

SE 101 Project Proposal

Project Idea

- iTunes/Spotify music remote control
 - Automatically detects which application is running
- Control play/pause/shuffle/repeat/skip
- Volume control
- Display current playback details (artist, song, album, played/paused, play bar time data)

Software Components

- Pages for displaying song data
- Bash script for iTunes/Spotify control with serial I/O
- Printing to OLED screen
- Shake detection for shuffle
- Button detection for play/pause/skip
- Switch detection for repeat on/off
- Potentiometer detection for volume control

Hardware Components

- Tiva Board
- Orbit Booster Pack
 - Potentiometer for volume control/song scrubbing
 - Buttons for playback control
 - Switch for repeat on/off
 - Accelerometer shake for shuffle
 - OLED display to display current playback details
 - LEDs as song visualizer

Anticipated Challenges

- Since neither of us have worked with Bash, learning might be challenging
- Finding a method to communicate with Spotify/iTunes through the Tiva environment
 - Method to play/pause, skip, shuffle, skip and find the time data for the play bar
- Serial communication through bash script to Tiva board
- Shake detection algorithm