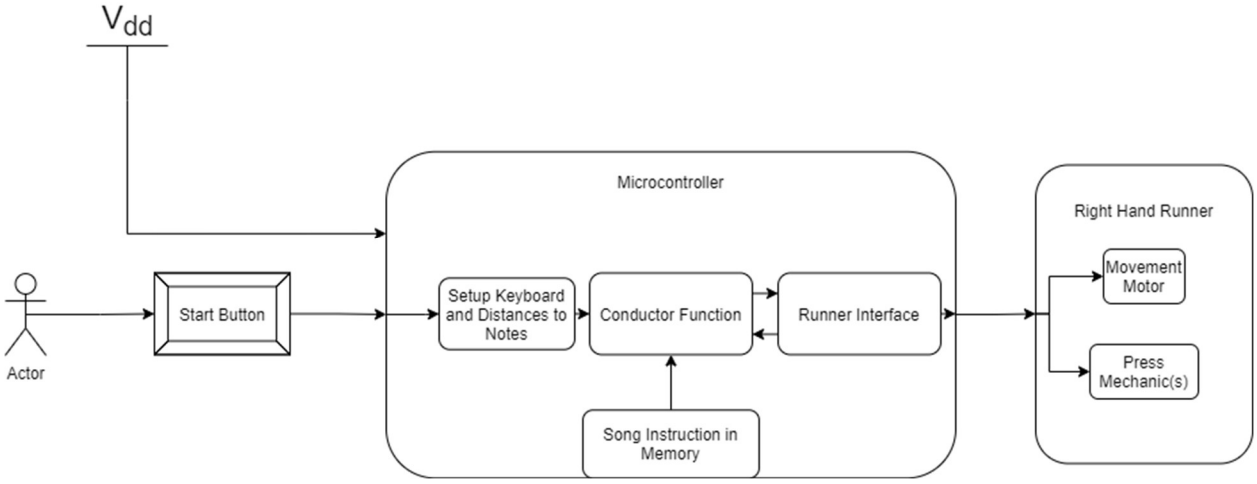
The Travelling Musician Senior Project

About:

The project at a minimal is to play the piano a note at a time. The objective is to create a piano safe attachable robot that can play a song by pressing each note one at a time in a timely manner. Movement across the keyboard will likely be enabled by a type of rail powered by a motor. Upon start it will first map the keyboard and associate distances to each note, then instruct the runner interface to go to location and activate the press mechanic (not yet defined yet). For the design of the system, there will be an attempt to apply the robot to any type of keyboard with differing number of keys: 32 – 88 keys. Depending on the future unforeseen restrictions or time, a more intuitive way of adding songs to play may be added instead of keeping it in memory.

System Block Diagram:



Possible Parts:

Part	Part Cost	Manufacture ID
Arduino UNO	$20.12	A000066
Motor	$3.28	M1N10FB11G
Button	$1.00	54-700-R
Wood	Vary	-
Phone Charger (5V Source) Or 5V Battery	Vary	-

Deadlines:

June 25: Have a CAD implementation of the base that will hold all the parts and attach to the piano.

July 9: Have a final tested base CAD design.

July 23: Design and prototype the “runner” and it’s pressing mechanic.

August 6: Have a final tested runner CAD design.

August 13: Setup / fit Arduino to base and connect runner to Arduino.

August 27: Code “keyboard setup” module and test effectiveness of moving across and mapping the piano.

September 3: Catch up for any unforeseen issues / roadblocks.

September 17: Break unless behind.

September 24: Code the conductor and test with one note. Debug any issues with hardware and software.

October 1: Test with two notes near and far from each other to test coordination of the system and debug if needed.

October 15: Full system test with different pianos and debug.

November 26: Implement another way to add songs or other features only if on schedule.

November 26: Product Finish.

December 10: Senior Project Paper.