# Speedometer – Hall Effect Sensor

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TEAM: EmergensUI

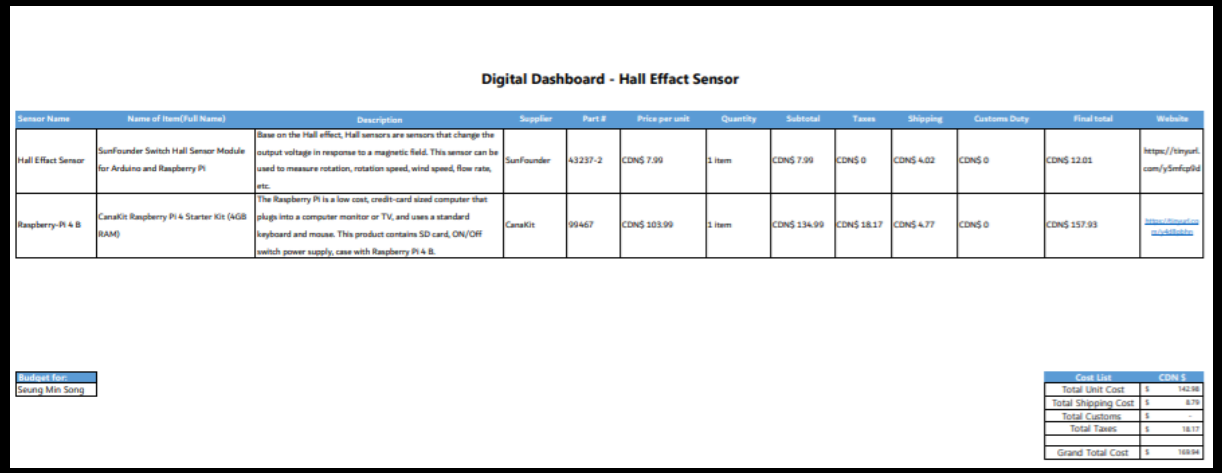
# Proposal

- Project Name:  Automotive UI
- Project Goal(For hardware): Develop dashboard for paramedic

- Hall Effect Sensor: for speedometer
  - - Hall effect sensors - change the output voltage in response to a magnetic field.
  - - magnet is detected or  not.
  - - can get RPM, SPEED, DISTANCE

# Budget

- Hall Effect Sensor(SunFounder)
  - -CDN $7.99
  - - Amazon
- Raspberri-Pi 4 B(CanaKit)
  - -CDN $157.93
  - - Amazon
  - 1 over
    - - magnet
      - Around $2 (Dollarama)



**Digital Dashboard - Hall Effact Sensor**

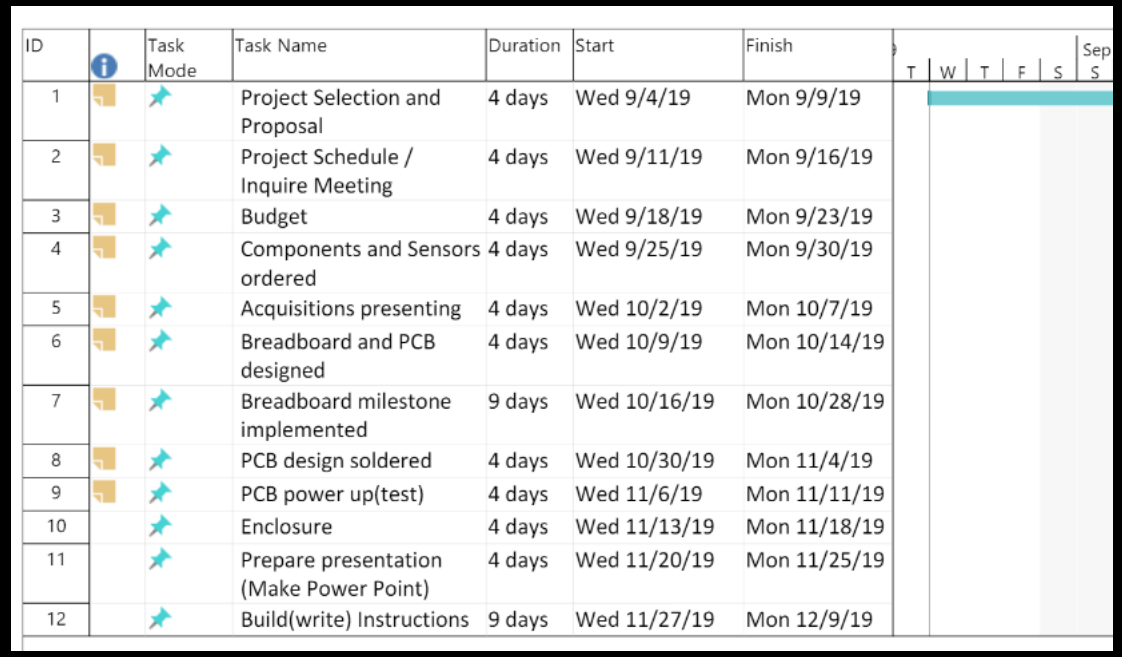
| Sensor Name | Name of Item(Full Name) | Description | Supplier | Part # | Price per unit | Quantity | Subtotal | Taxes | Shipping | Customs Duty | Final total | Website |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hall Effact Sensor | SunFounder Switch Hall Sensor Module for Arduino and Raspberry Pi | Base on the Hall effect, Hall sensors are sensors that change the output voltage in response to a magnetic field. This sensor can be used to measure rotation, rotation speed, wind speed, flow rate, etc. | SunFounder | 43237-2 | CDN$ 7.99 | 1 item | CDN$ 7.99 | CDN$ 0 | CDN$ 4.02 | CDN$ 0 | CDN$ 12.01 | https://tinyurl.com/y5mfcpl6d |
| Raspberry-Pi 4 B | CanaKit Raspberry Pi 4 Starter Kit (4GB RAM) | The Raspberry Pi is a low cost, credit-card sized computer that plugs into a computer monitor or TV, and uses a standard keyboard and mouse. This product contains SD card, ON/OFF switch power supply, case with Raspberry Pi 4 B. | CanaKit | 99467 | CDN$ 103.99 | 1 item | CDN$ 134.99 | CDN$ 18.17 | CDN$ 4.77 | CDN$ 0 | CDN$ 157.93 | https://tinyurl.com/y4d9ddhn |

