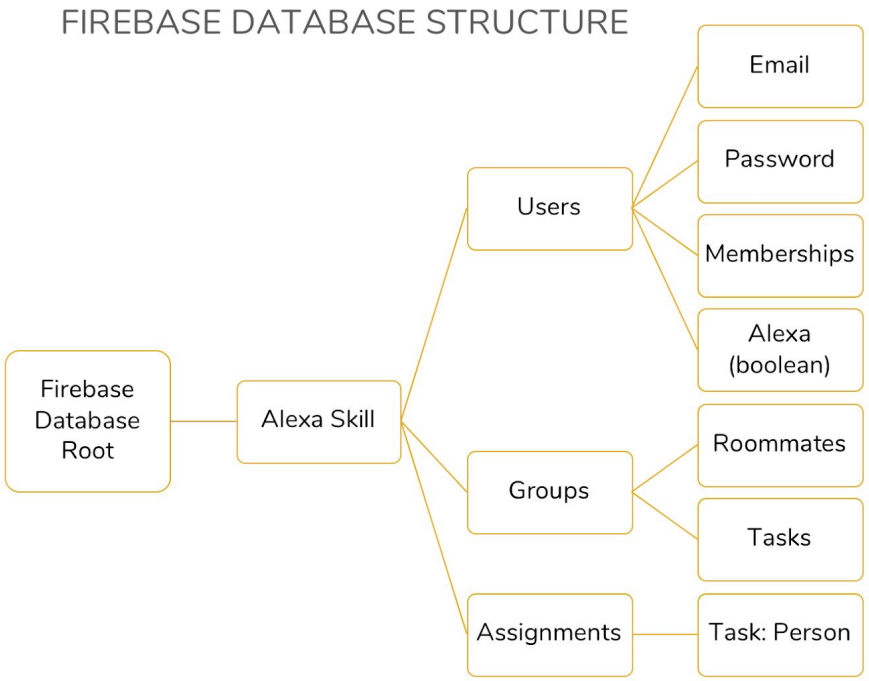


Figure 2: Firebase database structure to store user and task information

Alexa Skill Requirements

- Activation
    - Utterance: "Alexa, open o'hana"
    - Response: "Welcome to o'hana"
    - Backend: Use the Echo device ID to retrieve user and task information from Firebase database.
- Get tasks
    - Use case 1:
        - Utterance: "Alexa, what is the next task for <person's name> ?"
            - **BACK-END:** Recognize name and pull individual data from Firebase
        - Response: "<person's name>'s is assigned to <task>"

        - Backend: Branch into the assignments data, find the person with the given name and retrieve the task assigned to them.
    - Use case 2: If the user doesn't have any tasks assigned to them.
        - Response 3: "<person's name> does not have any tasks."
- Mark tasks as complete
    - Utterance: "Alexa, mark ____'s task as done"
    - Response: "Ok! I marked the task ___ as done. Would you like to know your next task?
    - Backend: Find and recognize task, then mark it as completed in the database. Rotate task to next person in list of users.
- Unregistered utterances
    - Response: "I'm sorry, I didn't understand"
    - If occurs more than 2 times
        - Utterance: "Would you like to know the available commands?"
        - If response is "Yes"
            - Utterance: "Try saying: What are the tasks assigned to Ethan?"
- Nice to have
    - Filter words flagged as inappropriate
    - Multiple ways to phrase a command

Version 2 (Planned for Future)

- Webapp as a stand-alone app; or can be used to complement the skill.
- All roommates will be able to login to the app and manage tasks.

Visual Design of the Webapp

*****Dimension percentage calculated using 1920 x 973 window*

Mobile percentage calculated using 720x1280 window

*aspect ratio below 406*925 is not supported*

app can be used for one household per account -- no matter who the account user, roommate list and task list will start empty

<u>Global Elements</u>

- Webapp background gradient: top left to bottom right -- #73C849 to # 373B44
- Font: Nunito (otherwise specified)
- Box shadows colors are #000000 unless specified
- Location is specified with left and top side of the object in a square form from left for both current object and target object
- Display name, task name, and roommate name is limited to 15 characters
- Unless specified, all color opacity is 100%
- Upper Bar (UB): Will stay fixed when scrolled (No upper bar in home page)
    - Bar Color: #595959
    - Bar Dimension: 100% Width 9.1% Height
    - Logo : non-clickable
        - .png file provided: “ohana_logo.png”
        - Location: Left side of the logo should be 3.3% away from x=0. Middle point of logo height should be aligned horizontally with middle point of UB height
    - User Info (hello [name]!)
        - “hello” and “!” Text: non-clickable
            - Font: Quicksand
            - Thickness: Medium
            - Size: 39% of UB height
            - Color: #FFFFFF
            - Location: x: 86% of width of W, y: middle height of UB height
        - Name is clickable and underlined, and is always lowercase
            - If clicked display logout pop-up (figure signout)
                - Dimension:
                - Width: 9% of W height
                - Height: 3% of W height
                - Inner box:
                - Height: 75% of the outer box height
                - Width: 80% of the outer box width
                - Stroke:
                - Color: #595959

