Introduction

My senior project is to design a unique way to display images, clock, or text in family homes by using metallic substance and magnets. It is interactive, modern, and attractive.

Project Details

- How it works
    - The project will be a matrix of neodymium magnets that will slide back and forth for each cell. On each row, it will have a solenoid, stepper and limit switch. The limit switch will trigger if the stepper moved the solenoid at the end of the row, the stepper will move the solenoid from left to right, and the solenoid will push and pull each magnet on the corresponding point. Thus, the magnet will hold position of the metallic substance. This can display simple images, clocks, and text. The motion sensor will detect if there is a person in front it will display the current time. For the Bluetooth, Dharti's project will send an alert to my project and display it.
- Parts list:
    - Bundle of neodymium magnets
    - Bundle of micro solenoids
    - Bundle of steppers
    - Bundle of limit switches
    - Atmega 1284
    - Arduino/Raspberry Pi
    - Bundle of Shift registers
    - Ferrofluid (metallic substance)
    - Bluetooth – this will receive alerts from Dharti's senior projects and display the alert.
    - Motion sensor – to detect if it someone is in front of the display

Weekly Plan

- Week 1 – Brainstorming, design planning, and ordering parts
- Week 2 - Should have gotten most of the parts and just test them and design plan
- Week 3 – Test the steppers and design plan
- Week 4 – test the solenoids and limit switches
- Week 5 – calibration, troubling shooting, replan design plan
- Week 6 - More test, calibrations
- Week 7- Prototyping or troubling shooting
- Week 8- Prototyping, debugging, calibrations
- Week 9- Finishing up the project.