End To End Data Engineering Project using Healthcare Data

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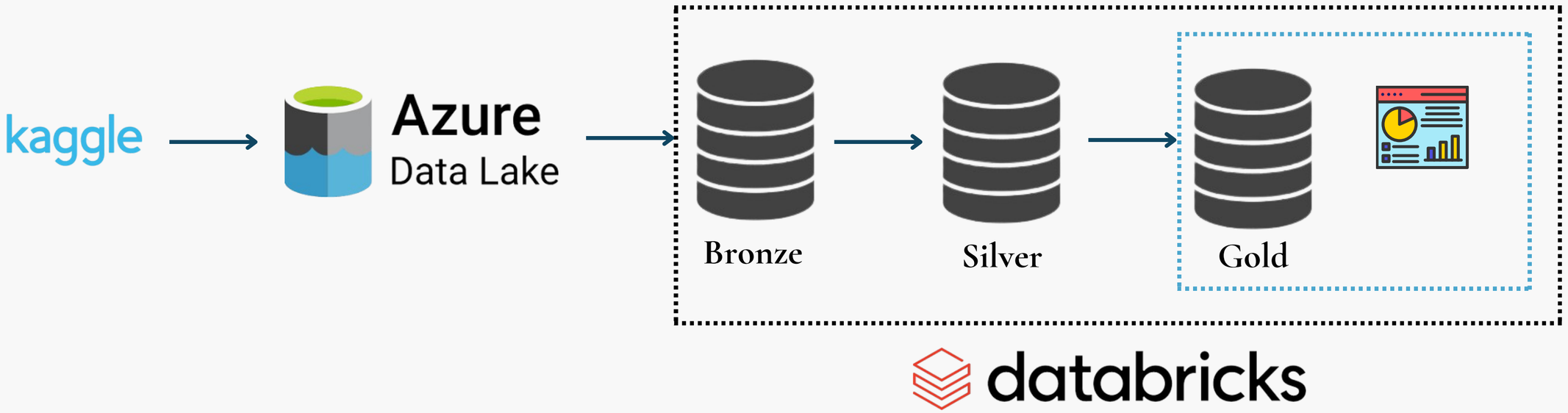
Problem Statement

Assessing Vaccine Coverage Trends

To analyze the trends in vaccination coverage for BCG, Hep B, and DTP among children under 1 year old in Malaysia from 2010 to 2018, determining if there has been a consistent increase, decrease, or fluctuation over the years.

Data Source : Kaggle (https://www.kaggle.com/datasets/thedevastator/who-malaysia-health-indicators)

Architecture Diagram



Detail explanation in each processing notebook

Bronze

- Get adls connection
- Read csv file from adls
- Write data as parquet file in Bronze

