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Group #4
Bots/Voice Activation Systems

Automating Social Interaction with Bots And Voice Interaction

Business Objective:

We are creating a platform that allows users to interact with multiple social media or chat services in an automated fashion. They will be able to use voice interaction to control it and it will have speech-to-text to provide feedback to the users, with a focus on accessibility and workflow efficiency.

Technological Stack:

Twitter API
Heroku
Amazon Alexa for speech recognition
Amazon Polly for text-to-speech
Python
Python Speech recognition libraries where appropriate

Team Website:

<https://sites.google.com/view/comp680group4/home>

Sprint 1

Business Objective:

Enable users to interact with their Twitter account without opening their browser. We want to allow users to perform simple and repetitive tasks automatically or with little effort to multiple platforms.

User Stories:

- As a user who needs to quickly view or interact with social media, I want the application to be minimal, so that I only see the information I need at the moment.
 - Create a user-friendly application
 - Display only basic information
 - Allow the user to limit how many replies they want displayed
- As a user who is required to use social media and chat platforms for work, I want to be able to quickly retrieve and post information without disrupting my current activity.
 - If available, use an API such as the twitter API to be able to handle posting and reading more efficiently.
 - This will help provide the speed we need to post/send information
- As a user with multiple Twitter accounts, I want to be able to manage accounts for this application, ex. Adding a twitter account and then deleting the old one.
 - Have a management system for the users for their accounts
 - They should be able to
 - Add accounts
 - Delete accounts
 - Edit their accounts such as their password/username
- As a user with multiple accounts, I want to choose which accounts I want to post/receive messages to and from. Ex. post "hello world" to all my twitter accounts or only post it to my 2 personal accounts.
 - Have a good user interface that let's the user post/retrieve from multiple accounts or multiple platforms.
 - Have a main python file that takes care of which accounts we're going to be using while ignoring other accounts in order to minimize overhead
- As a user who keeps to an orderly routine, I want to be able to post something periodically or at a schedule Ex. "Hi everyone" every 10 minutes or "I can't believe I'm still up" at 4:19 AM
 - Allow the user to set a time frame of how often they want to post the message
 - They should also be able to set a time for when the bot should tweet the message or retrieve tweets
 - Set a timer so Heroku can fire the script at the time interval that the user schedules along with the message and the accounts

Sprint 2

Business Objective:

Provide visually-impaired users with a means to interact with social media and chat platforms using their voice and ears. People with low or no vision typically browse the web by using screen readers, however, screen readers struggle with information that they are unable to interpret, such as malformed HTML, and screen readers cannot be used to interact with the information on a page other than simply reading it. Visually impaired people using our platform will be able to call a wide variety of functions related to browsing Twitter, and will not need to fully rely on a screen-reader to interpret information correctly on those services.

User Stories:

- As a visually impaired user, I want to be able to interact with others on Twitter with my voice.
 - The user must be able to access alt text on images, if there is any.
 - When a Tweet or message containing an image is encountered, retrieve its associated alt text.
 - Pass that alt-text to a text-to-speech API.
 - Integrate voice interaction to our application from our previous sprint
 - Use the Alexa Skills Kit to take voice commands and transform them into commands that call Heroku workers.
 - We could also use a python library for voice recognition, if more appropriate
- As a user for whom reading text on a screen is difficult or impossible, I want to be able to use my hearing to interact on social media and chat platforms.
 - All incoming data from the API shall be transferred to a speech-to-text subsystem.
 - Superfluous data should be parsed out so that only the essential information that the user requested remains.
- As a user who wishes to use a voice-controlled system for convenience, I want to be able to tweet and message people without needing to open my browser or smartphone app.
 - The system will recognize a well-documented set of commands that can be easily remembered.
 - The system will alert the user when a command has been issued and carried out successfully.
 - It will play a gentle sound, for instance, to let a user know that their task is complete.
 - If the speech-recognition subsystem fails to identify a command given by a user, it will ask the user to try again.