Project in ML and Electronics

Predicting the amount of LPG Gas

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THEME:

Suppose there is a Gas cylinder with an initial weight of 30 kg. During the usage of Gas, there is a decrease in the weight of the Gas cylinder continuously. We want to measure the amount of use of LPG gas after every 10 seconds.

Projective Objective

Project Challenge: Reading streaming data from Computer USB port and make excel sheet of reading and apply ML algorithms for prediction.

Hardware Used :   1. Load cell (for measuring weight)
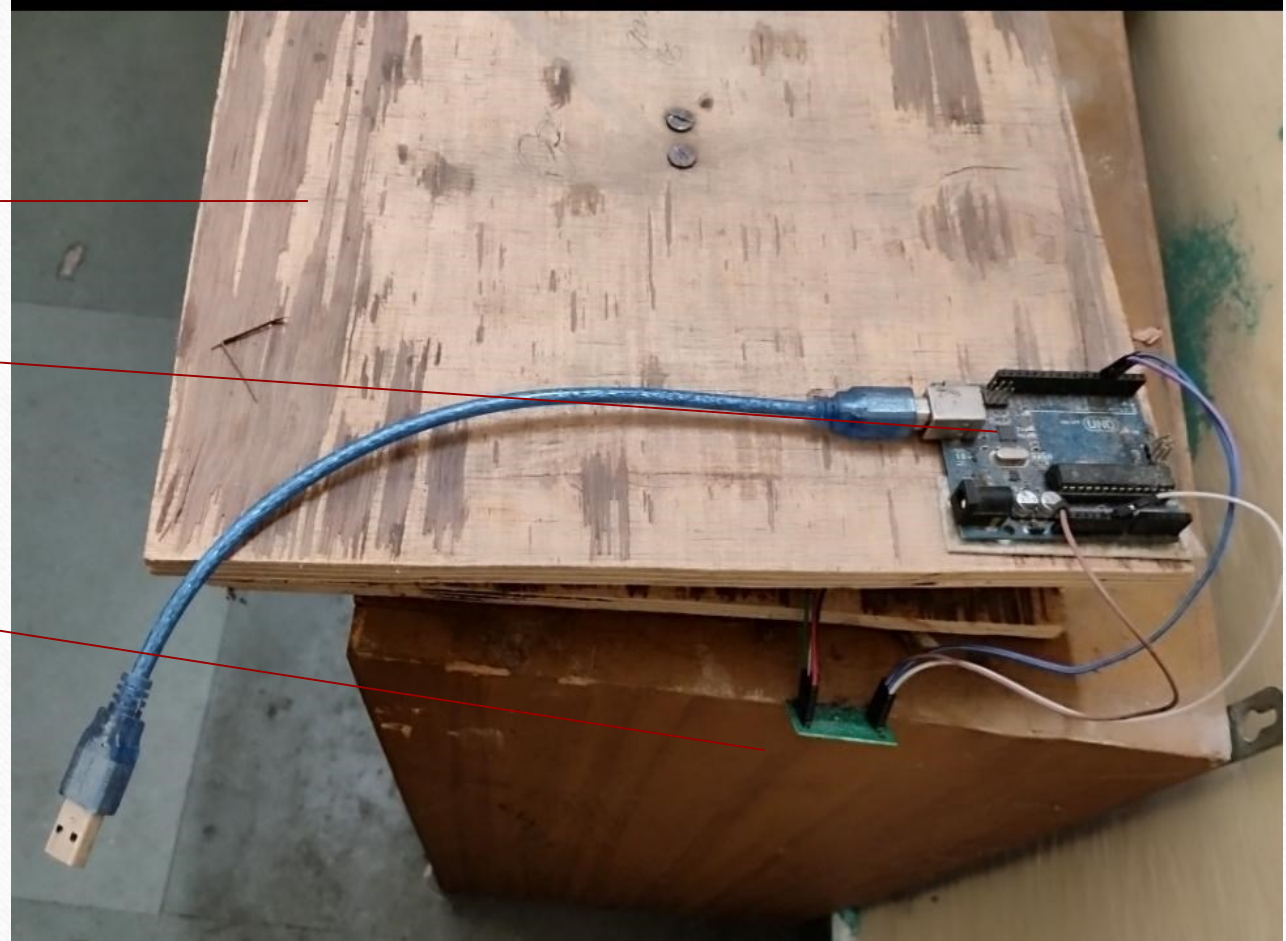2. Arduino
3. Amplifier (Analog to Digital Converter)

