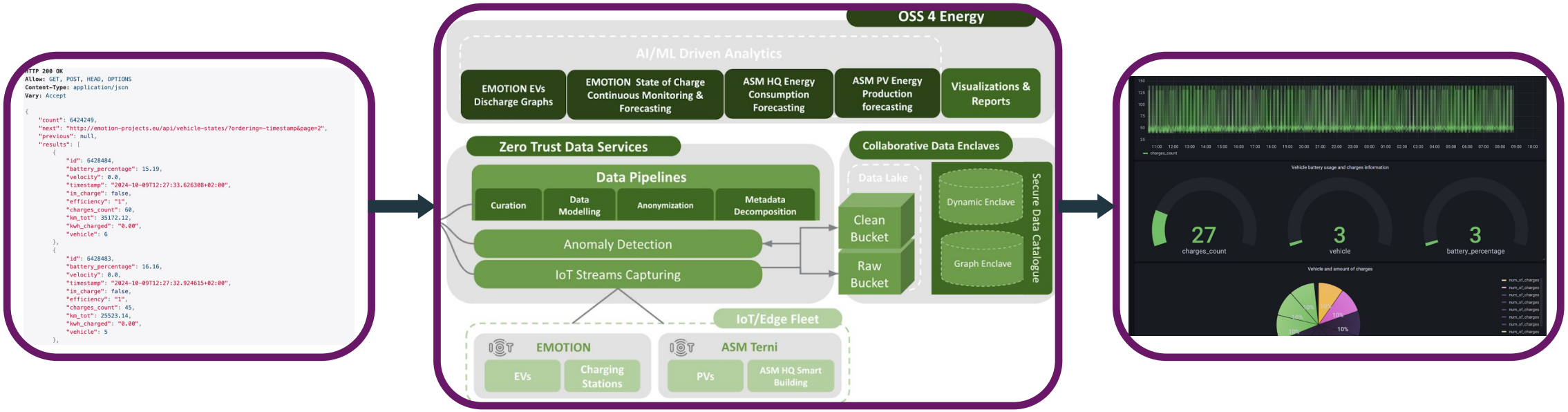
Eros4NRG: Zero Trust IoT Analytics for Smart Energy

Minimum Viable Product (MVP)

Martel Innovate

Eros4NRG Architecture

- Data -> Processing -> Visualization



Vision

- Data analytics
- Data trust & transparency
- Centralized data management & processing
- Visualization
- Continuous collaboration

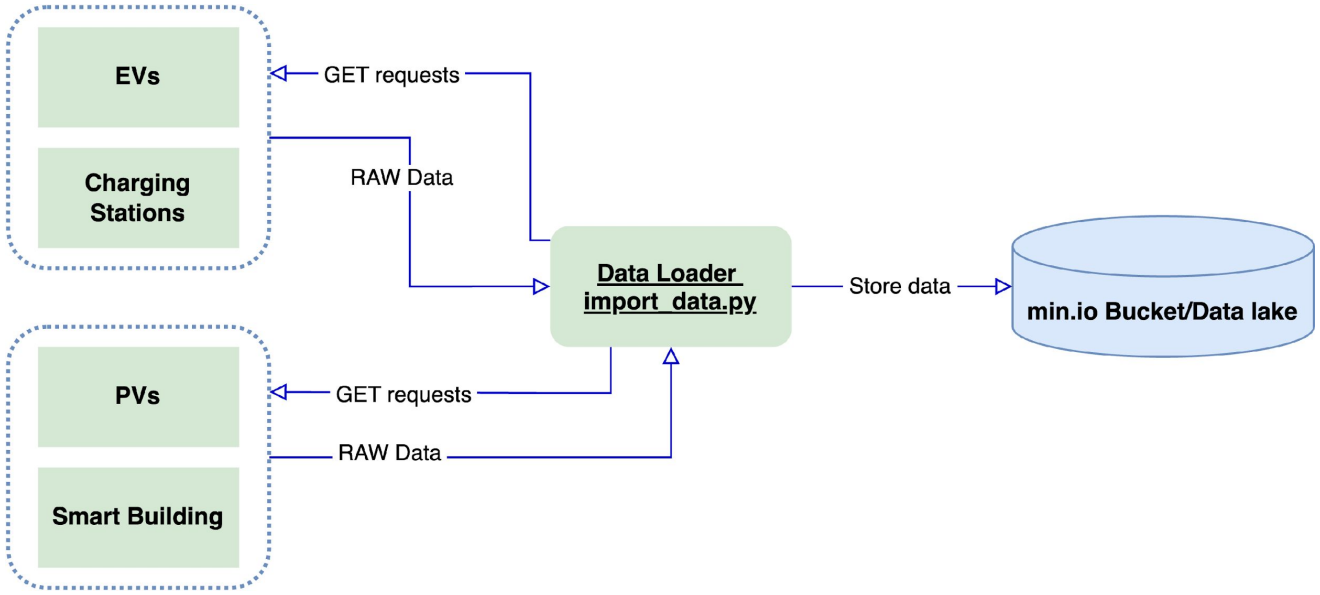
Eros4NRG: Minimum Viable Product (MVP)

