

Team HomeAide



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The Team

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The Problem

- Over 65 million Americans age 60+ (~20%)
- 23 million (35%) of these have at least one disability
- 1000's of AT (Assistive Technologies) devices



How will people age safely in their homes when they don't have a means of discovering these products?

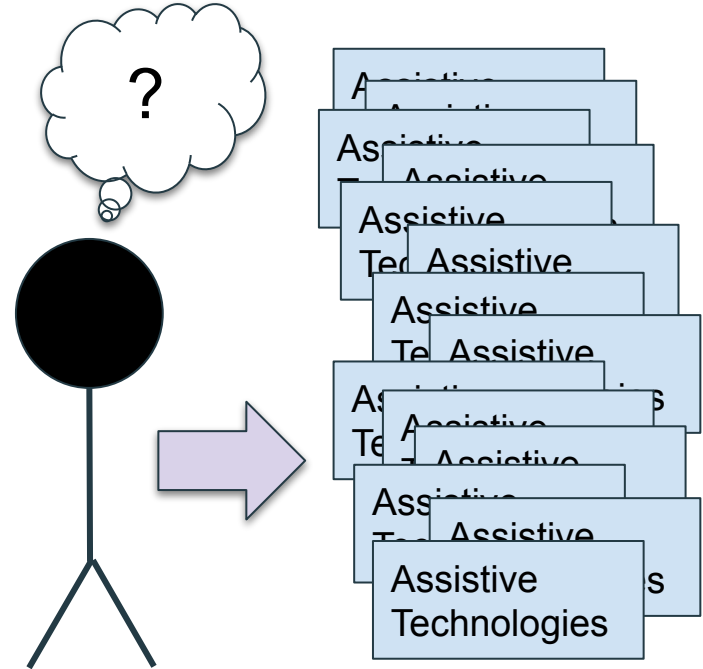
Institute for Human Development

- Enable people with disabilities
- Promote full inclusion
- Enhance lives

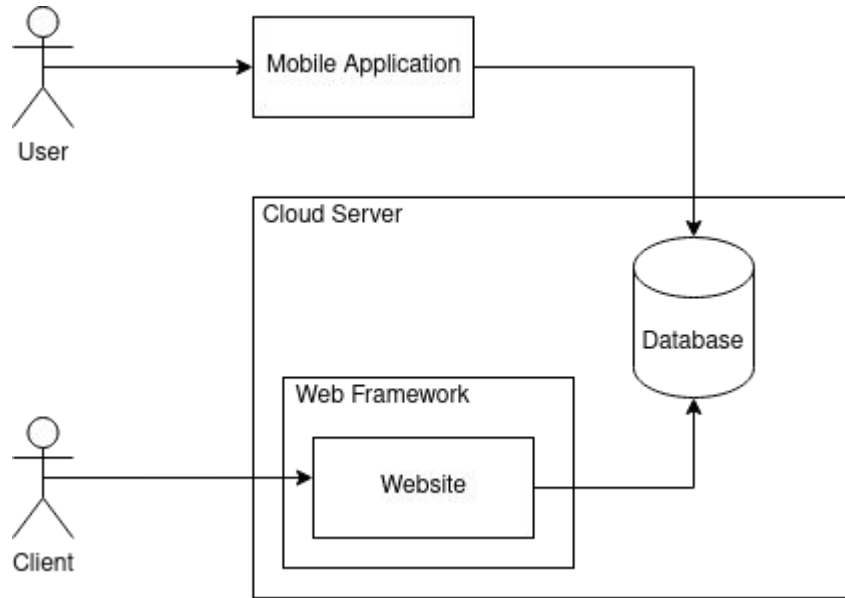


Opportunities

- So many assistive technologies exist
- Often a user needs a meeting with a real person
- Potential users are unaware



Solution Overview



- Mobile app for convenient use
- Mobile app gets its AT recommendations by using the database
- Client can add, remove, and edit AT items in the database

Requirements Acquisition

- Meetings
 - Weekly/Bi-Weekly meetings with client depending on week
- Development
 - Continued learning of chosen technologies
 - Changes made to requirements as needed
 - Continued research on HIPAA compliance
- Documents
 - Staying on track with documents

Key Requirements

- User needs to be able to provide their functional limitations
- User needs to be able to identify difficult areas in their home
- User information (limitations, profiles) needs to be stored in a database
- Application needs to be accessible
 - I.e., color blind mode, text-to-speech
- Application needs to recommend AT for limitations if necessary
- Clients need to be able to add and remove information from a database

