

Reflective Diary

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Company Name: Futures First

Title of the Project: Market Analysis in Natural Gas

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ELECTRONICS AND COMMUNICATION ENGINEERING DEPARTMENT
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Jan-June 2026

January 2026

Week number	Content
Week 1	
Week 2	
Week 3	Onboarding at Futures First; introduction to natural gas market fundamentals, supply/demand dynamics, and data sources.
Week 4	Initial setup of the local development environment; writing foundational Python scripts using Pandas and NumPy to clean historical market datasets.
Week 5	Reviewing core statistical concepts essential for time-series market analysis and designing the database schema for high-frequency data.

February 2026

Week number	Content
Week 1	Refining Python logic for calculating weekly storage flows and formulating the system architecture for an analytical dashboard.
Week 2	Researching and configuring PostgreSQL 18 with TimescaleDB extensions for optimized time-series data management.
Week 3	Ingesting over 32 million rows of minute-level historical data into the TimescaleDB database and optimizing hypertable queries.
Week 4	Collaborating with a coworker to link the database backend with the initial framework of the frontend analytics dashboard.
Week 5	Developing custom data parsers to handle complex datetime merges and anomalies in historical market datasets.

March 2026

Week number	Content
Week 1	Initiating statistical modeling to analyze the delta between expected estimates and actual EIA storage figures.
Week 2	Building a predictive model to quantify standard deviations and market adjustments in response to EIA report surprises.
Week 3	Commencing deep-dive correlation analysis between natural gas outright and calendar spreads using minute-level data.
Week 4	Compiling project documentation, preparing the Midway Report, and establishing Goals Reports for the first faculty evaluation.
Week 5	Finalizing the outright/spreads correlation analysis and integrating the visual findings into the central dashboard.

April 2026

Week number	Content
Week 1	
Week 2	
Week 3	
Week 4	
Week 5	

May 2026

Week number	Content
Week 1	
Week 2	
Week 3	
Week 4	
Week 5	

June 2026

Week number	Content
Week 1	
Week 2	
Week 3	
Week 4	
Week 5	