Spec Doc-Aries
(Music Controlled LEDs)

Team:

- Somil
- Akriti
- Dev
- Ravi
- Ayan

Summary:

We plan to make a 2-Dimensional 5x5 Music Controlled LED Circuit. Our objective is to programme the circuit for two incoming inputs:

1. Intensity Input
2. Frequency Input

We are using both these input cases we wish to make a LED Square that responds accordingly.

Road Map:

- Collection of data sets:
    - Due to the lack of physical sound sensors, we collected raw Data using the Arduino Science Journal. This involved recording 25 different songs and measuring their pitch and intensity.
    - Next, we analysed all those data sets and tried to figure out the values that we would use as the test cases for the incoming data in the circuit.

  Click here to access our data sets.

- Working on the Code:
    - We plan to write the code in such a way that the Intensity Input governs the row-wise switching on of the LEDs, whereas the frequency input governs the column-wise switching on of the LEDs.
    - The code will be written in Arduino IDE and then be included in the Circuit using the Arduino Uno Board.

- Circuit Simulation:
    - For designing and simulating the circuit, we will be using the Tinkercad Circuit Simulator.
    - We will be making a 5x5 LED square on a breadboard and try to test our circuit's response to our code.
    - Challenge: Getting the sound sensor inputs as there are no simulators available to facilitate the same.

After repeated Testing and improvements we hope to make a smooth-running project that is both electronically efficient and visually attractive.