

Trustworthy Analytical Reporting Tool

Assoc Prof. He Shuangchi, Mr. Lee Hwee Huat
Yukihide Takahashi, Yeo Jin En Caleb, Charles Alexander Ng Ooi Choen, Ma Junchi

A. Objectives

SDP Group 4 and Abbott set the following objectives:

- Cleaning and filtering of dataset
- Exploring means of data storage through SQL
- Data visualisation through PowerBI

B. Data Filtering

SDP Group 4 developed a Python script (SQL Upload Tool) to retain only the datapoints within the 25th and 75th percentile, allowing for steady-state data to be obtained.

C. Data Storage

SDP Group 4 selected SQL as the medium for data storage. The SQL Upload Tool creates tables in SQL for listcodes, plants and drying rates in SQL to prepare data for extraction.

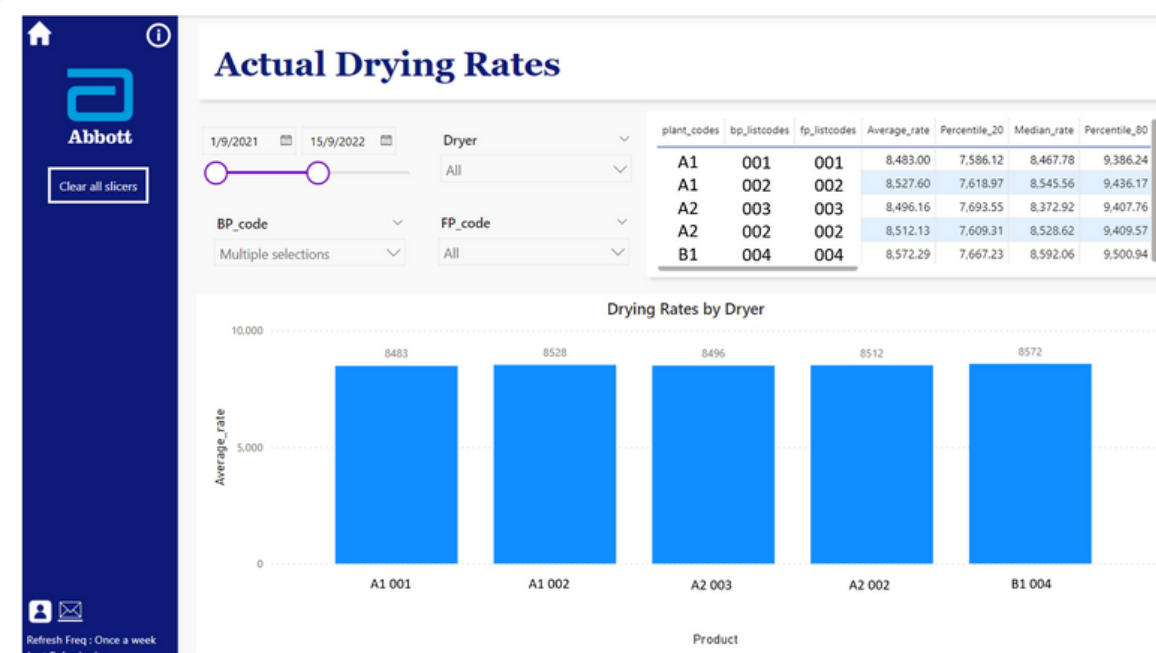
E. Documentation

SDP Group 4 also developed documentation for Abbott to use as reference or to teach new users. The document guides readers on how to utilise the SQL Upload Tool to ensure a smooth process of data filtering, building and populating of SQL tables before the final extraction of these tables into a single CSV file.

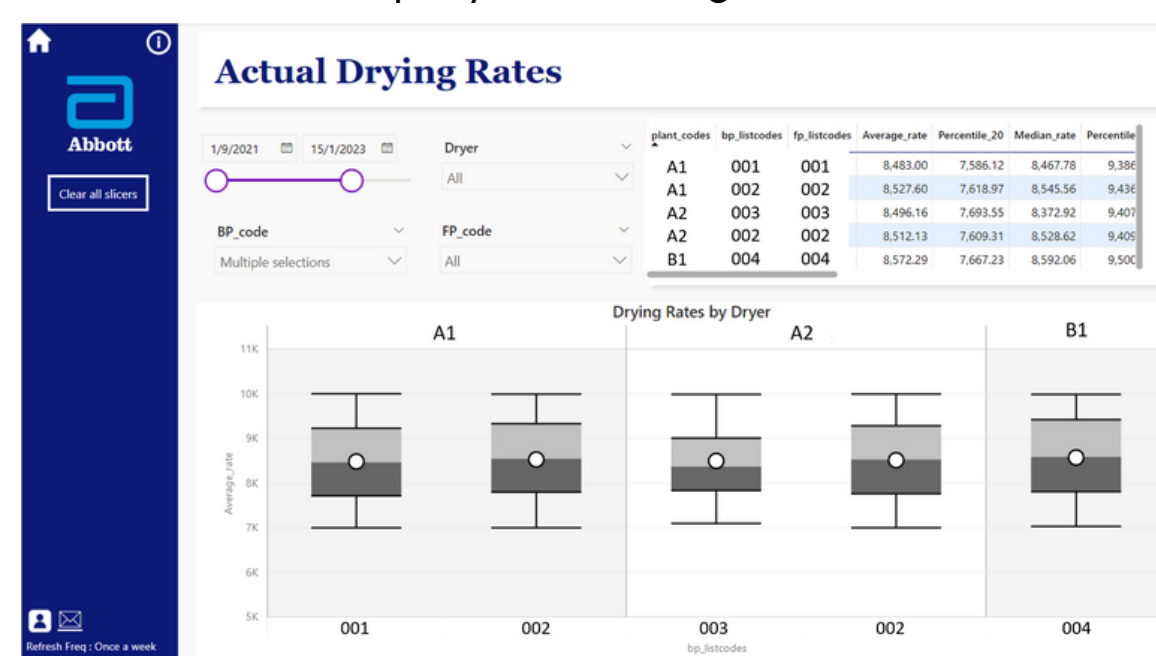
The documentation also provides a guide on how to import the CSV file into PowerBI and construct the various views. Text instructions were accompanied with screenshots, which gave clarity on the steps needed.

D. Data Visualisation - PowerBI

Data is extracted from SQL as a CSV file and will be imported into PowerBI. SDP Group 4 used this data to develop a dashboard for Abbott.



The default view for the PowerBI dashboard has sliders to filter data by date and drop down lists for filtering by dryer or BP/FP code. The selected data is then displayed in the given table and as bar charts.



The dashboard also contains a second page that has the same sliders and drop down lists for filtering data. The data on this page is displayed in a box plot instead which shows the spread of the drying rates for the selected data.

F. Conclusion

SDP Group 4 learned and developed technical skills regarding the usage of Python, SQL and PowerBI for data transformation and visualisation. These skills have allowed the team to enhance their understanding and application of these tools. These skills allowed SDP Group 4 to successfully create a useful data visualisation tool for Abbott's data-driven decision making process.