            - 0.5% of W height
        - Box shadow:
            - X and Y: 2px
            - Blur: 5px
        - Font: Quicksand
        - Font size: 1.3% of W height
        - Font weight: 200
        - Color: #595959
    - Position: 1% W height below the name, right side of the box is always on the right side of the name
        - Font and inner box is in the center of the outer box
- Mobile
    - Use same ratio

Figure signout

0. Home Page (Figure 0)

- No UB
- slogan
    - Font weight: 200
    - Font color: #FFFFFF
    - “Welcome to”
        - Font size: 7% of W height
        - Gap between top of the website to top of slogan: 10% of W height
        - Gap between left of the W to left of slogan: 6% of W height
        - O’hana logo
            - Provided as “ohana_logo.png”
            - Height: 10% of W height
            - Width: 30% of W height

                - Horizontally aligned to “Welcome to” (as shown in figure 0)
                - Margin in between “to” and image is 1% of W height
        - “A reimagined”
            - Font size: 3.4% of W height
            - Font color: #FFFFFF
            - Gap between left of the W to left of slogan: 35% of W height
            - Top gap between “welcome…” and “a reimagined…”: 0%
        - “With 3 simple”
            - Font size, font color, top gap same as “a reimaged” part
            - Gap between left of the W to left of slogan: 55% of W height
            - “3”
                - Font size: 8% of W height
                - Font weight: 400
- Boxes with graphics
    - Horizontal gap between” 3 steps” and the boxes: 15% of W height
    - When a mouse hovers over each box, figure 0.1, 0.2, 0.3 are shown and closes if mouse if no other on the box.
        - Transition:
            - Top margin of the boxes between “3 steps”: 5 of W height
            - Height of the box will be 39% of w height
            - Timing
                - Margin transition: 1s
                - Height: 0.4s
                - Texts: 2s
    - Images provided
        - Centered horizontally and vertically
    - Box size:
        - Height: 26% of W height
        - Width: 35% of W height
        - Left and right margin: 1% of W height
    - Box shadow:
        - X and y shadow position: 3px
        - Blur: 8px
        - Color: #000000
    - Box edge roundness: 5% of w height
    - Font: #FFFFFF
    - Font size of descriptions (figure 0.1, 0.2, 0.3): 2% of w height
    - Font weight: 400
    - Font size of “*note”: 1.2% of W height
    - Font weight of “*note”: 200
    - Gap between image and description: 0% (image has the gap which will produce the figure 0.1, 0.2, 0.3)
    - Gap between description and “*notes”: 2% of W height

    - Add user -- the final image file will have “roommates” instead of “user” (figure 0.1)
        - Color: #2E765D
    - Add task (figure 0.2)
        - Color: #2E926F
    - Add alexa (figure 0.3)
        - Color: #4AA987
    - Gap between each images: base 2% of W height and max 12% of W height
- “Let’s get started”
    - Hovering over any part of the text underlines the whole text
        - Click of any part of the text directs the user to sign in page
    - Position:
        - Horizontal center of the website
        - Gap between bottom of image and the top of text: 15% of W height
    - Font:
        - Font weight: 200
        - Font size: 3% of W height
        - Sign in
            - Font weight: 400
- Mobile override for max aspect ratio 1019*887 (figure 0.4 & 0.4.1 -- layout reference only)
    - Slogan text:
        - All three slogans Horizontal center of the screen
        - “Welcome”
            - Font size: 6% of W height
        - “A reimagined” & “with 3”
            - Font size: 3% of W height
            - “3”
                - Font size: 7% of W height
    - Boxes with graphics
        - Centered Horizontally to the screen
        - Gap between boxes: 2.7% of W height
    - Transition (figure 0.4.1):
        - Width: 90% of box width
        - Height stays the same
        - Directions and note on the left of the graphics
            - Font size: 4% of website width
            - Horizontal center to the box it is located in
            - Gap between right of text to right of the box: 1% of website width
        - Margin 1s, width 0.2s, color 3s
    - “Let’s start”
        - Gap between bottom of the graphics to the text: 15% of website width
        - Gap between bottom of the text to the website bottom: 5% of website width