- Eros4NRG MVP contains 4 modules:
  - Data gathering module
  - Data processing module
  - Data visualization module
  - Data Catalogue module

Data Gathering Module

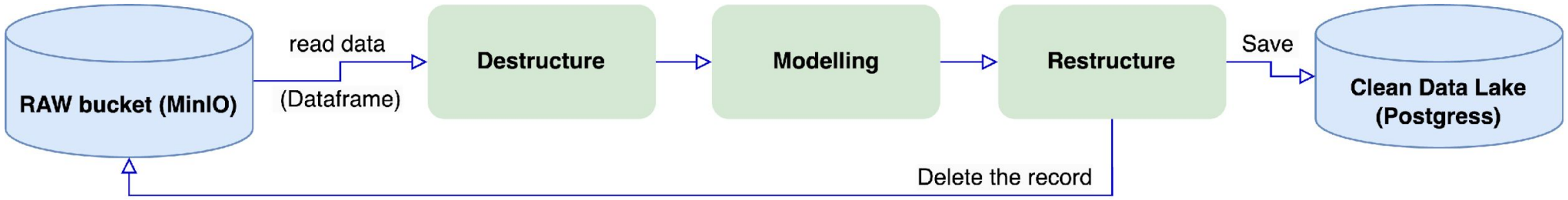
- Eros4NRG collects data from EMOTION and ASM Terni about solar panels and electric vehicles energy production and consumption

- The collected data is stored in the raw data bucket (MinIO)



