A Better Screenreader

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Project Abstract

A Better Screenreader is an accessibility tool meant to make browsing the web quicker and easier for those with visual impairments. *A Better Screenreader* differs from normal screen reading software because it uses artificial intelligence and machine learning to pick out the important parts of web pages rather than superfluous information that someone with visual impairments shouldn't need to worry about.

A Better Screenreader is built to work with websites that don't conform to accessibility standards in order to make the web more accessible to all.

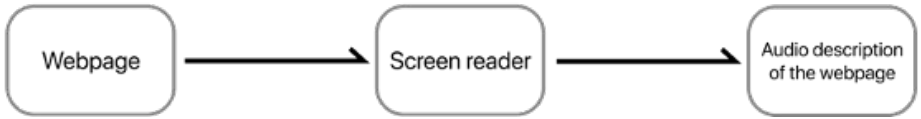
User Stories

As a user with vision disabilities...

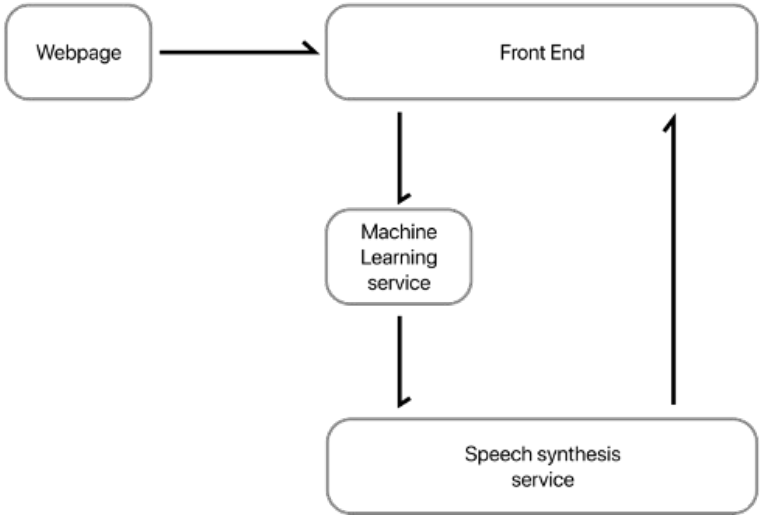
- I want to be able to have any website read to me in a clear and concise manner
- I want to be able to navigate any website using my voice or buttons
- I want to find important information quickly
- I want to be able to easily use the software

