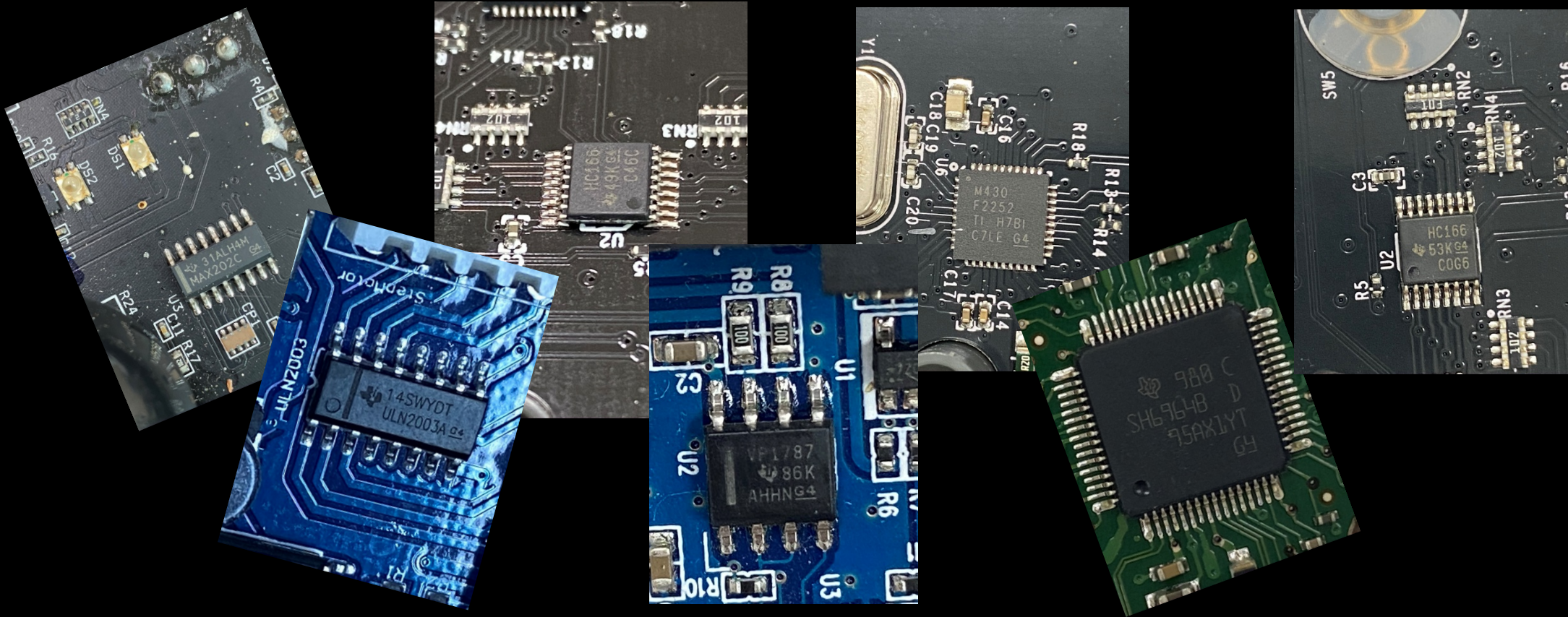# TEXAS INSTRUMENTS REPORT

Make a new idea for ARDUINO using to the 'TI chip'

Cayden Chun
James Hong
Ted Lee

TEAM : 35611S

Introduction

Hello! Our report is about Texas Instruments (TI). We decided to write this report to learn about what some computer components do.

We found TI Chips

Research – Old PC

We first decided to look for TI products in an old computer tower.
After some dismantling, we found a TI chip in the hard drive.
However, we were unable to find out much more information about the chip.

