Nakuja internship
Team meeting

Progress report format

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Tasks carried last week

- Parachute deployment programming

  Worked with various filters

  Collected BMP data for filter correlation; Settled on three filters;

- Write up all the components
- PCB design of the avionics bay

3	3	1466.87	1466.41	1467.93	1468.51	331.80	1466.77	533.09	1464.32
4	4	1466.87	1466.70	1468.32	1469.28	388.56	1466.82	666.36	1464.96

In [5]:
```
df.drop("Unnamed: 0", inplace=True, axis=1)
df.head(20)
```

Out[5]:

	realAltitude	movingAveragew3	movingAveragew2	movingAveragew1	exponentialFilter	runningMedian	digitalSmooth	kalman
0	1467.16	978.01	1466.72	1468.02	143.02	1466.77	133.27	1383.77
1	1466.29	1466.68	1467.16	1467.22	209.21	1466.87	266.55	1456.20
2	1466.20	1466.34	1467.45	1467.13	272.07	1466.77	399.82	1462.66
3	1466.87	1466.41	1467.93	1468.51	331.80	1466.77	533.09	1464.32
4	1466.87	1466.70	1468.32	1469.28	388.56	1466.82	666.36	1464.96
5	1466.48	1466.92	1468.65	1469.96	442.47	1466.77	799.64	1465.43
6	1466.77	1467.21	1469.09	1470.73	493.68	1466.82	932.91	1465.82
7	1466.96	1467.57	1469.62	1471.50	542.35	1466.87	1066.27	1465.97
8	1467.35	1467.98	1470.20	1472.37	588.59	1466.87	1199.64	1466.14
9	1467.06	1468.37	1470.42	1473.43	632.51	1466.87	1333.00	1466.27
10	1467.44	1468.52	1470.50	1473.40	674.21	1466.87	1466.36	1466.38
11	1467.16	1468.47	1470.53	1474.17	713.85	1466.87	1466.45	1466.42
12	1467.44	1468.62	1470.41	1475.23	751.51	1466.92	1466.45	1466.50
13	1467.73	1468.87	1470.64	1475.48	787.31	1466.96	1466.55	1466.56
14	1467.25	1469.28	1471.16	1476.12	821.29	1466.96	1466.64	1466.62
15	1467.54	1469.40	1471.24	1476.46	853.58	1466.96	1466.73	1466.66
16	1466.87	1469.42	1471.51	1476.71	884.27	1466.96	1466.82	1466.70
17	1467.25	1469.60	1471.93	1477.35	913.43	1467.16	1466.91	1466.77
18	1467.93	1469.75	1471.91	1478.18	941.13	1467.35	1466.91	1466.84
19	1468.31	1469.99	1472.32	1479.11	967.46	1467.35	1467.00	1466.91

In [6]:
```
df.shape
```

```
# calculate Pearson's correlation
corr1, _ = pearsonr(df['realAltitude'], df['runningMedian'])
corr2, _ = pearsonr(df['realAltitude'], df['digitalSmooth'])
corr3, _ = pearsonr(df['realAltitude'], df['kalman'])

print('Pearsons correlation')

print("RunningMedian: ", corr1)
print("DigitalSmooth: ", corr2)
print("Kalman: ", corr3)
```

```
Pearsons correlation
RunningMedian:  0.9201272993727314
DigitalSmooth:  0.9477330437129308
Kalman:  0.841414322887028
```

Tasks in this week

- SD card module with 3V3 logic
- More tests to determine the suitable sensor filter
- Write up all the components
- PCB design

TIMELINE

Month	Week	Tasks
Mar	Week 1	Research and acquisition of sensors
	Week 2	Ignition and parachute deployment programming
	Week 3	1. PCB design of the avionics bay 2. Parachute deployment programming 3. Avionics components
	Week 4	1. SD card module with 3v3 regulator 2. More filter tests 3. Pcb design 4. Acquire prototyping board
Apr	Week 1	Avionics bay development
	Week 2	Airframe integration
	Week 3	Integration with propulsion
	Week 4	Launch N-1 rocket