Breadboard Flip 4

Group Members:

- Gianni Guadagno (Guada028@umn.edu)
- Brock Bye (bye00035@umn.edu)
- Andrew Echlin (echli002@umn.edu)

Problem: Me and my friends are curious about which songs we listen to the most when we are spending time together.

Solution: So, we decided to convert our favorite songs into a device that tracks how many times we play it and updates this number to the cloud. Our plan is to upload our favorite 8 bit songs into our code and each song will represent a button on our breadboard. Each time we press a button on the breadboard, it will play the specified song through a speaker system. In addition, we have an excel sheet tracking how many times the song is played. Each session starts with pushing the on/off button and will start a new counter for each song being played in the excel sheet. When each song is being played we plan on having an LCD display show which song is being played at the time to display for people who do not know the songs. While our session is ongoing, our device will have multiple RGB LEDs playing to make sure we don't lose our device. Finally, when we are done playing music, we turn off the device by pushing on the on/off button. The LCD display will tell us the session is over and we will have an email sent to Gianni's email telling us which song was the favorite from that session.

Sensors and Actuators:

- 6x Push buttons (Changes Song on device)
- 1x Push Buttons (Activates/deactivates Audio)
- 5x Speakers (Plays audio set by buttons)
- 20x RGB LEDS (Light up randomly)
- LCD display (Show what song is being played, and displays when session is over)

Cloud Connectivity:

- 8 bit songs
    - Inputs songs from the internet
- Excel spreadsheet
    - Outputs a table updated constantly with each song played
- Email sent once off button is pushed
    - Includes most played song