**Dragonfly**

**Group Member**

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**Sensor report generation**

My program will be receiving values from a flow sensor. It would traverse through the values and remove reading that are anomalous. Then the data would be process, after which it would be entered in to a word document with graphical representation.

The main processes are:

1. Frequency of values
2. Comparing with limits that have been set
3. Taking mean of values
4. Conversion of actual flow to normalized flow
5. Finding volumetric efficiency
6. Find actual pressure
7. Thermal analysis
8. Power analysis
9. Compressor efficiency
10. Dryers efficiency

Keeping in mind that this would be used in an industrial setting, the major challenge is with identifying all error that could occur and making a program that can adapt to different situations (for example a power outage that would reset the program and the memory so there should be a mechanism to save the progress at each step and can also be able to detect the change in flow and remove these reading)

**Generation one**

Has almost been designed. It takes its input from a directory, where all the files can be added (the sensor files are csv which the program reads directly from).

**Generation two**

The program will run on raspberry pi and would be able to communicate with other raspberry pis

**Generation three**

Would have a master pi tablet which would be used to control all slaves and input other reading that are required.

* Project Outcome

Providing support to a company in optimizing their efficiency and accuracy in generating reports for their clients

**Libraries**

* + OS
  + Numpy
  + Docx
  + Matplotlib
  + Gpiozero

**Resources**

* + Raspberry pi
  + Flow sensor