Milestone Report

Original Milestone

Milestone wise schedule:

1. Design pedal block
    - Generate a rough blueprint of the pedal block by taking measurements of the pedal board setup
    - Create a 3D model for this in Solidworks
2. 3D printing
    - Print the 3D model generated in Solidworks.
    - This process will have to be repeated (correcting errors each time) until we get the perfect fit for the pedal board
3. Design of servo motor with rod
    - Design a mechanism to connect the servo motor shaft to the knobs on the pedal
4. Raspberry Pi to control the servo motors
    - Program and write efficient code in order to control the servo motor
    - Initially we will try to control the servo using command line interface
    - However, later the servos will be controlled using a an application which runs on PC or cellphone
5. Fixing knobs to motor and final product
    - Consolidate all components into the final hardware setup
6. Software application
    - Develop computer or mobile application using Android Studio
    - The application should have basic GUI to tune the pedalboard and create different presets
7. Testing and corrections
    - Test and evaluate the final product in a real world setting
    - Make improvements according to feedback

New Milestones:

Reason for the new milestones:

We are changing the milestones which we decided initially. None of us have any mechanical design experience and hence we decided to move from the mechanical design to the creation of the application and the Raspberry Pi setup and the combination of the two (i.e. interfacing).

Completed Milestones:

1. **Raspberry Pi to control the servo motors (Sneh and Hitesh)**

- Program and write efficient code in order to control the servo motor
- Initially we will try to control the servo using command line interface
- However, later the servos will be controlled using an application which runs on PC or cellphone

Grades -

Sneh -A

Hitesh- A

2.Software application (Ronnie and Siva)

- Develop a computer or mobile application using MIT App developer
- The application should have basic GUI to tune the pedalboard and create different presets

Grades -

Ronnie- A

Siva - A

3. Interfacing Application with RPi setup (Siva, Sneh, Hitesh)

- Combine the Rpi setup with the application .
- Make sure the bluetooth and the program autorun the entire time on the Rpi
- Automatically pair the RPi with the user's phone without needing to pair through Rpi.

Grades-

Siva, Sneh, Hitesh - A

Video demonstrating all the completed milestones: https://youtu.be/Of__ULfJio8

Future Milestones:

4. Converting MIT app into Android Studio app (Ronnie)

- Converting the MIT app into the Android Studio app
- To make it more uniform and professional

  Grades -

  If completed by June 5th - A

  Otherwise - A-

Note : This is for making the entire product more professional rather than the working of the product , which is why we decided that there can be more time for this.

5. Design of the block, knobs and pedals (All of us)

- Since Solidworks is a difficult software to work with for amateurs we have decided to move towards Google Sketchup.
- We are merging the design phase together, and not keeping it separate like the old milestones.
- Since we have completed the electronic and the software aspect we decided that all of us will work on this.

  Grade -

  If completed by May 25th - A for all of us

  Else - A- for all of us

6. 3D printing of design (All of us)

- 3D printing of all the designs.

  Grade -

  If completed by June 6th - A for all of us

  Else - B+ for all us

7. Combining mechanical setup , RPi and Application (All of us)

- Combine all three components
- Test them (by asking Peter as the tester)

  Grade

  If completed by June 6th - A for all of us

Else - B+ for all us

8. Documentation, testing and video (All of us)

- Test the final product and write a report
- Make a video of the project

  Grade

  If completed by June 12th - A for all of us

  Else - B+ for all us