Disassembly of old personal computer

SH6964B, TI, motor controller (In the Seagate Hard Disk)

Research – VEX IQ Controller

    Then, we decided to look for chips in a VEX IQ controller. It turned out to house two TI chips, the first of which was printed with the model number 'M430'. We learned that the chip was a micro-processing unit, which serves as the memory that processes the input and output. We also found a chip printed with 'HC166'. This chip was a shift register, which stores data in slots, basically like this: data comes into the first slot, then the more data pushes the first data forward a slot and takes up the first slot, and so on, until the first bit of data is pushed out of the last part, making it the output. This process is also reversible.

Disassembly of VexIQ Controller


F2252 and HC166 (VEX IQ Controller)
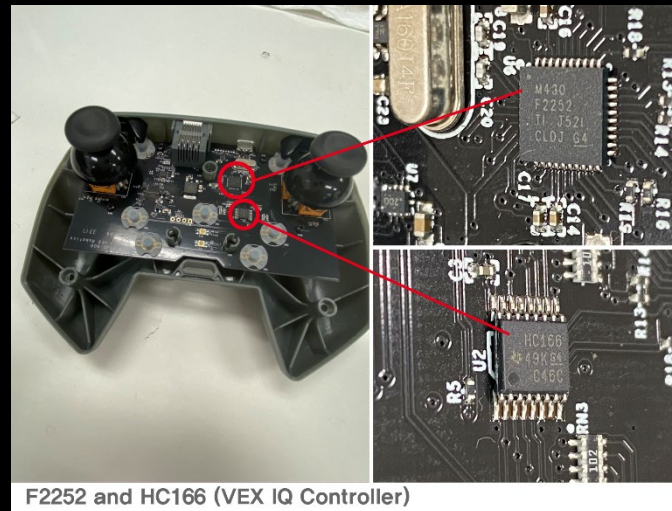
Project - ARDUINO using the 'TI chip'

We decided to use an Arduino Uno since it had a TI chip.

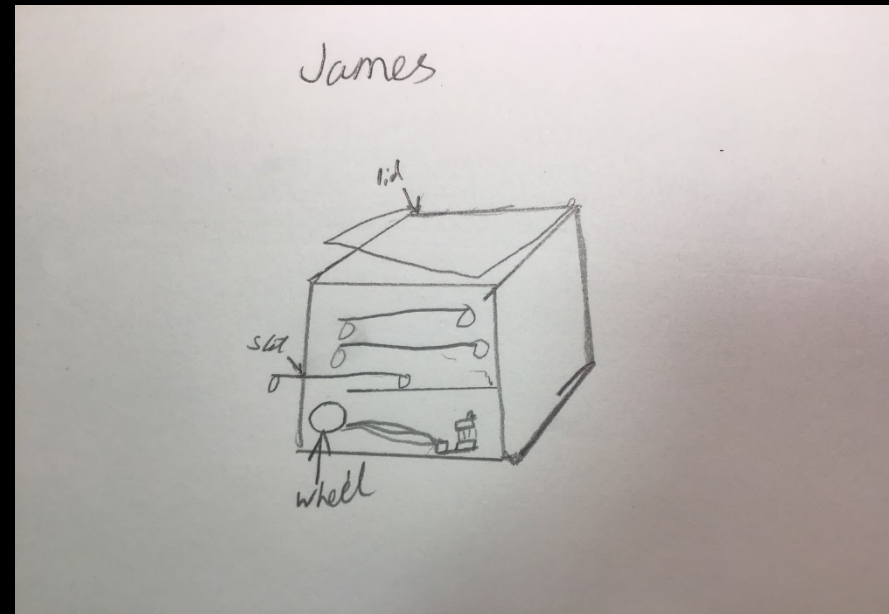We first thought of making a wiper system since it was simple.