Figure 0

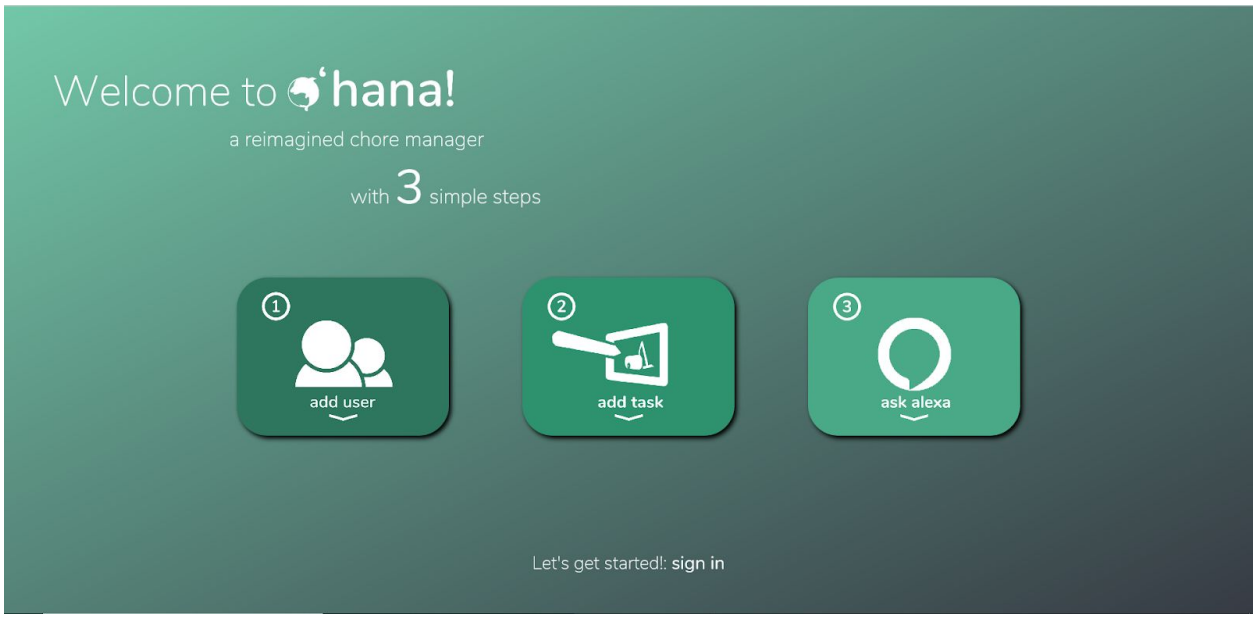


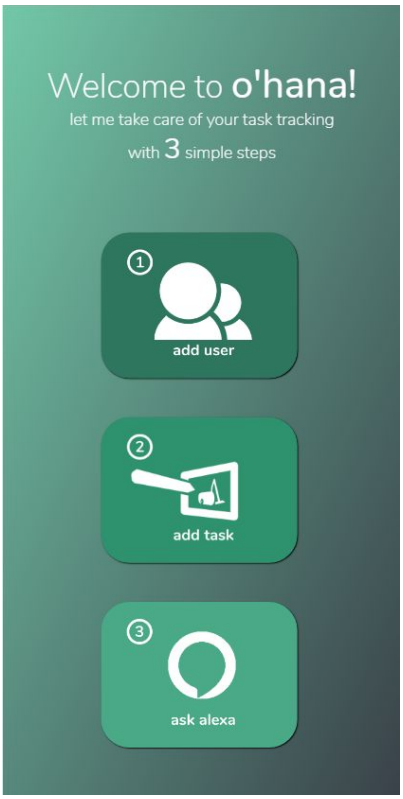
Figure 0.1

Figure 0.2

Figure 0.3

Figure 0.4 (layout reference only)

Figure 0.4.1 (layout reference only)



1. Log in / Sign up

- Logo in UB of the mockup should be only used as a reference for layout. For accurate representation of logo in UB, refer to figure 2.1. (LOGO ONLY)
- Global Elements within Log in/Sign up page (figure 1.1, 1.2)
    - Font Thickness: 200
    - “Sign in” & “sign up” slogan
        - Sign in Location: horizontal center, 30% of W height away from y = 0 (figure 1.1)
        - Sign up Location: horizontal center, 20% of W height away from y = 0 (figure 1.2)
        - Color: #FFFFFF
        - Font
            - Regular
                - Font size: Size: 3.4% of height of the W

            - Font weight: 200
        - Bolded (“sign in”, “sign up”, “amazon”)
            - Font size: Size: 5% of height of the W
            - Font weight: 400
- Green log in / sign up box (GB)
    - Dimension: 45% of W width, 34.5% of W height
    - Color: #595959
    - Rounded edge:
        - top left and bottom right: 2% of W height
        - top right and bottom left: 13% of W height
    - Box shadow
        - X and Y: 3px
        - Blur: 8px
        -
    - Location: horizontal and vertical center
    - Credential text:
        - Font-size: 2.7% of W height
        - Font weight: 200
        - No gap between text and white box
        - Left aligned with white box
- Log In/ sign up button
    - sign in/ sign up Box: When clicked (box and text in the box), proceed to roommate/task page (figure 2.1)
        - Dimension:
            - Width: 15% of W height
            - Height: 4% of W height
        - Location: Middle of the GB width, 3% of W height below “password” or “re-enter password” box
        - Text:
            - Color: #595959
            - Size: 3% of W height

            - Location: middle of width and height of white box
        - Log in / Sign Up text below the sign in/up box: When clicked, proceed to figure 1.2 from figure 1.1 or vice versa depending on which state the page is in
            - Text
                - Color: #FFFFFF
                - Size: 1.8% of W height
                - Only sign in/up text is Underlined
            - Location:
                - 5% of W height apart from Sign in Box (figure 1.2)
                - 7% of W height apart from Sign up Box (figure 1.1)
        - If there is any error such as invalid email, password, etc.,
            - Error message specified in figure 2.1.4.2 with wordings “invalid email address or wrong password”
            - Position: 1% of W height above GB