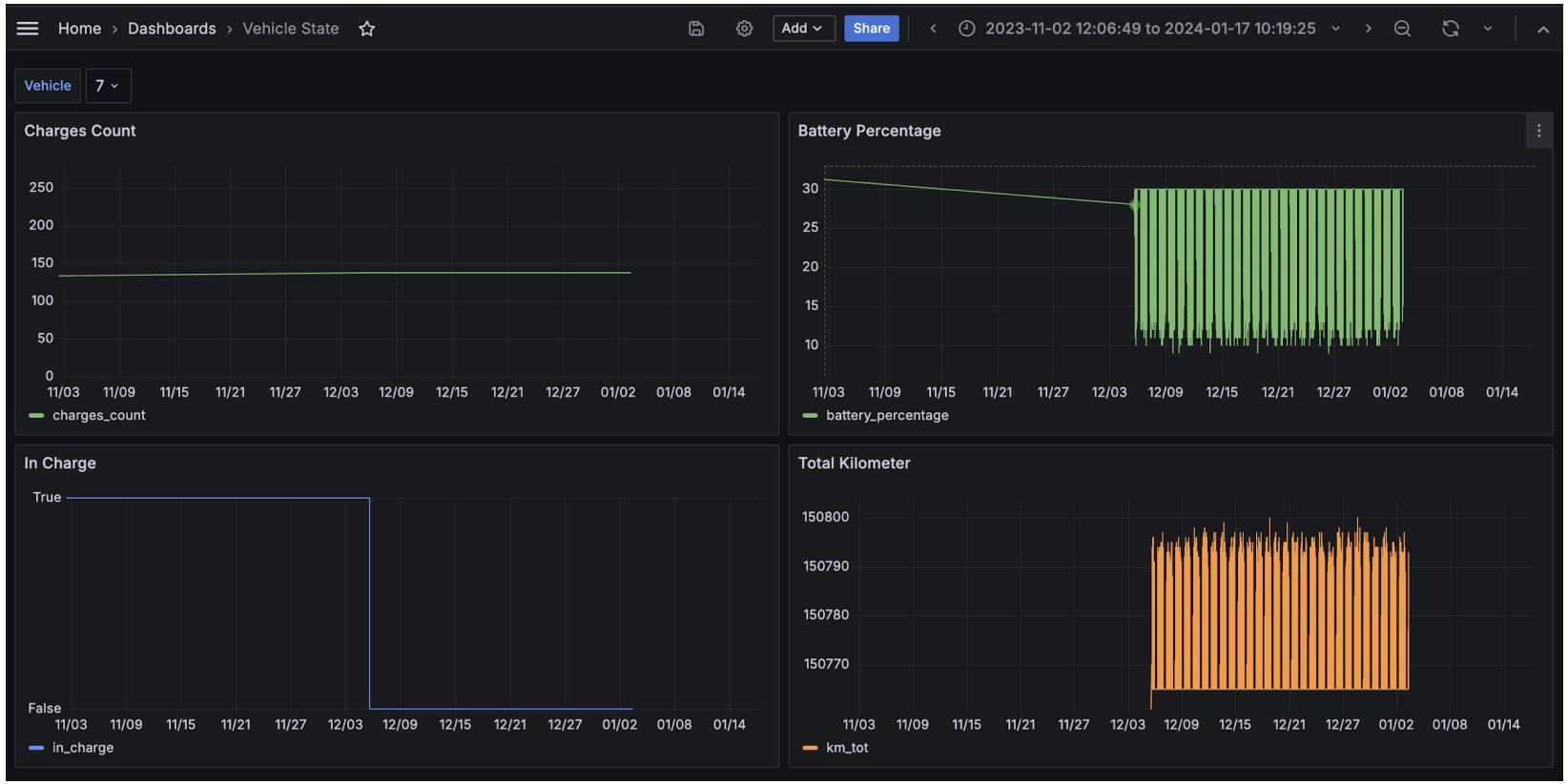
Data Pre-Processing Module

- Raw data is moved to the clean data bucket after pre-processing it
- After successful data storage in the clean bucket is it is removed from the raw data bucket.