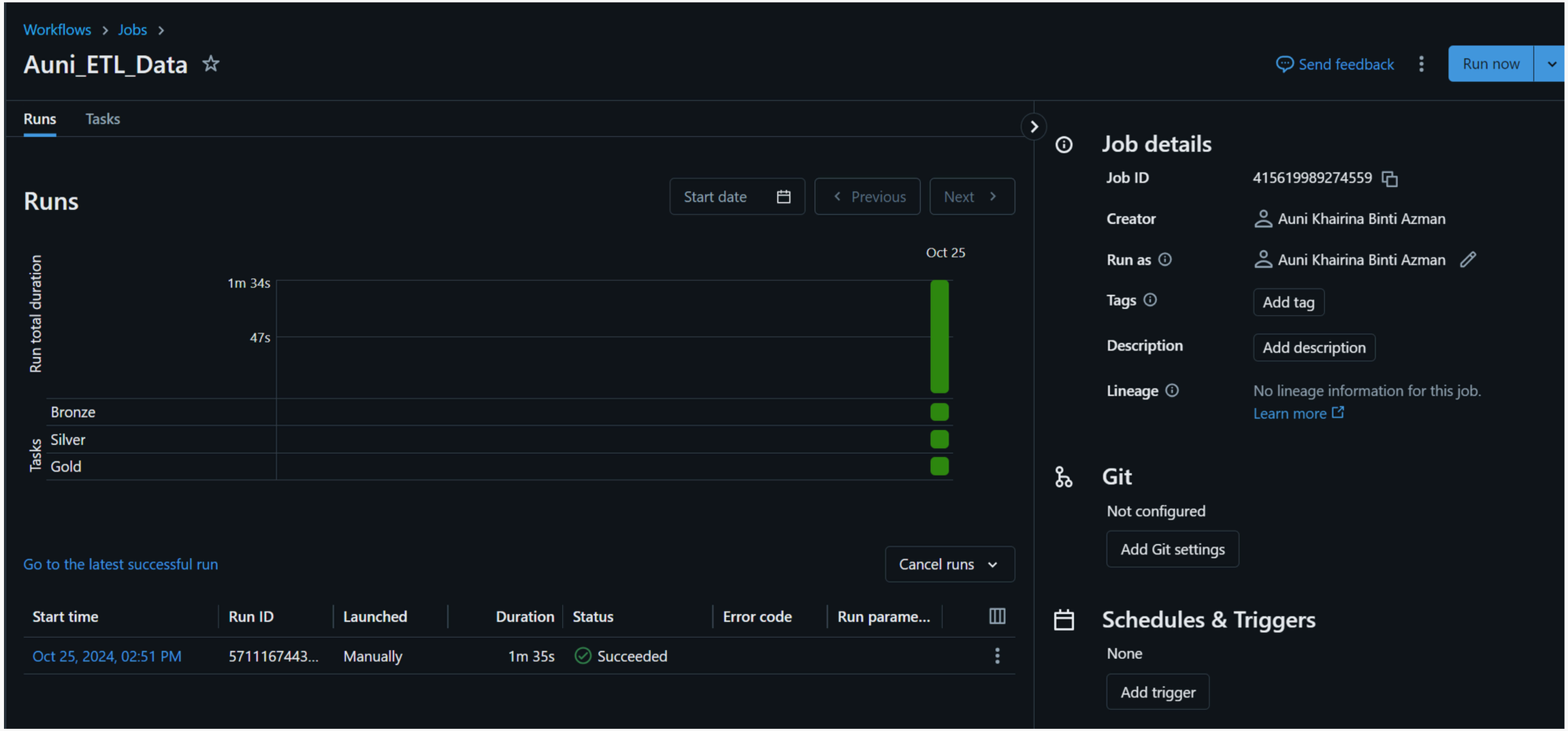
Silver

- Read parquet file from Bronze
- Remove anomaly from dataset (invalid data)
- Remove special characters & white space from variable column
- Convert value from String into Integer
- Select few columns to make analysis
- Write data as parquet file in Silver