| Budget for: |
|---|
| Seung Min Song |

| Cost List | CDN $ |
|---|---|
| Total Unit Cost | $ 142.98 |
| Total Shipping Cost | $ 8.79 |
| Total Customs | $ - |
| Total Taxes | $ 18.17 |
| | |
| Grand Total Cost | $ 169.94 |

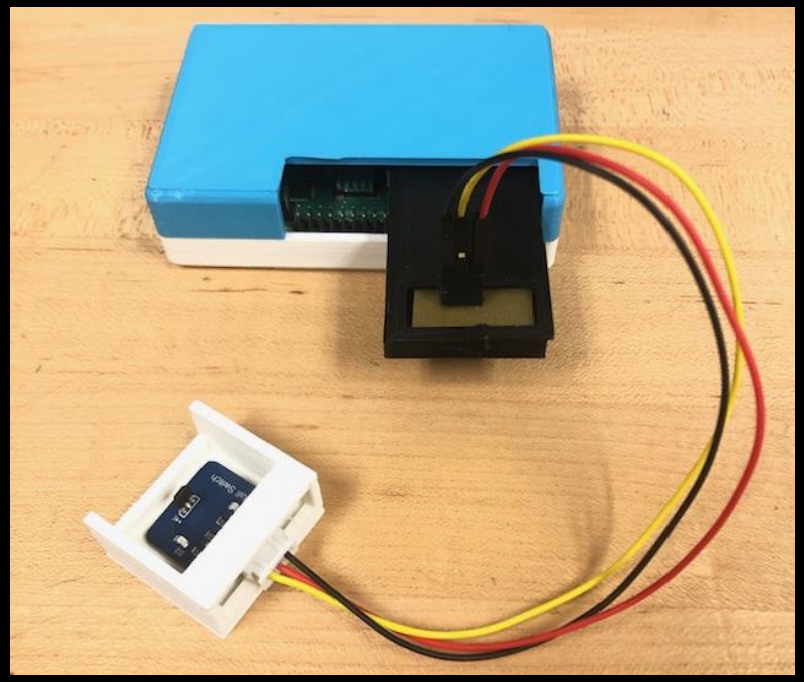
# Schedule

- Everything - fine.
- Just spend more time at
  - Breadboard milestone



| ID | Task Mode | Task Name | Duration | Start | Finish |
|---|---|---|---|---|---|
| 1 | | Project Selection and Proposal | 4 days | Wed 9/4/19 | Mon 9/9/19 |
| 2 | | Project Schedule / Inquire Meeting | 4 days | Wed 9/11/19 | Mon 9/16/19 |
| 3 | | Budget | 4 days | Wed 9/18/19 | Mon 9/23/19 |
| 4 | | Components and Sensors ordered | 4 days | Wed 9/25/19 | Mon 9/30/19 |
| 5 | | Acquisitions presenting | 4 days | Wed 10/2/19 | Mon 10/7/19 |
| 6 | | Breadboard and PCB designed | 4 days | Wed 10/9/19 | Mon 10/14/19 |
| 7 | | Breadboard milestone implemented | 9 days | Wed 10/16/19 | Mon 10/28/19 |
| 8 | | PCB design soldered | 4 days | Wed 10/30/19 | Mon 11/4/19 |
| 9 | | PCB power up(test) | 4 days | Wed 11/6/19 | Mon 11/11/19 |
| 10 | | Enclosure | 4 days | Wed 11/13/19 | Mon 11/18/19 |
| 11 | | Prepare presentation (Make Power Point) | 4 days | Wed 11/20/19 | Mon 11/25/19 |
| 12 | | Build(write) Instructions | 9 days | Wed 11/27/19 | Mon 12/9/19 |

# Image



```
pi@raspberrypi: ~/project
File  Edit  Tabs  Help
pi@raspberrypi:~/project $
pi@raspberrypi:~/project $ nano test_hall_effect_sensor.py
pi@raspberrypi:~/project $ python test_hall_effect_sensor.py
Magnetic material detected.
No magnetic material.
Magnetic material detected.
No magnetic material.
Magnetic material detected.
No magnetic material.
Magnetic material detected.
No magnetic material.
Magnetic material detected.
No magnetic material.
Magnetic material detected.
No magnetic material.
Magnetic material detected.
No magnetic material.
```

```
wlan0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 172.20.10.5  netmask 255.255.255.240  broadcast 172.20.10.15
        inet6 2605:8d80:680:a180:55c0:fa3f:b9bc:7b59  prefixlen 64  scopeid 0x0<
global>
```

# Course knowledge utilized from previous courses

- CENG254
  - - How to use Raspberry Pi