

Presentation Material



Vidvath Tanjore

Andrew Walisser

Connor Rennie

Wesley Savage

Andrew Bettin

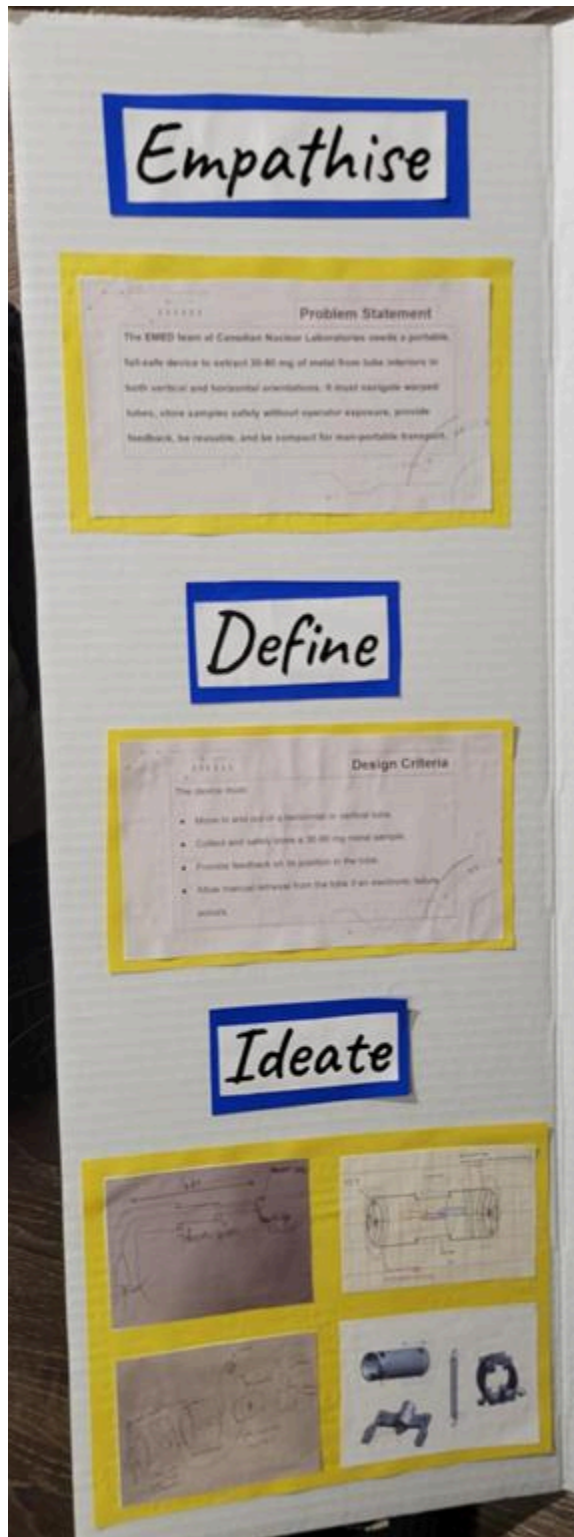
University of Ottawa

GNG 1103 - Introduction to Engineering Design

Mr. David A. Knox

Wednesday, March 26th, 2025

Pictures of the Tri-fold Board



Team WACAV

Wesley Savage, Vidvath Tanjore

Andrew Bettin, Andrew Walisser, and

Connor Rennie,

Final Design

Clamping and Drive Mechanisms (Movement)



The stepper motor moves the motor
section and feed using a rack and
pinion system.



The servo motor provides the clamping
moment to grip the ball's surface.

Fail-safe



One end of the 1/4" timing rope will be attached to the end cap of the device,
while the other end will be attached to the extremity of the ball.

Communication



An XBP-2 module for Serial
communication will be used to
transmit the distance traveled.



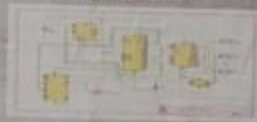
Wireless provides all the required
data for navigation.

Electronic Components

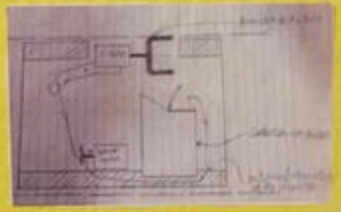


- The motor driver controls the motor using signals from the microcontroller.
- The board provides sufficient voltage for the voltage components.

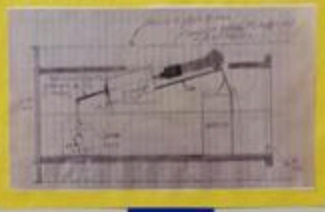
Circuit Diagram



Prototyping and Testing



Prototype 1



Prototype 2

Fail-safe

- Was tested by using the rope to lift a 1.5 kg object.
- This was a high-fidelity test.
- The test was successful as the rope was able to easily lift the object.

Movement

- Solidworks animation was used to analyse the movement.
- Test was successful as all the components operated as they should.

Code

- Was tested along with all the other electronic components.
- High-fidelity test.
- Test was successful as all the electronic components worked as they should.

Link to the Presentation - GNG 1103 - Design Day

This presentation contains information such as animations, test plan, circuit diagram, etc.