

Team HomeAide



Clients: Dr. Kelly Roberts, Jill Pleasant
Faculty Member: Fabio Santos

The Team

Seth Borkovec: Team Lead, Client Communications, Coder

Noah Baxter: Team Architect, Editor, Coder

Ethan Donnelly: Team Recorder, Release Manager, Coder

Courtney Richmond: Research Manager, Website Manager, Coder

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?

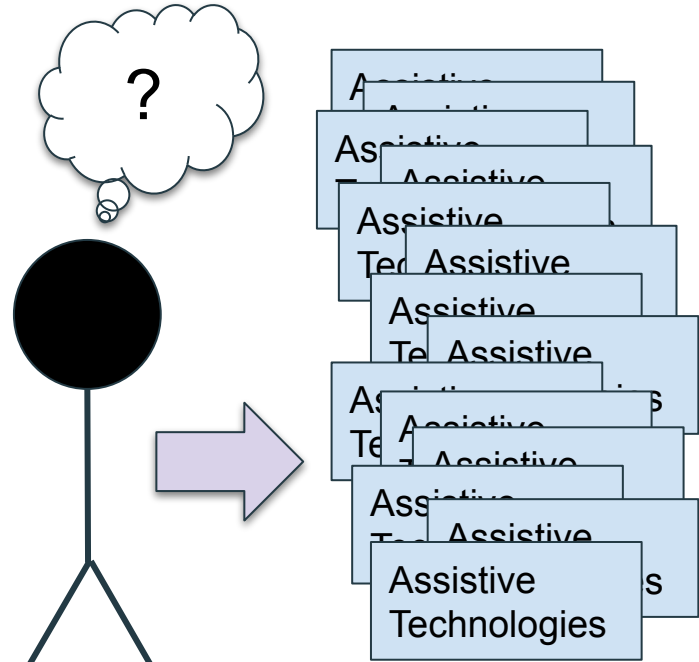
Institute for Human Development

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

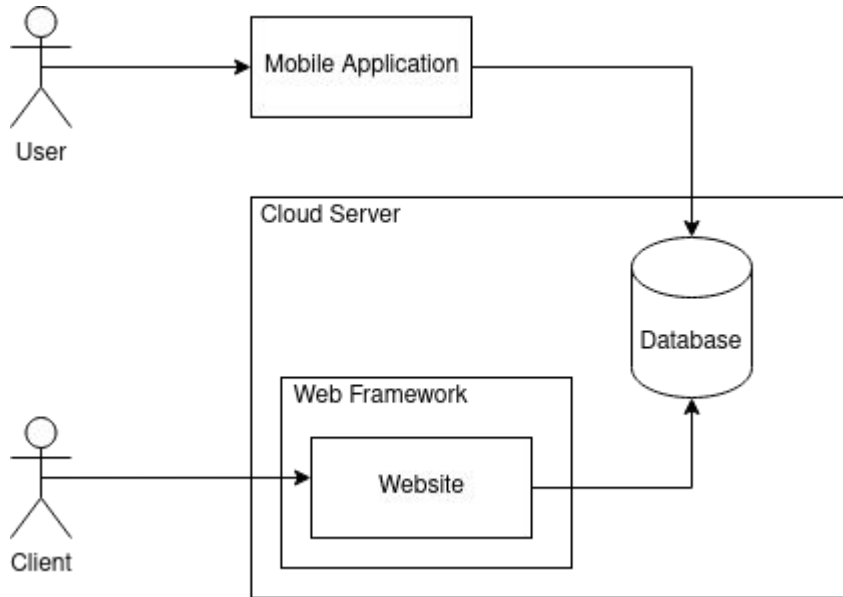


Opportunities

- 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

Exploding 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 |

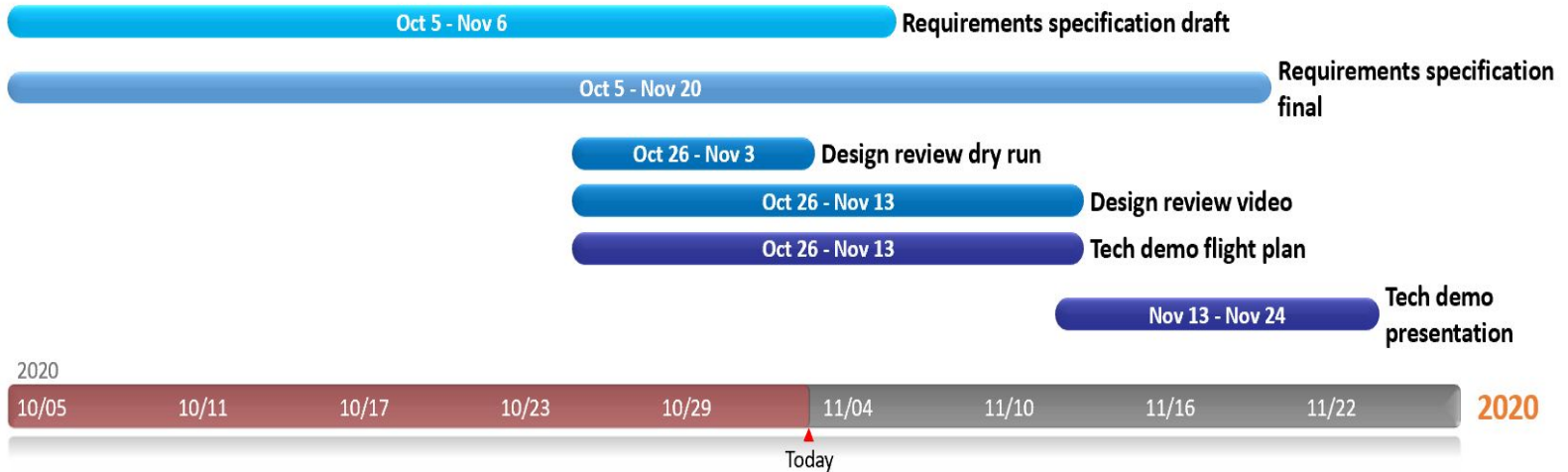
Feasibility

| 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

