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What did you accomplish? (what are your key individual contributions to the team's progress)

- My main contributions this sprint were focused on implementing spotify authentication and building foundational voice command functionalities. I successfully integrated spotify's OAuth 2.0 authentication, allowing us to retrieve and display user data, including their display name, email, and playlists. This feature provides a personalized experience and sets the groundwork for voice commands tied to playlists. I also developed one of the two sample python programs for voice recognition, the one that continuously listens with real time text to speech feedback. This prototype helps establish the basic framework for future voice based interactions within the app.

What challenges did you encounter? (any individual roadblocks or difficulties, and how they were addressed)

- A few challenges came up during this sprint. In the spotify authentication process, managing the token refresh was initially difficult, as tokens expire periodically, disrupting the user experience. I resolved this by setting up an automatic refresh system that maintains session continuity without user interruption. In the speech to text program, continuous listening was resource intensive, so I optimized it to balance responsiveness and performance.

What did you learn? (Reflect on any new skills, tools, or insights that you gained)

- This sprint taught me a lot about using OAuth for secure authentication and managing access tokens effectively, which will be useful in future app development projects. I also became more familiar with python's SpeechRecognition library and TTS functionalities. Experimenting with voice recognition gave me valuable insights into handling user input with minimal lag, and I learned how challenging it can be to manage system resources

effectively when continuous listening is involved. These experiences gave me a deeper understanding of how to design and optimize voice based applications.

What could have been improved? (Suggest areas where you could improve your own work, or the team's process in the next sprint)

- One area for improvement would be to enhance our testing process by conducting more thorough tests in varied real world environments, especially for the voice command features. This could help us better understand and address issues with background noise or false activations. On a personal level, I could spend more time refining the voice detection logic and experimenting with noise cancellation solutions to improve accuracy.