Software Used   : Arduino Programming, Python Programming,
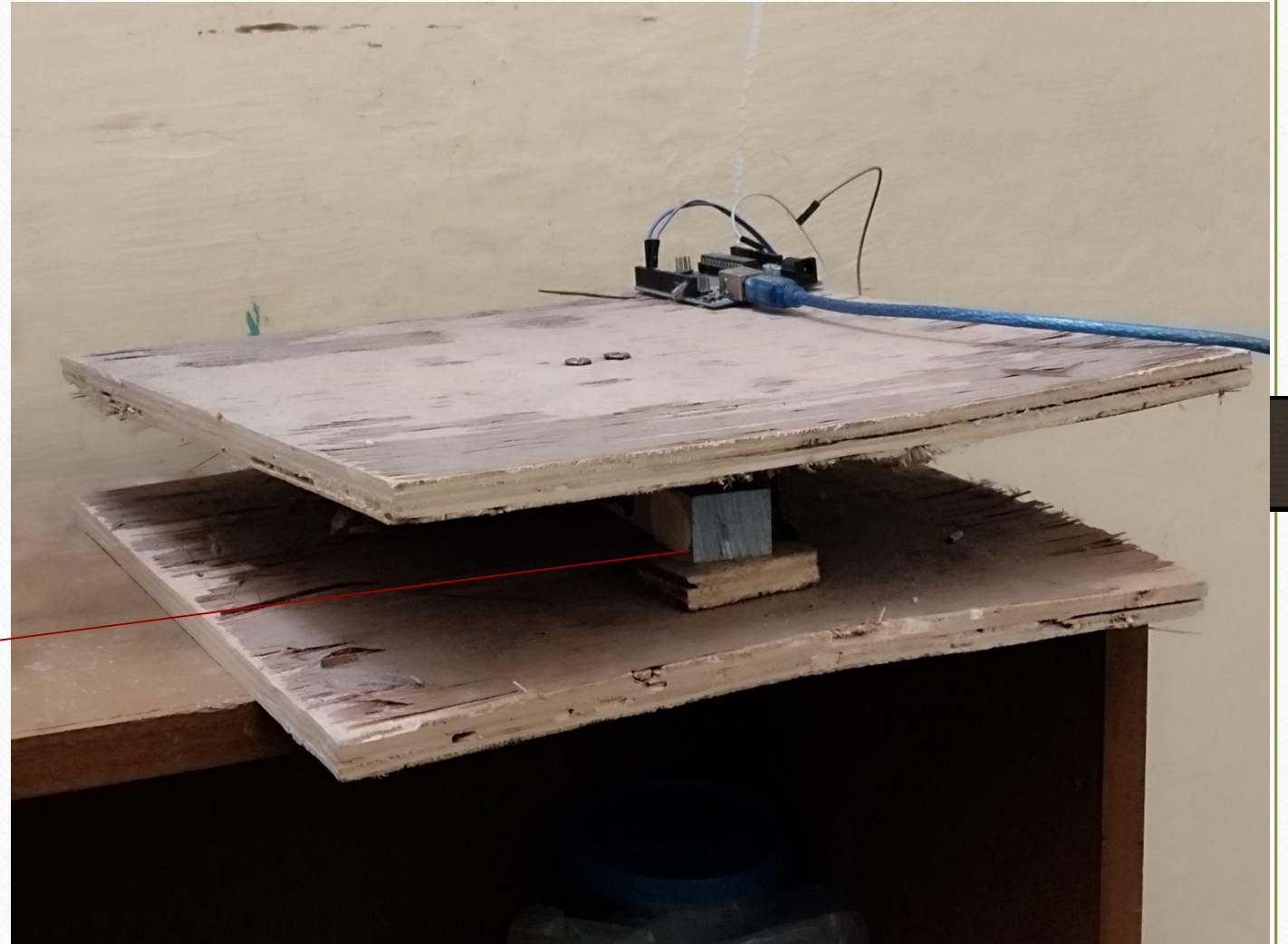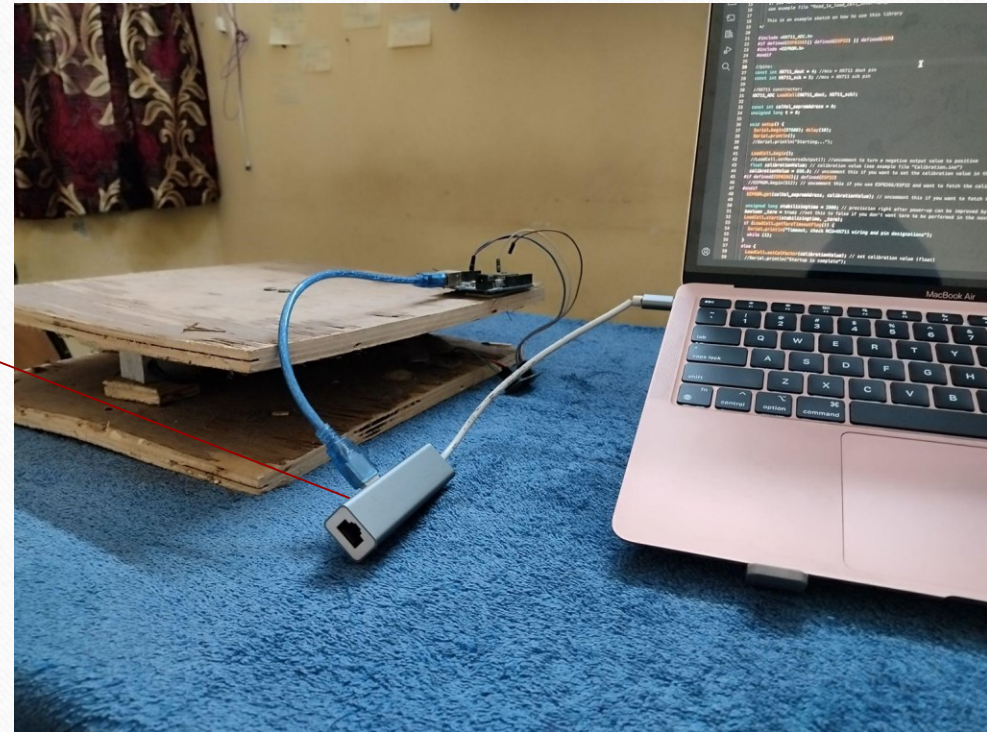
Serial Library

