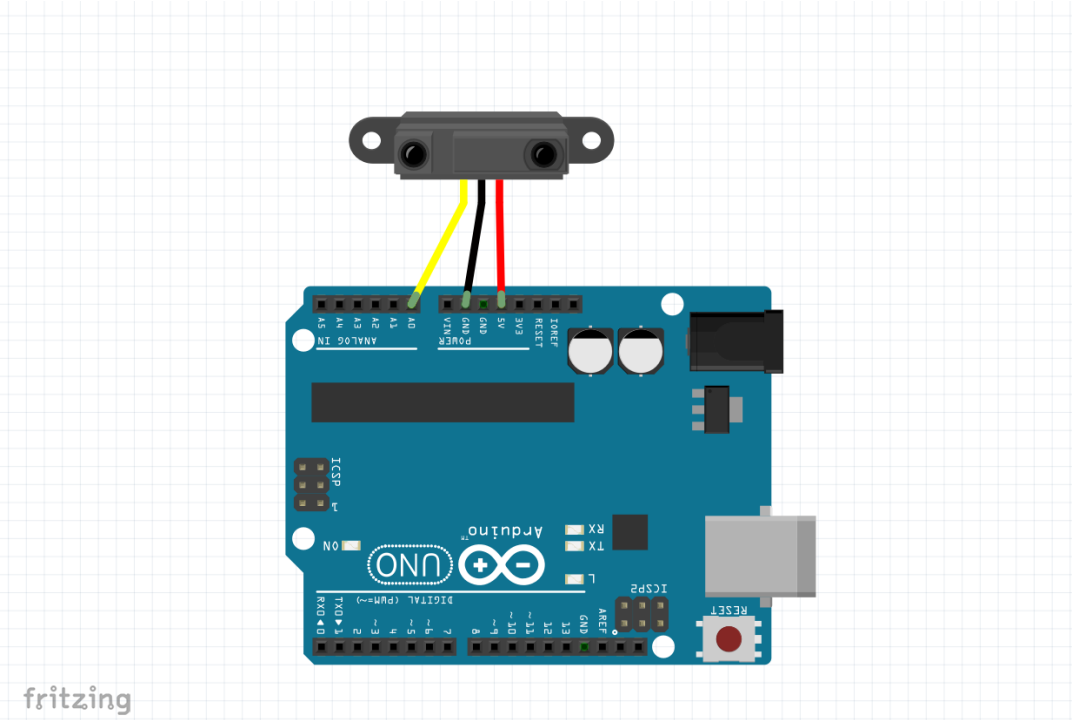
LAB Tasks
Handups using Moodle:
1. Arduino code - copy past into the text section
2. The excel sheet

You will need:
1. Arduino
2. Sharp depth sensor
3. A ruler to measure distance

Todays lab we will use the depth sensors. NOTE the wiring cable colour.

SENSORS = Distance sensor

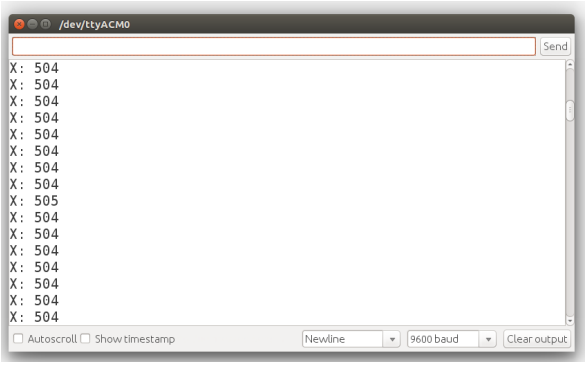
1. Wire the depth sensor



2. Read the values using an arduino sketch
3. Plot your data using the following Arduino code, add comments to explain the the code

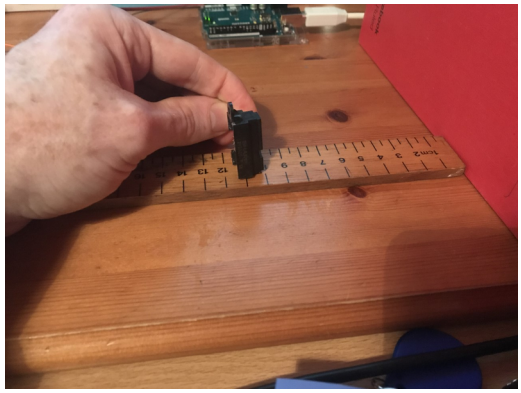
```
int sensorValue = analogRead(A0);
float voltage = sensorValue * (5.0 / 1023.0);
Serial.print("X,"); Serial.print(voltage); Serial.print("  ");
Serial.println(" ");
```

4. View the raw ADC voltage data using the serial monitor



5. Use the following excel GMIT_Drive and create your own copy as save it.

6. Next you will record the ADC voltages at a range of distance from a flat surface, such as the ground for a book, and populate the excel sheet. Note IR light from the sensor does not like shiny surfaces.

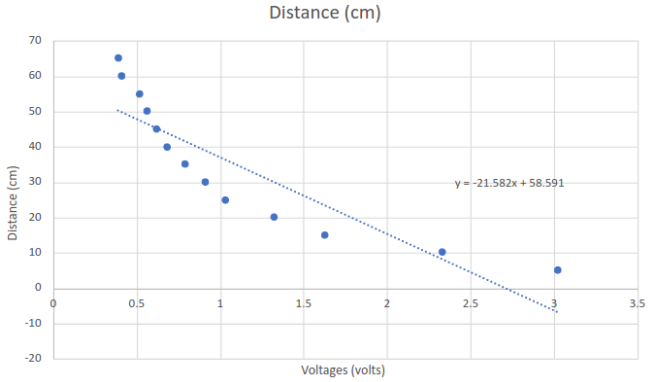


7. Next you will record this voltages at a range of distance and populate the excel sheet.

Voltage (volts)	Distance (cm)
3.02	5
2.33	10
1.63	15
1.32	20
1.03	25
0.91	30
0.79	35
0.68	40
0.62	45
0.56	50
0.52	55
0.41	60
0.39	65
0.38	70
0.34	75
0.3	80

8. Use will now have a formula you can not get distances, when you input x i.e ADC voltage . e.g **y=-22.58*x+58.591**.

- Add this line of arduino code to calculate and plot this value instead of voltage



NOTE: Submit by pushing your work via github

Make sure you have - https://git-scm.com/book/en/v2/Getting-Started-First-Time-Git-Setup