- 1.1 Sign In: Default stage
    - White Box below to username, password, and email credential (WBC)
        - Is a text entry box that accepts characters, numbers, and special characters
        - Input text will start at the left side of the box to right
        - Dimension: 80% of GB width, 4% of W height
        - Location:
            - Username Box: 0% below text, 10% of GB from left of GB
            - Gap between credential texts and top of the GB or white box above: 9% of GB height
- 1.2 Sign Up: 1.1 becomes 1.2 when Underlined Text below White Box is clicked
    - Once clicked, if there are no errors, proceed to 2.1 roommate page
    - Display name does accept special characters and numbers
    - WBC & Texts below WBC
        - See 1.1 Log in WBC specification, behaves in a same way

        - Gap between credential texts and top of the GB or white box above: 5% of GB height
        - Dimension:
            - Width: 45% of W height
            - Height: 50% of W height
    - Slogan
        - Gap between two slogan line: 0%
        - Lower sentence text:
            - Regular font:
                - Font size: 1.5% of W height
                - Font weight: 200
            - Bolded font (“Not” “Amazon”):
                - Font size: 1.8% of W height
                - Font weight: 400
- No mobile override

Figure 1.1

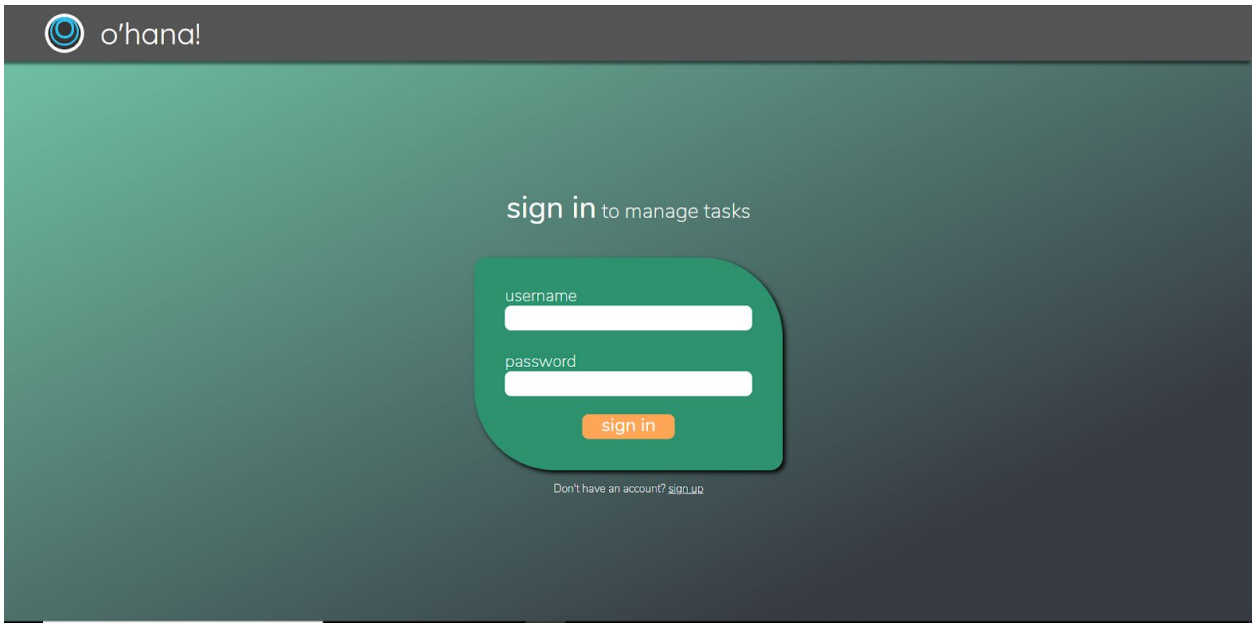
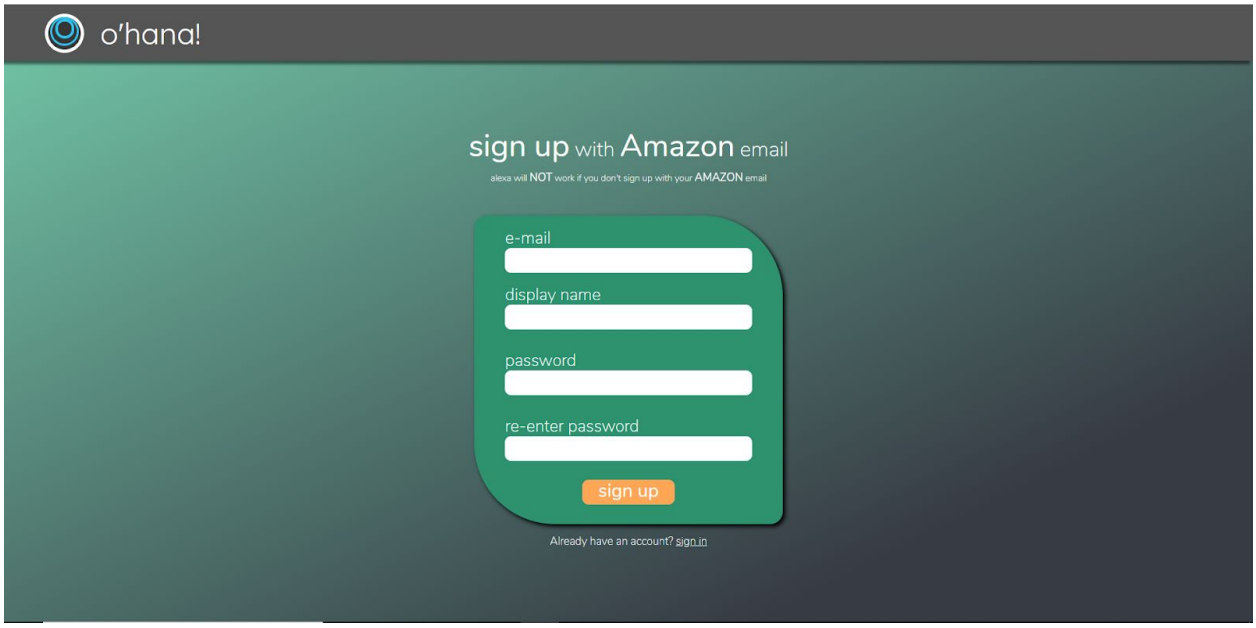