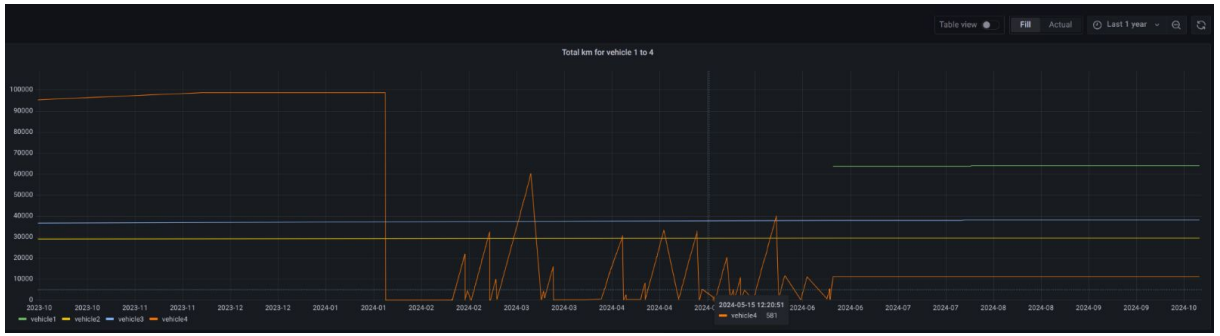


Data Visualization Module

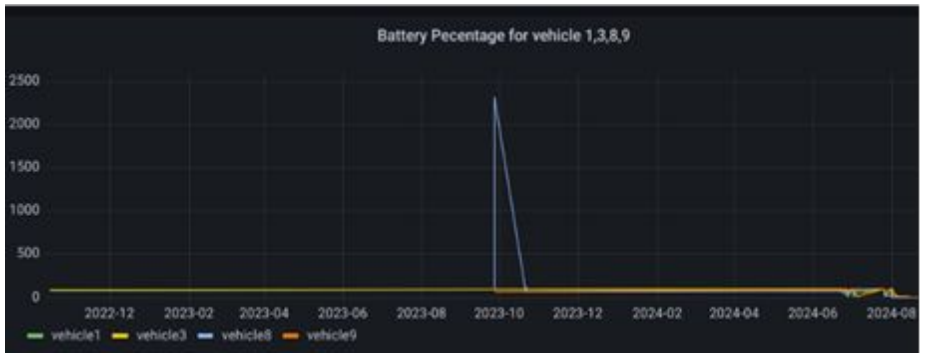
- Intuitive way to visualize and interact with data
- Make informed decision

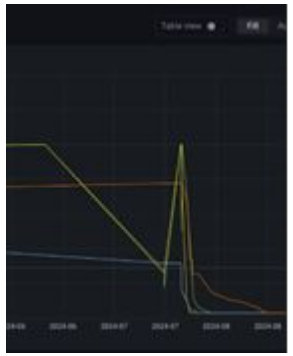


Visualize information regarding specific subject (i.e. specific vehicle)