ULN2003A (MotorDrive for Arduino)

"Wiper" using the "ULN2003A"
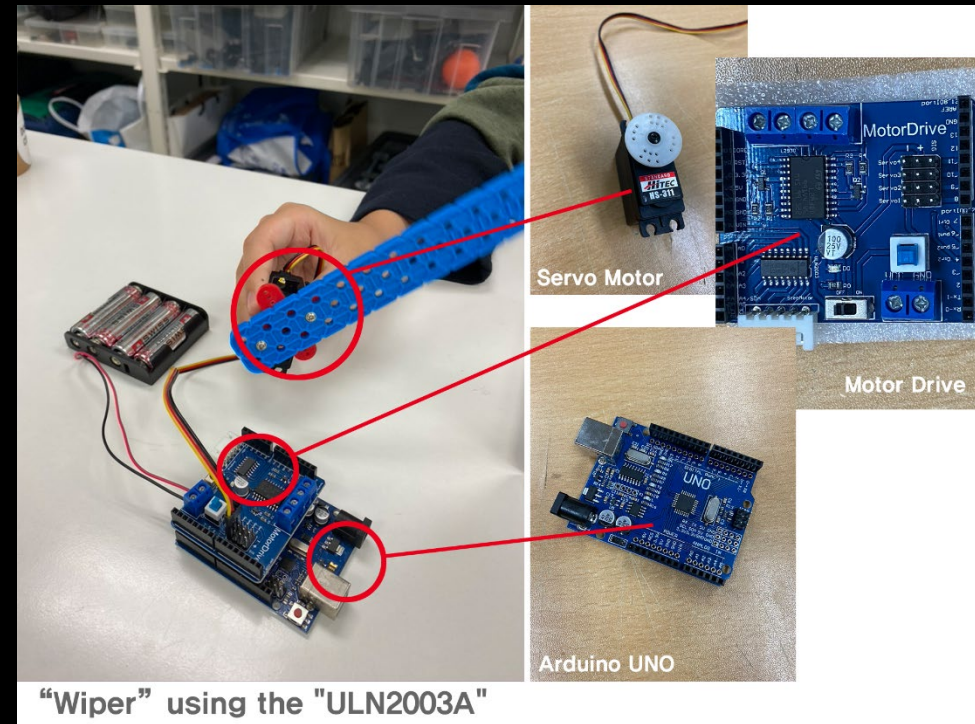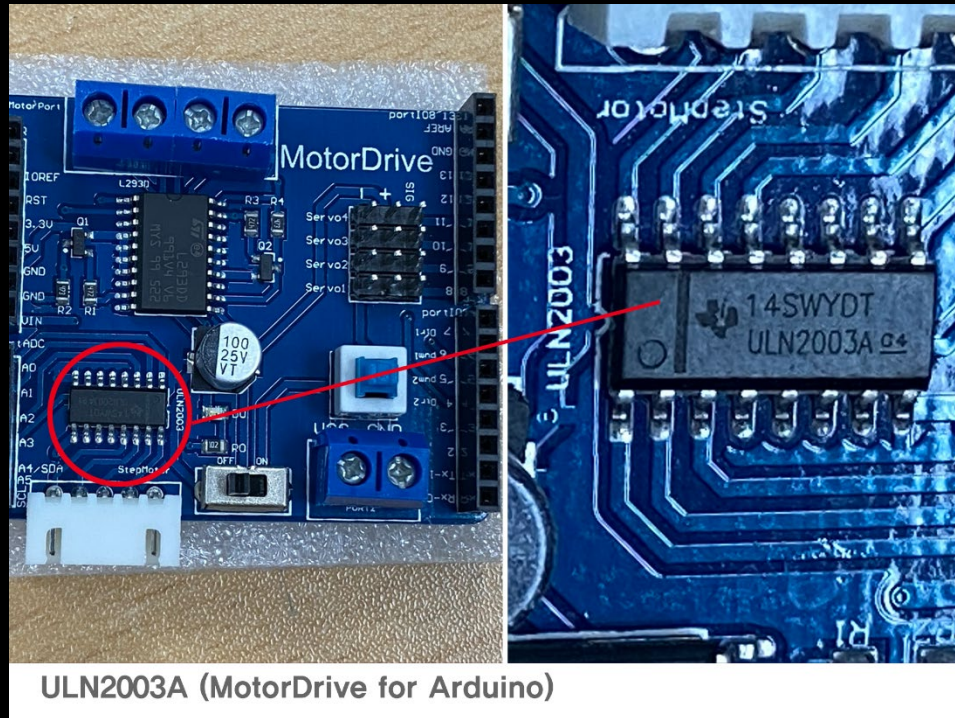
Project - ARDUINO using the 'TI chip'