Figure 1.2



2. Tasks/roommates -- No new page when switching between two

- States change only when an icon that is grayed out on the left side (not including texts below them) (i.e. roommates icon in 2.1, tasks icon in 2.2) is clicked
- Changes to roommates and tasks are updated automatically
- State change does not have a transition
- Roommates/Tasks icon and UB will not move when scrolled
- Roommates/task icon
    - Black circle:
        - Location: X: 7% px Y: 25.1%px
        - Dimension: 21.8% of W width
        - Color: #595959
        - Effect: Drop Shadow
            - Radius: 1.5% of W height
            - Offset: 0px, 1.5% of W height
    - Skyblue circle

        - Location: Origin of black circle
        - Dimension: 20.3% of W width
        - Color: #31C4F3
    - Skyblue circle
        - Location: Origin of black circle
        - Dimension: 18.7% of W width
        - Color: #FFFFFF
    - Roommates/tasks text
        - Size: 61.6% of W height
        - Thickness: Black
        - Location; Middle of circle vertically, 1.2% gap between text and outer icon circle (orange background gap between Roommates And icon/ tasks and icon)
    - Roommates Icon graphic
        - Location: Origin of the white circle
        - Dimension: 64% of White Circle dimension
        - Image file provided: userpi.png
    - Tasks Icon graphic
        - Location: Middle of the graphic should be origin of the white circle
        - Dimension:
            - 100% of width of the innermost circle
        - Image file provided: taskpi.png
    - For tasks icon in 2.1 or roommates icon in 2.2
        - 66.7% size reduction on task and icon
        - 35% less shadow effect
        - Location: 61.4% W height
        - Semi-graying out
            - Color: #323232
            - Opacity: 39%
    - Roommate box and task box (Figure 2.1 & 2.2)

        - Once boxes start to overflow, only the boxes should be able to be scrolled
            - First box should always be stopped at the starting location when boxes are scrolled downwards
            - Last box should always be stopped at the bottom of the screen with gap of 3% of W height in between the bottom of the box and the bottom of the screen
        - Starting Location: 25% of W height from the top y=0
        - Gap between each boxes: 4% of W height
        - Box shadow:
            - X and Y: 3px
            - Blur: 8px
    - More option for roommate box and task box (figure 2.1.2)
        - Applies to roommate box in roommate tab and task box in task tab; excludes roommate box in task tab
        - Image file provided: more.png
        - Dimension: img height covers the whole height of the white portion of the box
        - Position: 1% of W height from the right of the white box
        - Once clicked, go to figure 2.1.3
        - Figure 2.1.3
            - Cover the white box with #EEEEEE above the existing box to add “glass” effect
            - The two icons are 80% of the box height and are separated by 3% of W height
            - Icon for edit and delete is be provided
                - Edit: once clicked bring up (replace the current box) the “type here” box with current data inside, should behave same as normal “type here”
                - Delete: delete the box and reformat the below boxes to match the margin specification between boxes
- 2.1 Roommates
    - “Who are the... & list users in or...” (final version should replace users to roommates)

        - Text:
            - Size: upper text: 41.1% of W height, lower text: 30.8% of W height
            - Thickness: Black
        - Location: The middle of the texts should be the middle of the icon
    - Roommate box
        - Dimension: 14.7% of W width, 5.2% of W height
        - Stroke: Center stroke with 2% of W height with rounded edge of 4% of W height
            - Color: #31C4F3
        - Color: #FFFFFF
        - Add circle:
            - Once clicked, the circle state changes to (Figure 2.1.4.1)
                -
            - Dimension: 4.2% of W height
            - Image file provided: add_circle.png
            - Location:
                - Horizontally center to name boxes
                - Gap between the roommate box and add button: 4% of W height
        - Roommate Box:
            - Does not respond to any inputs
            - Text: applies to task bar in section 2.2 too
                - Size: 60% of box height
                - Thickness: bold
                - Location: Middle of the box vertically and horizontally
            - “Type here” Box: This is the only box on the screen when there is no data on the roommates (figure 2.1.4.1)
                - Otherwise, this will only show up once the user clicks the “+” button on Figure 2.1 which will always be the bottom most element when there is at least one user/task in respective tabs