Top View
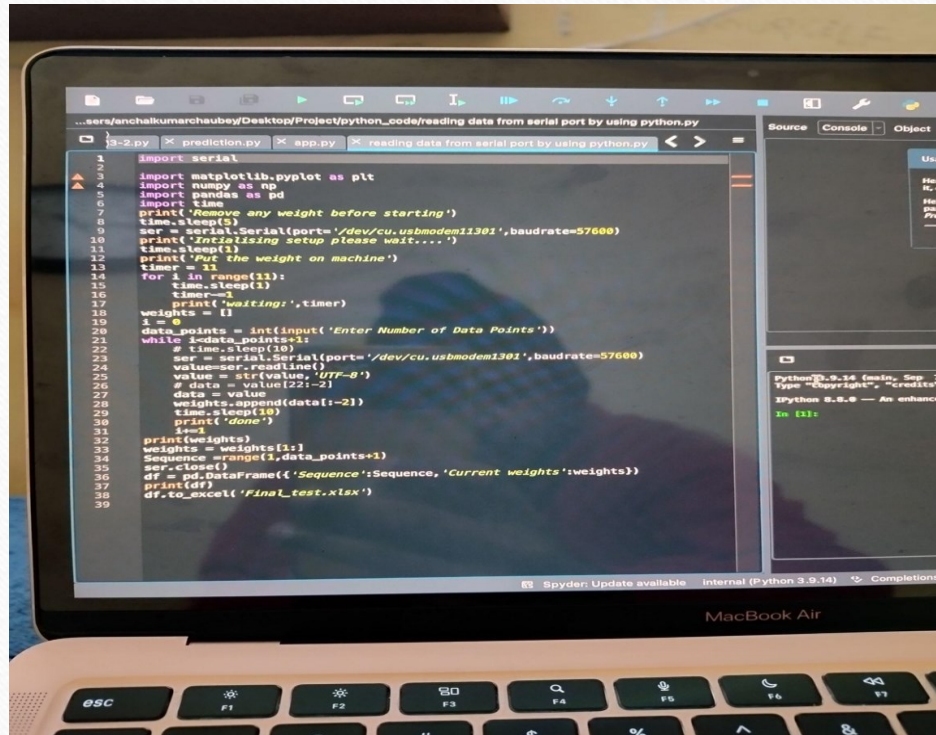
Plywood

Arduino

Amplifier

Side View

Load Cell

Transfer Arduino Data to USB Port

Connector

Read Data From USB Port by PYTHON SERIAL LIBRARY

Real time data in excel

Sequence	Seconds	Current weights (in gm)	weight decreses by (in gm)
1	10	1025.51	0.00
2	20	1025.94	0.43
3	30	1025.5	-0.44
4	40	1022.96	-2.54
5	50	1016.16	-6.80
6	60	1010.78	-5.38
7	70	1005.34	-5.44
8	80	996.62	-8.72
9	90	989.31	-7.31
10	100	981.4	-7.91
11	110	973.7	-7.70

Use Data For Predictions by Regression

```python
1    from joblib import load
2
3    def prediction():
4      print('model can predict in range of 0 - 1000 ml')
5      try:
6        weight = int(input('Enter The weight in gm/ml to predict:'))
7        if not (weight > 0 and weight < 1000):
8          return print('Enter the value between 0-1000 ml or gm')
9      except:
10       return print('You entered invalid input')
11     test_model = load('/Users/anchalkumarchaubey/Desktop/Project/python_code/linear_model.joblib')
12     sequence = test_model.predict([[weight]])
13     hrs = (sequence*5)/60
14     return print(hrs[0,0],'hours')
15
16   prediction()
17   prediction()
18   prediction()
```

Prediction in hours

Predictions

```
/python_code/prediction.py
model can predict in range of 0 - 1000 ml
Enter The weight in gm/ml to predict:100
10.358962939292221 hours
```