**Team Name**: Full of Air

**Team Members**: Prashant Ganorkar

**Project Name**: Excessive Compressed Air Usage

**Problem Statement:**

Increase in the use of compressed air is causing the company to use additional two rental compressor which cost $30,000/month. Need to avoid the need for additional rentals in the future and get the usage back to normal

**Questions:**

1. What is causing high compressed air usage compared to normal?
2. How to eliminate the potential root causes to avoid air usage? (out of scope for the project)

**Data**:

1. Compressed airflow meters across the time averaged to a minute for 2018

**Project planning/Task:**

1. **Data Cleaning:** Python: Pandas
   1. Remove flow meter data which are not working (No change in reading, very low values negative values)
   2. Check each flow meter column by plotting a Box Plot to identify and delete outlier reads
   3. Differentiate between mas flow meters and volumetric flow meters etc.
2. **Analyze data**: Python: Pandas, Matplotlib,
   1. Pareto analysis by plants (where is the problem?),
   2. Trend maps/run charts (When does it occur?),
      1. Seasonal
      2. Day/night trend
      3. Change due to days of the week (blasting on M and W)
      4. change due to increase in production etc.
   3. Averages, Std dev, Variance. May be add T- test and F-test (How bad is the problem?)
3. Brainstorm potential root cause (Leaks, increase production, misuse of air, tripping due to high ambient temperature etc.) Identify the which root cause is supported by data.