- Typeable; accepts inputs from left to right, inputed texts are 60% of box height like normal roommate/task box fonts
- Color: #BCBCBC
- Dimension: Same basic box size and stroke size with normal user box however,
    - Double the height of normal box for the typable overall height
    - White color is #FFFFFF
- Displayed Text:
    - “type here”
        - Size: 75% of the box height
        - Thickness: Bold
        - Color: #8B8B8B
    - “Add and cancel”
        - Vertically center of the white portion of the box
        - As a group, it should be horizontally center to the roommate box
        - Gap between the two is 4& of W height
        - Font size: 65% of box height
        - Cancel (if clicked return to original state) color: #FF4D4D
        - Thickness: bold
        - Add color (once clicked, replace the current name to newly inputted name):
            - When unavailable: 8D8D8D
            - When available (if input is valid): #31C4F3 (figure 2.1.4.3)
    - Error message (displayed if special character or number is detected in the input, should scan the input every time the user types in an input; if duplicate name is detected during scan, display “*name already taken”) (figure 2.1.4.2)

- Color: #FF4D4D
- Thickness: 200
- Vertically center of the box
- Gap between bottom of “type here” box and the error message: 3% of W height

- Once a user clicks on it, the “type here” text will disappear and the #BCBCBC Font color will be #595959

- 2.1.2 Edit and delete menu
  - Dimension: 5.9% of W width, 7.6% of W height
  - Color: #FFFFFF
  - Location: Right side should be on the left edge of the name box and in the middle of name box height vertically
  - Stroke: inside 0.5% of W height
    - Color: #31C4F3
  - Onclick edit, bring up text box with name already inputted
  - Onclick delete, remove the name box and reformat the box layout (boxes below the name will move up by 10% of W height)
- 2.2 Tasks
  - Texts next to the tab icon
    - Same requirements as 2.1 but font size is only upper text
  - Task box
    - Has same dimensions, fonts, and edit/delete/add as roomate name and type here box with modifications indicated below
    - Icons and behaviors are identical to name box on 2.1
      - Box covering both task and name box
        - Same stroke dimension as roommate box in 2.1
        - Dimension: covers both boxes as can be seen in figure 2.2. With gap of between 4% of W height
        - Position: Same starting height with roommate bar in section 2.1 roommates
          - Right side of the bar should be 21% of W height away from right side of the screen
    - Location: 57% of W width, same height as name box on 2.1

        - Roommate Box
            - Has same dimensions, and fonts as taskname and type here box
            - Location: 74% of W width, same height as Task box
            - Isosceles triangle: drop down menu; when clicked, display a dropdown menu on the existing roommates
                - Flips 180 degrees when drop down menu is activated
            - Drop down menu:
                - Default bootstrap dropdown (Figure 2.2.2 may not render the bootstrap dropdown correctly)
                - Names are 30% of font size apart from each other
                - Display all names in order separately as a drop down menu (2.2.2)
                - When clicked, replace the name on the box with the one that was clicked
        - “Type here” box and edit box (figure 2.2.3)
            - Look at 2.1 for specification
                - “Type here” box overridden specification
                    - “Cancel” and “add” should be horizontally center to task box and roommate box respectively
        - “Add” + button:
            - See 2.1 specification
            - Center of the grouping of task and roommate box

- Mobile override for max aspect ratio 1019*887 (figure 2.1.5 & 2.2.3)
    - Slogan text:
        - Completely hidden
    - Tabs
        - Grouping of the two tabs are center of the width of the website
        - Bigger tab (current tab that displays the state)
            - Height/weight: 18.6% of W height
            - Use proper ratio conversion for rest of the dimensions including “inactive” tab
            - Grouping of two tabs should be 51.7% of W width
                - Each circle should touch the “edge” of the grouping dimension
    - “Roommates” test for tab graphics

        - Same gap, reverted to bottom of the tab
    - Roommates and tasks bars
        - First box is 2.5% of W height below the “tasks” or “roommates”, which ever tab the screen is in
        - Each margin between two boxes is 4% of W height
        - Boxes are horizontally center to the screen
        - Dimension for a box (ex: roommate box)
            - Width: 40% of W width
            - Height: 3% of W height
            - Margin between task and roommate (figure 2.2.3)
                - 2% of W width