Look at usage trends over a certain timespan

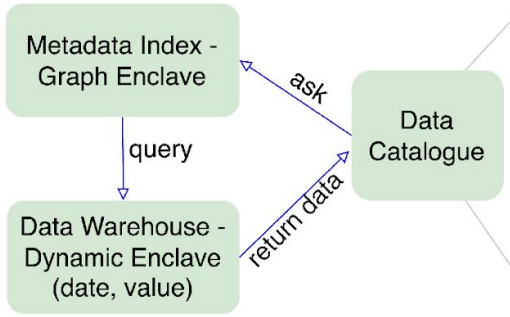


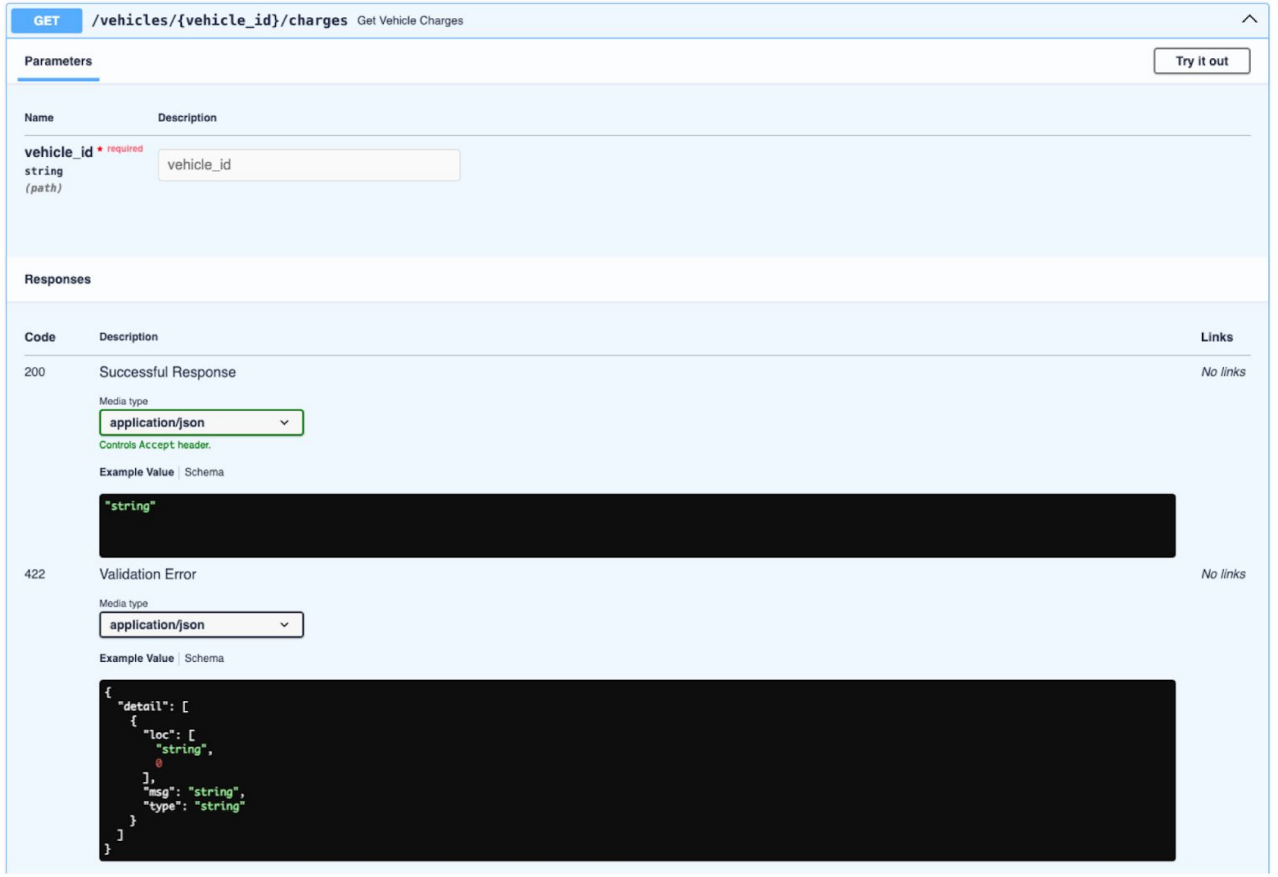


Find potential data anomaly

Data Catalogue Module

- Query specific data points





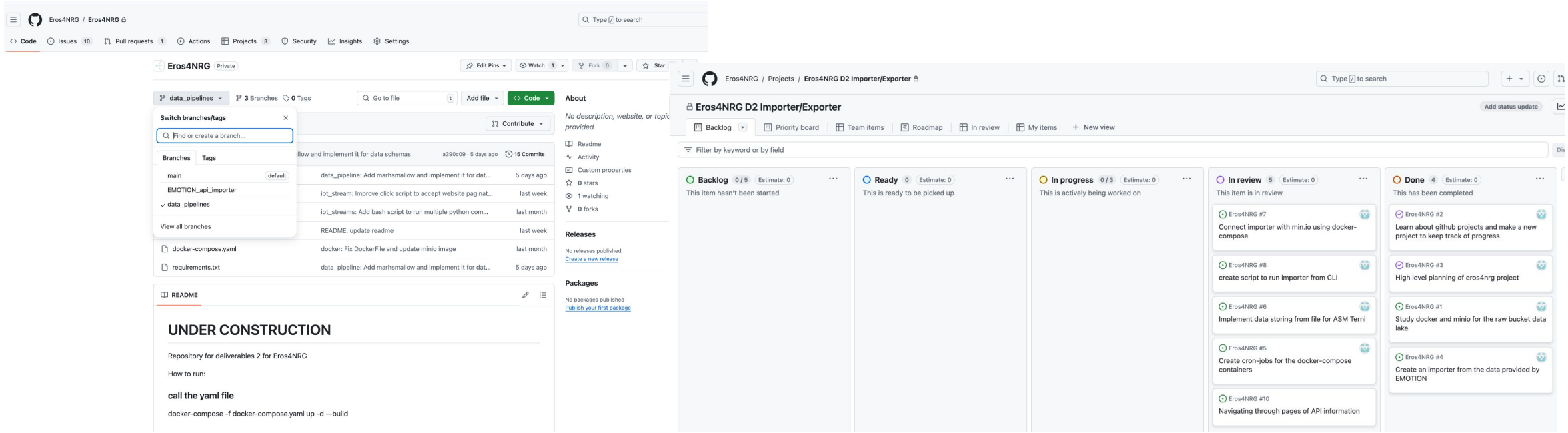
Next Steps

Several enhancements and additions are planned for the current implementation. These include:

1. Integrating an AI module for predictive data analysis
2. Implementing a zero-trust security module
3. Enhancing the dashboard to provide a richer user experience
4. Improving the data cleaning module

Eros4NRG Code Repository

https://github.com/Eros4NRG/



Eros4NRG Team

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- Favian Gozali - Software Engineer
- Aletta D’Cruz - D&C Specialist

Thanks for your attention