One of us had an idea: **A mask dispenser**! It would provide a better challenge and would be helpful in the current pandemic. We had a few meetings in person to discuss and come up with prototypes.
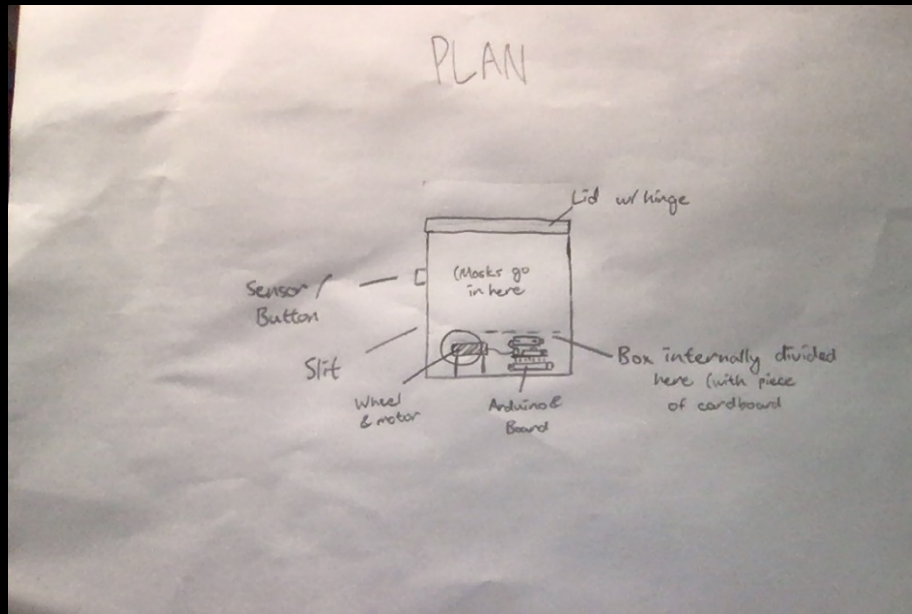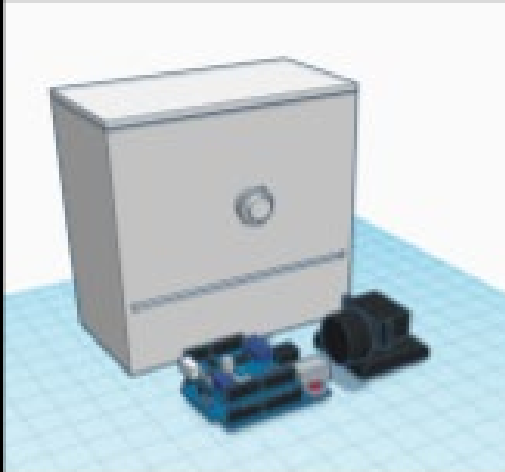

Design - 01

Design - 02

Project - ARDUINO using the 'TI chip'

This is the 3D model we made in Tinkercad. You can see all the components.

Pretty soon we made a 3D model of what we envisioned with an online modeling program called 'Tinkercad'.

We decided to dispense the masks with a wheel which would push the masks forward.

Here you can see the one way bearing we 3D Printed for use on the mask dispenser.

But there was only one problem: the servo motor we were using couldn't keep spinning in one direction.

We decided to use a 3D printed one way bearing which would let the motor run freely in one direction.

Things we learned

 We learned a lot of things throughout writing and researching for this report.
For example, how motors need controllers to manage how much power they consume, how much they output, etc.
We learned a lot about coding and how we can control lights, sensors, and other things using Arduino.

Our team members

Sources

- https://www.ti.com/

- https://www.youtube.com/

- https://www.ti.com/

- https://www.hddzone.com/

- https://www.youtube.com/

- https://www.youtube.com/

- https://www.ti.com/