Figure 2.1

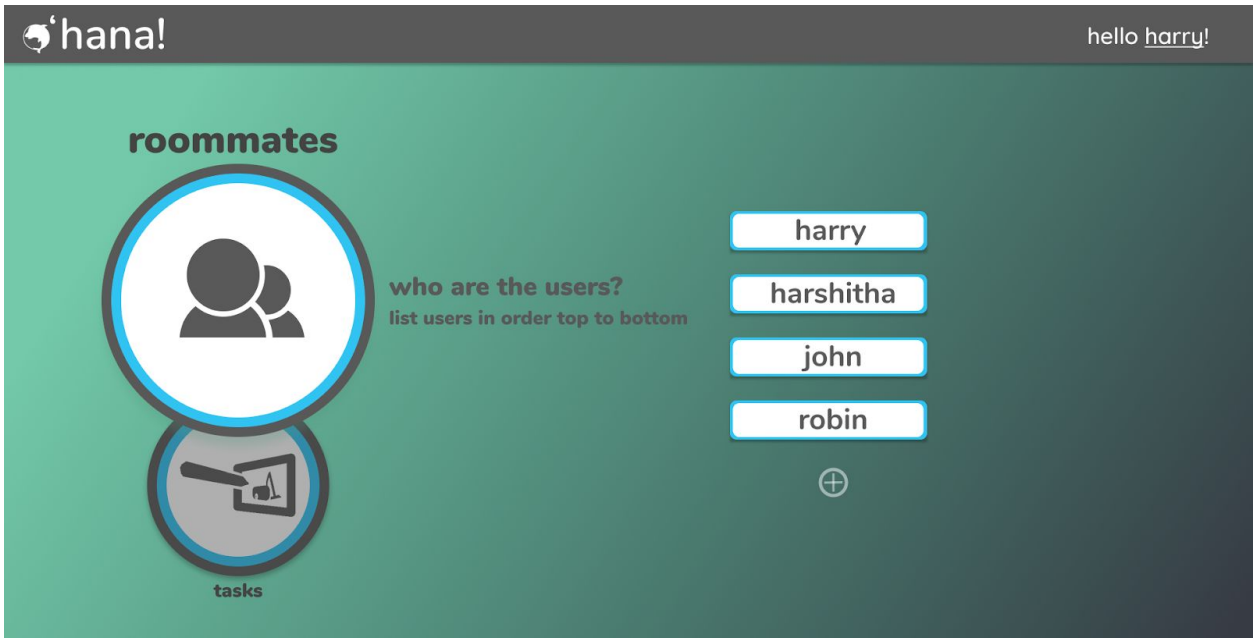


Figure 2.1.2 -- hover over to bring up “more button”

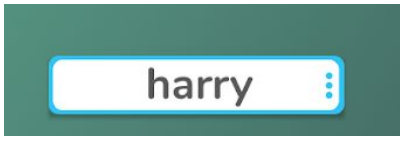
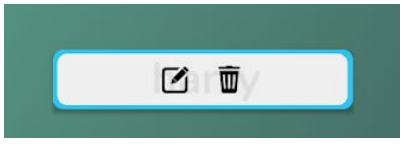