Design Diagrams

D0

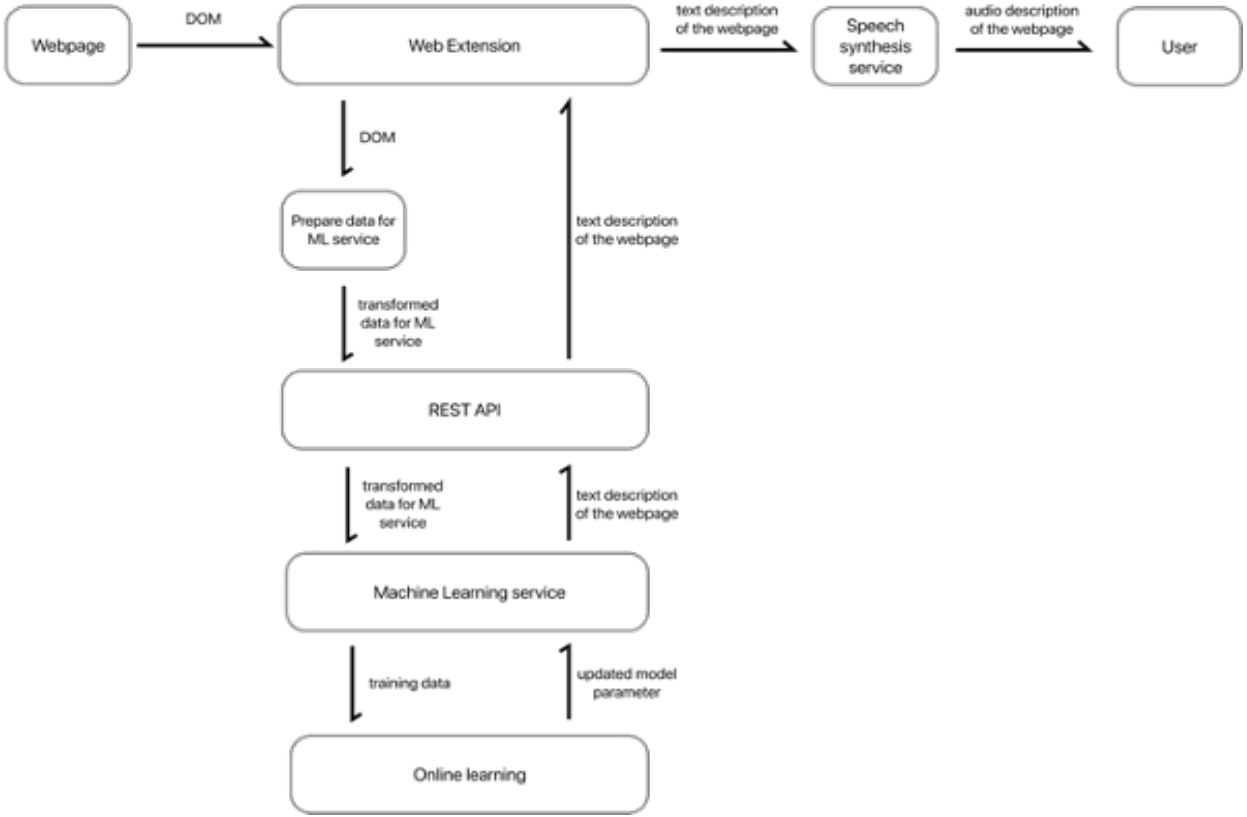


D1



Design Diagrams

D2



Major Project Constraints

We identified several topical areas that may constrain the possible solutions for our project.

- Economic Cost
  - AWS costs money and we will need it to train the ML model
- Time
  - Not really constricted by time
  - Training the ML model will probably take the longest amount of time
- Scope
  - We all agree on scope and understand the deadlines and components connected with the scope of the project
- Professional/Technical Expertise
  - Our team lacks in ML expertise, so it might take up longer to solve problems and debug if issues arise
- Ethical/ Legal
  - Our product directly impacts vision-impaired users and we will do product testing to ensure it is a positive experience
  - Might look into the legality behind disability assistive technology
  - Follow global internet guidelines such as GDPR and CCPA

Major Project Constraints

- Security
  - Our product could send potentially private information to our backend systems
  - User's private information should not be used in our learning model
- Social
  - Our project is based around creating a better screen reader that will directly benefit vision-impaired users
  - Our hope is to enhance the user's experience navigating the internet
- Environmental
  - Our product will require an internet browser
  - There will be no environmental impact
- Diversity and Cultural Impact
  - Our product will most likely only be available in English
  - Promoting diverse internet usage by allowing vision-impaired users to navigate the internet and give them experiences similar to able-bodied users

Review of Project Progress

- Project Description
- Milestones List
- Task Timeline
- Effort Matrix
- List of Major Constraints
- Design Diagrams

Expected Accomplishments

- Completion of our project plan
- Begin researching ML topics
- Begin preliminary development

Division of work

- Isiah
  - Web Extension,
- Maddie
  - Collecting test case, Testing, Web Extension
- Will
  - Machine Learning, REST API
- Sean
  - REST API, Machine Learning,

Expected Demo

- Web Extension
  - Able to process new web page
  - Read important information
  - Send to Machine Learning
- Machine Learning
  - Isolate most important info
  - Capable of updating parameters
- User Experience

Thank you