

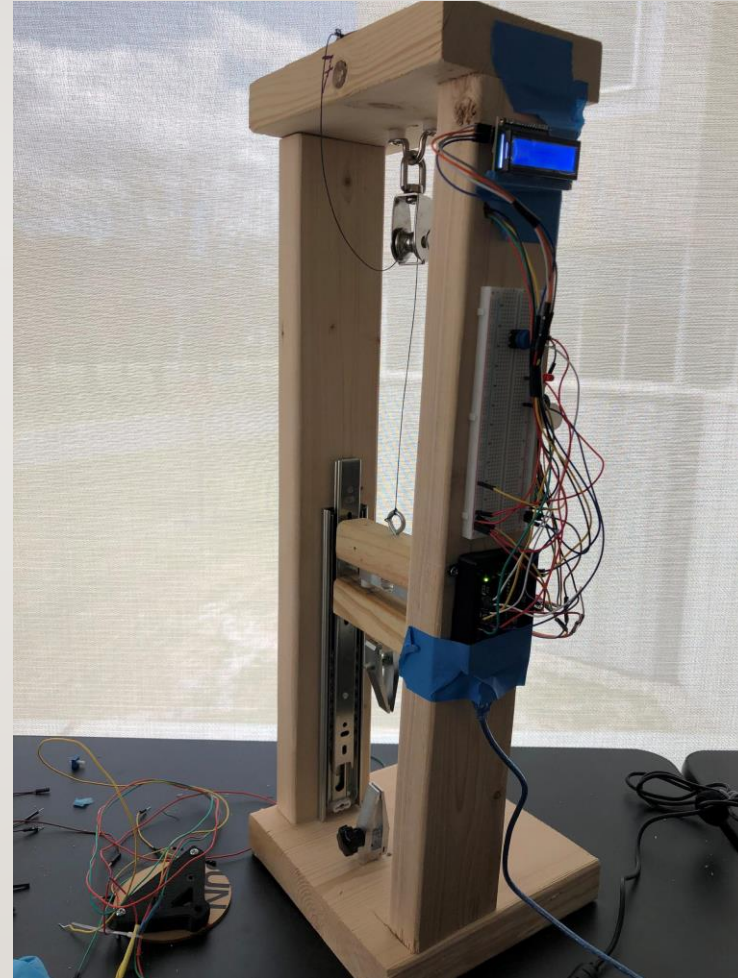
ULTIMATE TENSILE STRENGTH TESTER

TEAM 7:

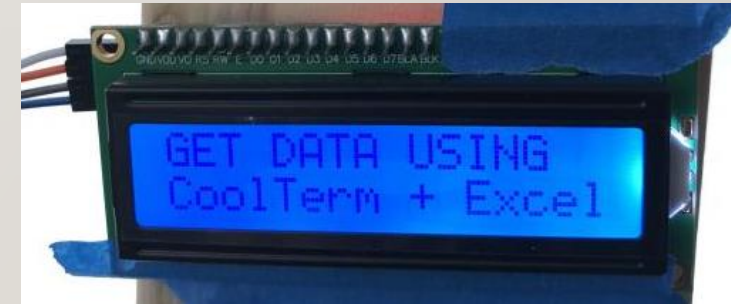
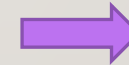
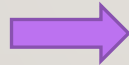
LOGAN MEAD

JASON WONG

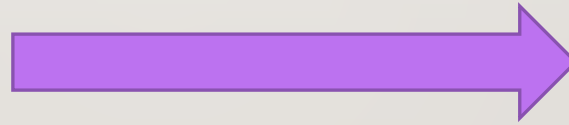
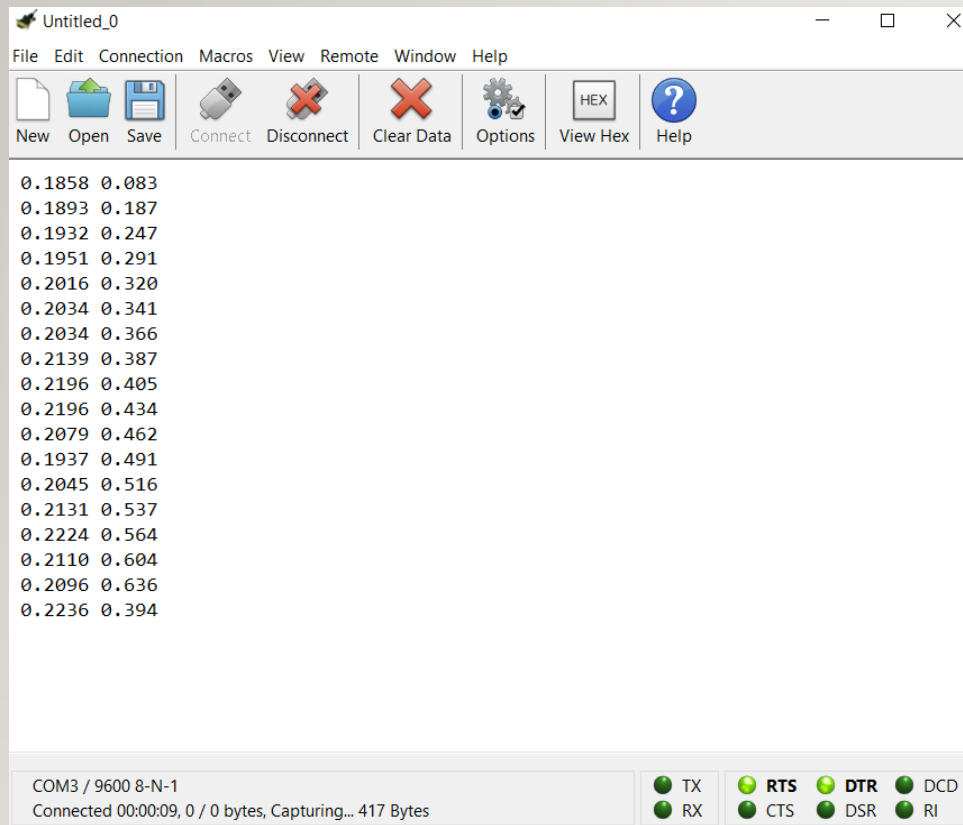
UG BRILINKEVICIUS



SYSTEM LOGIC



DATA COLLECTION



SYSTEM FEATURES

- Temperature / Humidity Sensor
 - Calibrates distance based off Temperature / Humidity
- LCD Screen with I2C module
 - Displays instructions / data to the user
- Kevlar Rope / Pulley
 - Smoothen pulling process
- Push/Pull Force Clamps
 - Stronger / Efficient clamps

SYSTEM FEATURES

- Button
 - Allows user to control and interact with the system to properly collect data
- Alert System
 - Alerts user to stop and reset pulling when load approaches 5kg
- CoolTermWin
 - Software that allows user to collect serial monitor data and save it as a text file

FUNCTIONALITY VS. ALTERNATIVES

- Gaps that stood out the most were:
 - Hard for first time user to know how to operate the machine
 - Solution: LCD screen with instructions / data with button for interaction
 - Pulling Process was rough which caused inaccurate data
 - Solution: Added Pulley and thinner rope to smoothen pulling
 - Clamps were time inefficient, and grip was weak
 - Solution: Upgraded with stronger and easier to use clamps
 - No way of knowing max load is reached to prevent breaking load cell
 - Solution: Added Alert System
 - Users without knowledge of Arduino wouldn't be able to collect data from the system
 - Solution: Added CoolTermWin software

Q&A

