ECE 4180 Final Design Project Proposal
GTA Approval required– One Form per Team

Approved by GTA (Anastasiia Kotova): 
Team Members (from 2 to 4) List Sections and Names:

Jimin Hwang Section B

Timothy Samuel Ninan Section B

Ignatius Ali Alamsyah Djaynurdin Section B

Brief Description of Design Project:

The proposed project involves the integration of a Raspberry Pi with the Spotify API to create a device capable of identifying songs being played and displaying relevant information such as lyrics, artist information, and cover art. Using audio recognition technology, the Raspberry Pi will listen to ambient sound and utilize the Spotify API to match the audio fingerprint to its extensive database of songs. Once identified, the device will fetch and display the song's lyrics, artist biography, album cover, and additional information on a connected display.

List any closely related projects (URLs) and describe how your project will be different or improved.

https://www.youtube.com/watch?v=6i8kzqvh94E&ab_channel=RyanWard
https://www.youtube.com/watch?v=SWiPIBWvgIU&ab_channel=Makeitforless
https://www.youtube.com/watch?v=uQYIAYa27ds&ab_channel=RyanWard
https://yasoob.me/posts/spotify-synced-and-translated-lyrics-display/

Compared to these projects, our project will go a step further providing the user with the lyrics displayed.

If you need any parts or software not available in the lab or in your parts kit, what is your plan to obtain the parts quickly (within 10 days)? – With the current virus issues, I would recommend using only what is already available in the lab this term, since ordering and shipping may be disrupted.

Raspberry Pi 4 or 5
Microphone for Pi
3” or Above LCD Display for Pi or connect it into a desktop monitor

All of these should be available in the lab.