Top-level Functional Requirements

- User needs to be able to provide their general limitations and trouble areas
- App needs to recommend AT devices
- Client needs to be able to manage the AT inventory of the database.
- Client needs to be able to send a survey to the users
- Client needs to be able to create/remove administrative accounts
- User needs to be able to create a user profile
- User will be able to recommend new AT devices
- App needs to allow user to save their favorite products they have viewed
- App needs to refer the user to local services

Top-level Performance Requirements

- App needs to sync to the database regularly
- The administrative website should require user authentication
- The app needs to accommodate color blindness, screen-readers, or text-speech/speech-to-text options
- The app will autosave the session in case the user leaves the app
- The app needs to be able to perform a query or display a timeout in less than 10 seconds

Environmental Constraints

- HIPPA compliance
 - Email
 - Medical information
 - Birth dates
 - Location

Expanding a requirement

- User is being asked to provide information on their difficulties
- Can be accomplished in one of two ways:
 - Can select from a list of general difficulties
 - This will be more specific to user limitations
 - Can select a room from a house diagram
 - This will be broad to a particular room and general tasks that are found in that room

Risks

Problem	Probability	Impact	Overall Risk	Mitigation
Data Loss in Database	Low	High	Medium	Periodic backups and recovery plan
Cloud Service Down	Low	High	Medium	Configure in more than one region
Data Compromised	Low	Medium	Medium	Authentication and encryption
App Gives Incorrect Recommendation	Medium	Low	Medium	Disclaimer and user feedback

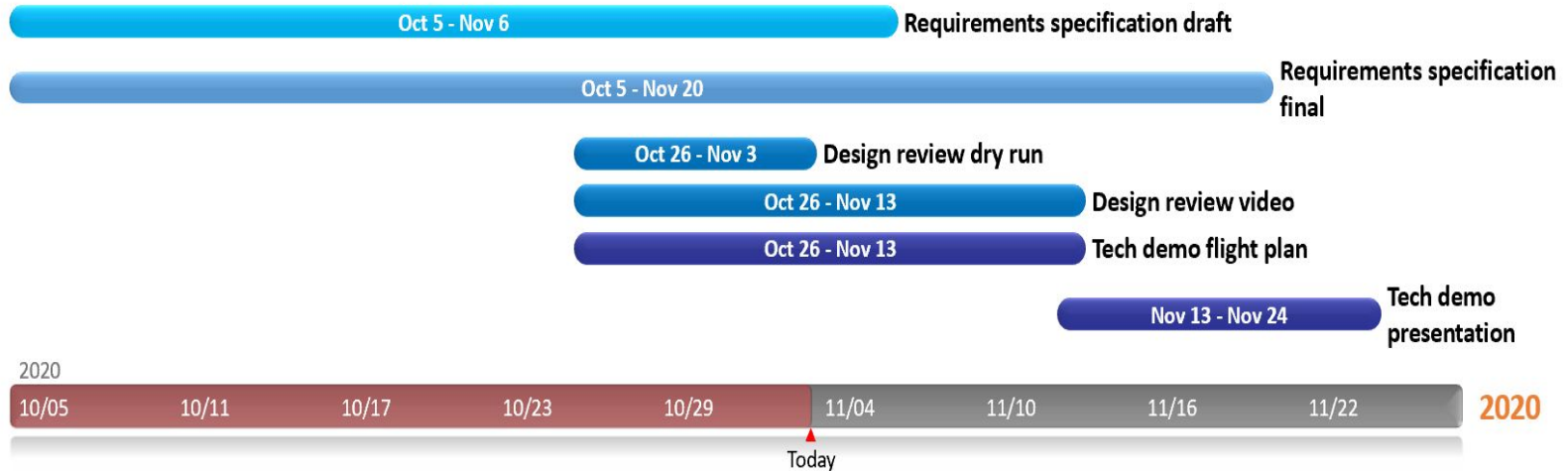
Feasibility

Challenge	Solution
Reach users on a wide variety of devices	Cross-platform mobile app
Keep a central inventory of assistive technologies	Use a database
Manage the central inventory of assistive technologies	Create website as frontend the database
Scalable to growth	Use a cloud server

For more information, refer to our Technological Feasibility document located at:

<https://ceias.nau.edu/capstone/projects/CS/2021/HomeAide-F20/doc/>

Schedule



Conclusion

- There is currently no efficient means of connecting people with the proper AT
- We will create an mobile app that will pair individuals with the AT they need
- Key topics:
 - Requirements acquisition
 - Development of requirements
 - Risks/Feasibility

