

Robotics Final Project

The Piano Robot

Objective

Our passion is music, Franco plays the piano, Roberto the bass, and David the guitar.

We listen to it everyday and enjoy every second.

So we decided to include it in our final project. That's how the piano robot came to life.

Assembly

In short the robot is wood and motors. There is one stepper moving a band to create the horizontal movement of the hand, and five servos that act as the fingers. The control for the servos is simple as it is only press, delay and release.

Programming

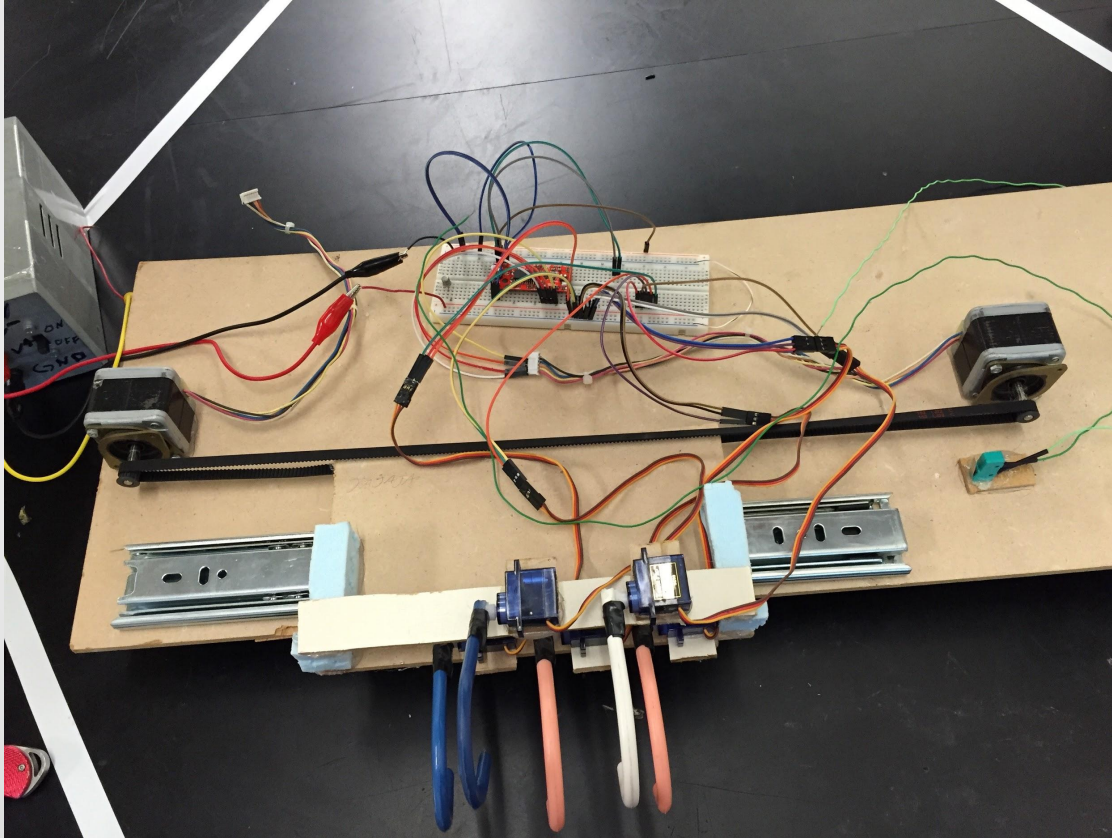
The first task for the robot is to find its reference so that the finger to the left plays a C.

For this we installed a limit switch, so the robot only moves left until it finds it, then it is ready to begin playing.

Programming

After we have our global reference frame, the robot now knows how much steps to move to reach each note. Then, after having the correct positioning, it can start moving its fingers and start its music.

The robot:



The songs:

- + Black Sabbath - Iron Man.
- + Beethoven - 9th Symphony.
- + “Stay with Me”

Videos