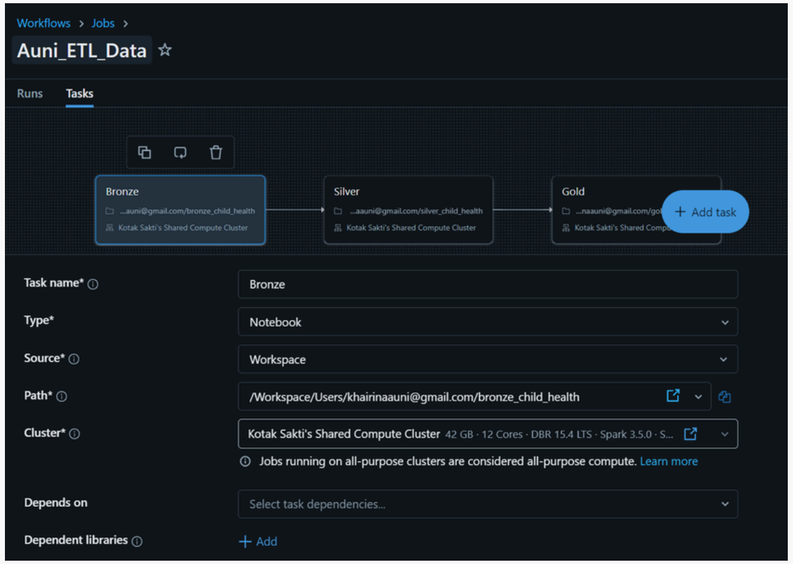
Gold

- Read cleaned BCG, DTaP, Hep B parquet files from Silver
- Combine those 3 files into a dataframe
- Add one more column “Immunization_Type”
- Filter “year” since 2010 until 2018 only
- Write data as parquet file in Gold
- Create line graph to visualize the data

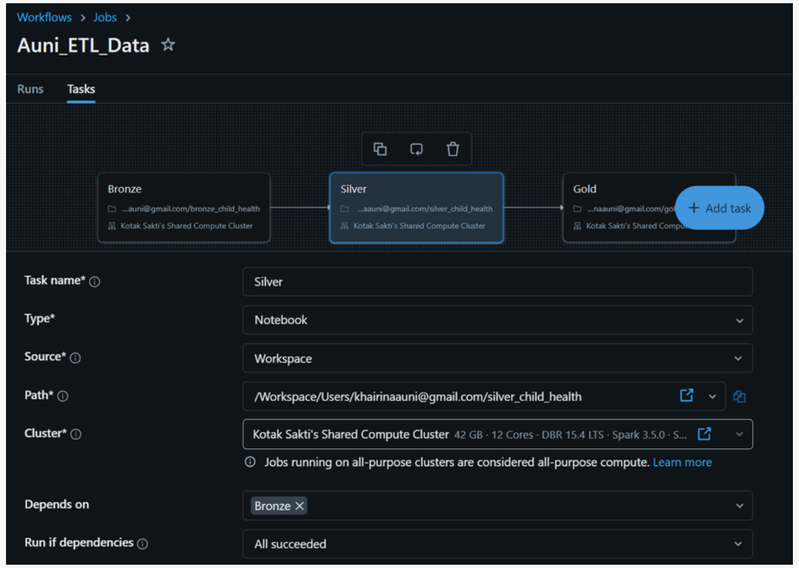
ETL Data Pipeline



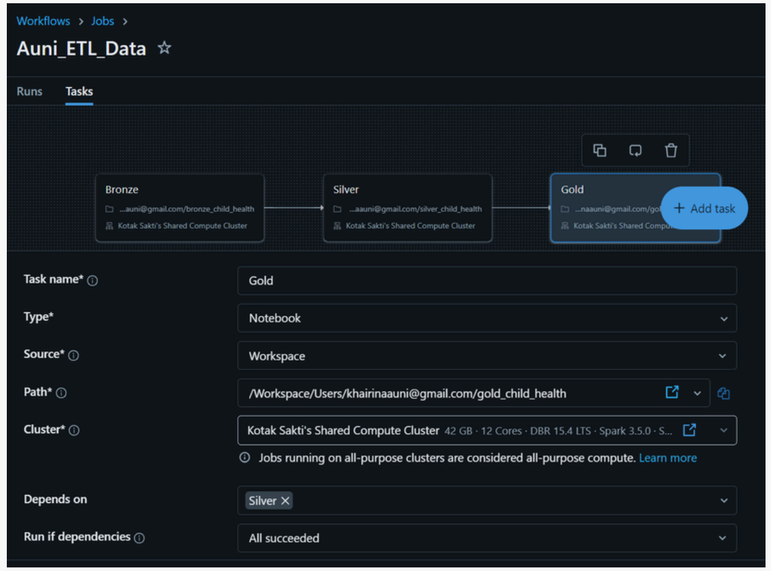
Detail explanation in each task in ETL



Bronze



Silver



Gold

Thank you