Figure 2.1.3



Flgure 2.1.4.1

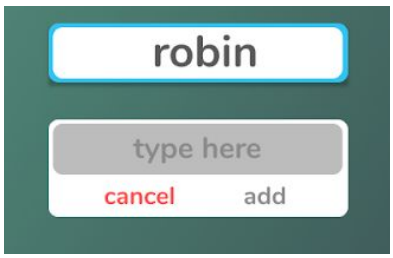


FIgure 2.1.4.2

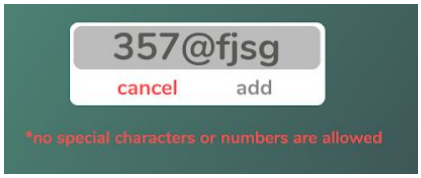


Figure 2.1.4.3

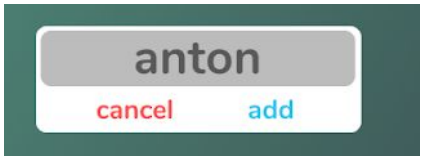


Figure 2.1.5

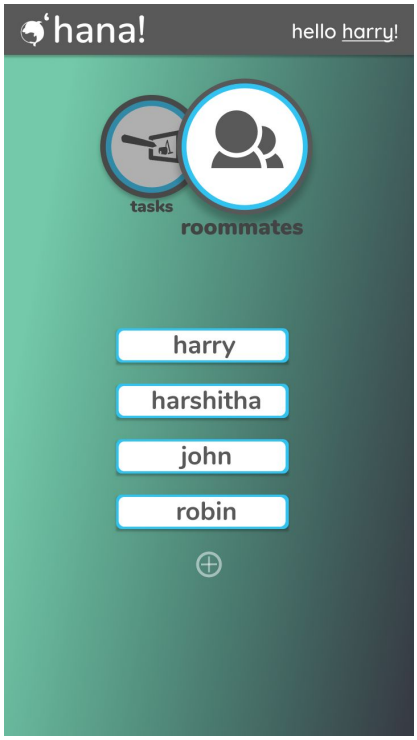


Figure 2.2

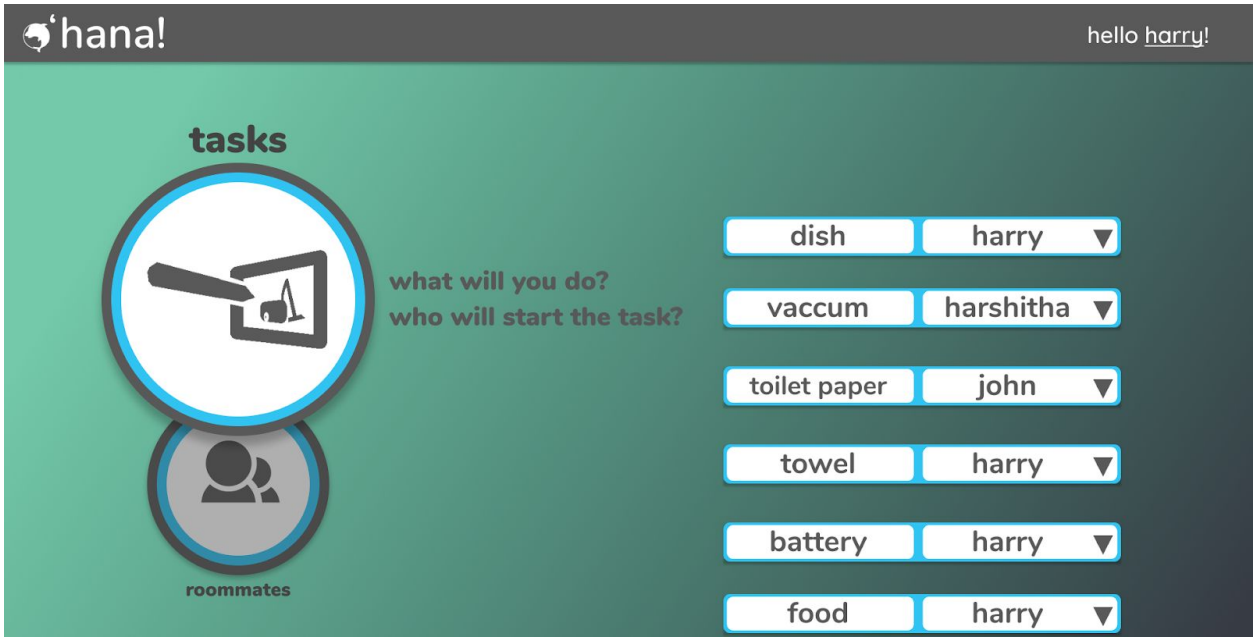
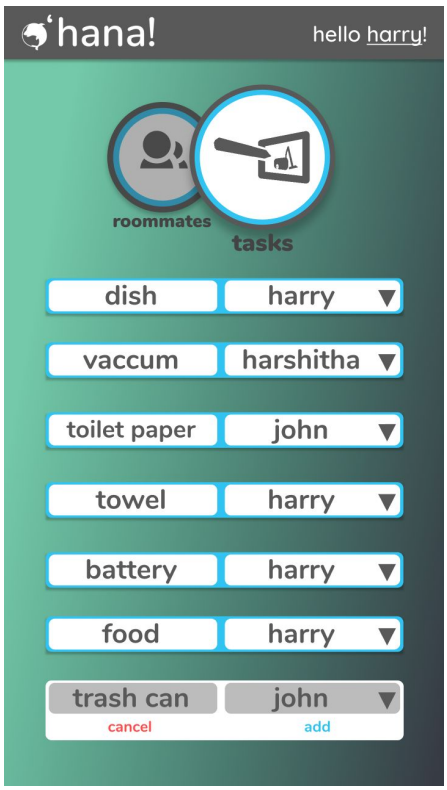


Figure 2.2.2

Figure 2.2.3



Alexa Skill:

- Voice command activation (Must-Have)
    - Utterance: “Alexa, open o’hana”
    - Response: “Welcome to o’hana”
- Read off tasks for given user when prompted (Must-Have)
    - Utterance: “Alexa, what is the next task for (USER NAME) ?”
        - **BACK-END:** Recognize name and pull **user** data from Firebase (Refer to database section)
    - Response: “(USER NAME)’s task is to (TASK)”
        - **BACK-END:** Pull tasklist from **user** data and return first task in the list in order received from database (Refer to database section)
- Mark a given task complete when prompted (Must-Have)
    - Utterance: “Alexa, mark (USER NAME)’s task as done”

        - Response: “Ok! I marked (USER NAME)’s task as done”
            - **BACK-END:** Save given user’s first task as done in database (Refer to database section)
- Unregistered responses (Must-Have)
    - Response: “I’m sorry, I didn’t understand”
        - If occurs more than 2 times consecutively,
            - Utterance: “Would you like to know the available commands?”
            - If response is “Yes” / “Sure”
                - Utterance: “You can ask for a users tasks with Alexa, what is the next task for me, or you can mark tasks as done with Alexa, mark my task as done”
- Filter inappropriate words (Nice-to-have)
- Integrate phonetic input on website for difficult to pronounce names (Nice-to-Have)
    - ex.) Name: Amanda Seyfried
    - Phonetic Input (Read by Alexa): Uh-MAN-duh SIGH-fred
- Perform User Research on common methods people ask for tasks and integrate into Voice Commands (Nice-to-have)
- If prompted a second time, (Nice-to-have)
    - Utterance: “What’s next? / What else? / What after?”
    - Response 2: “(USER NAME)’s next task is to (TASK)”
    - **BACK-END:** Pull tasklist from individual data and return second task in order received from database (continue for each task left in list if prompted) (Refer to database section)

Version 2:

- Reordering user order in a group
- Individual user ordering for each task