PORTFOLIO

DATA ANALYST

Welcome to my Portfolio! I am Sobia Khanam, a Data Analyst with a passion for uncovering insights and driving data-driven decision-making. Explore my work and see how I can help you leverage data to achieve your business goals.

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GitHub

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Portfolio

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ABOUT ME

WHO I AM

With over 2 years of experience in data analysis, I have a proven track record of turning raw data into meaningful information. My analytical skills, combined with a deep understanding of various industries, allow me to provide valuable insights that drive business success.

SKILLS & EXPERTISE

- ❖ Data Cleaning & Preparation
- ❖ Statistical Analysis
- ❖ Data Visualization
- ❖ SQL & Database Management
- ❖ Python for Data Analysis
- ❖ Machine Learning
- ❖ Business Intelligence Tool (Power BI)

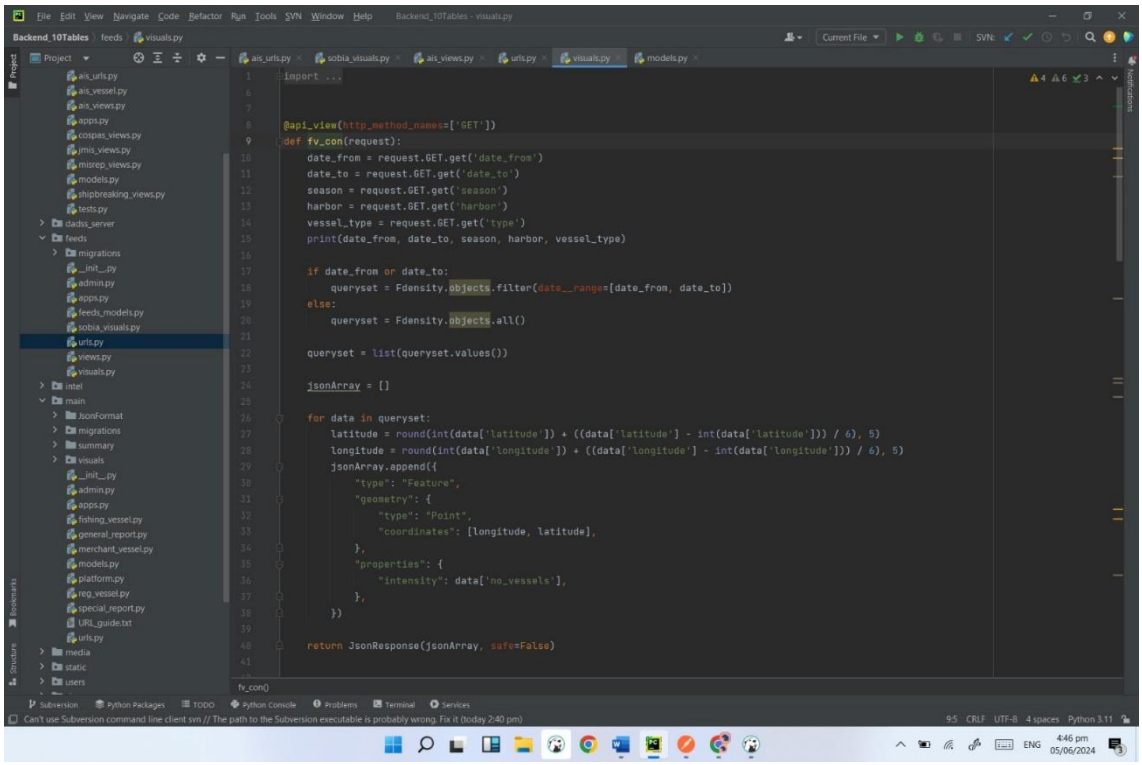
PORTFOLIO

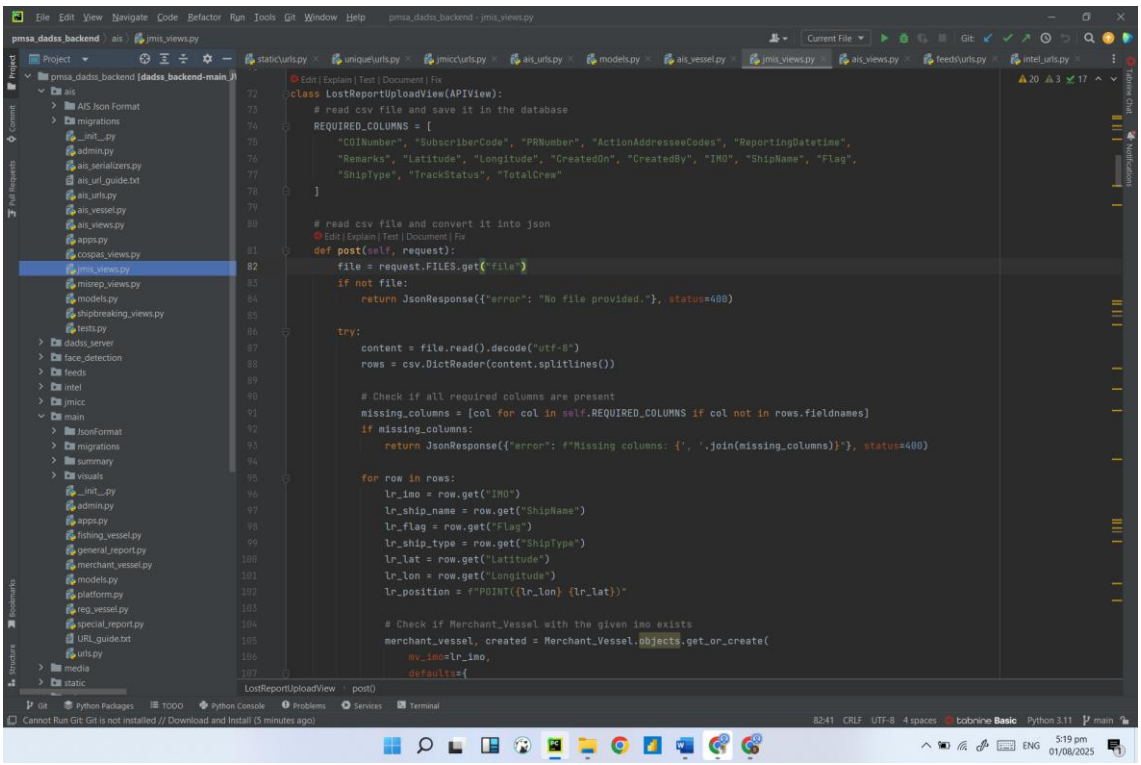
HIGHLIGHTS

DATA ANALYSIS & DECISION SUPPORT SYSTEM (DADSS)

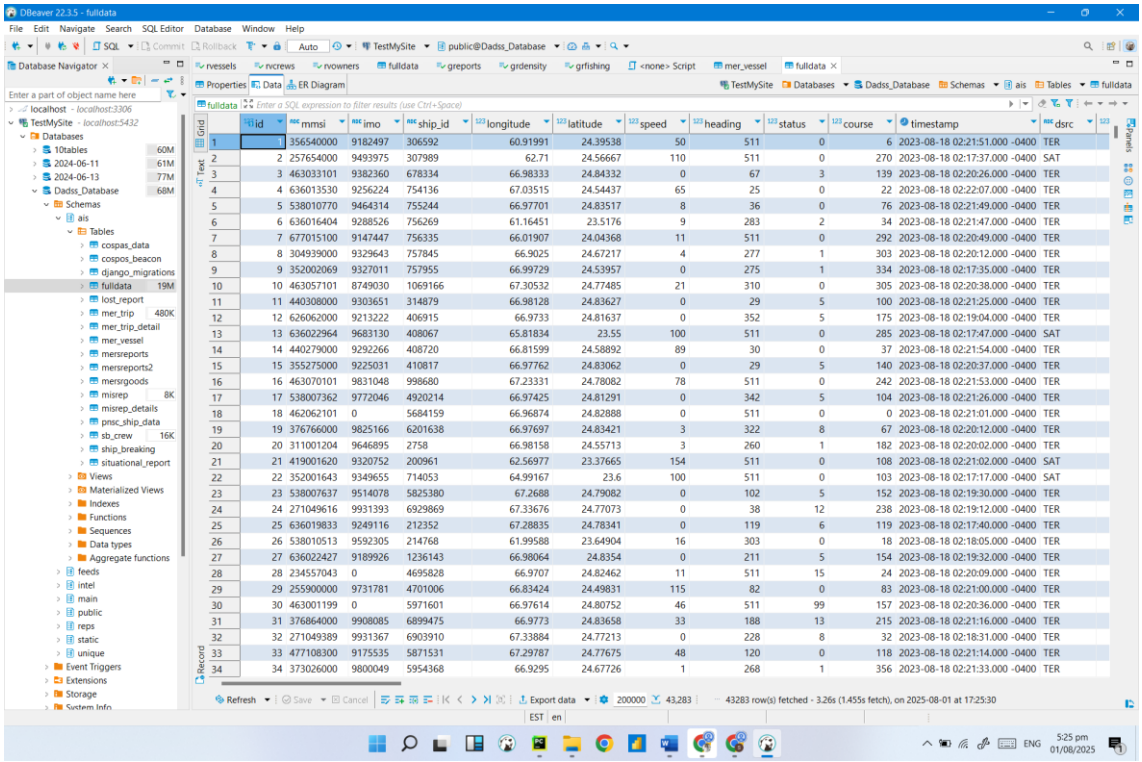
The DADSS project was designed to automate the collection, storage, analysis, and visualization of large-scale maritime data. The system integrates multiple data sources, applies rigorous data processing, and delivers actionable insights through advanced GIS analysis and dashboards. This end-to-end solution eliminates manual workflows and provides stakeholders with real-time, location-based intelligence. The key steps in this project include:

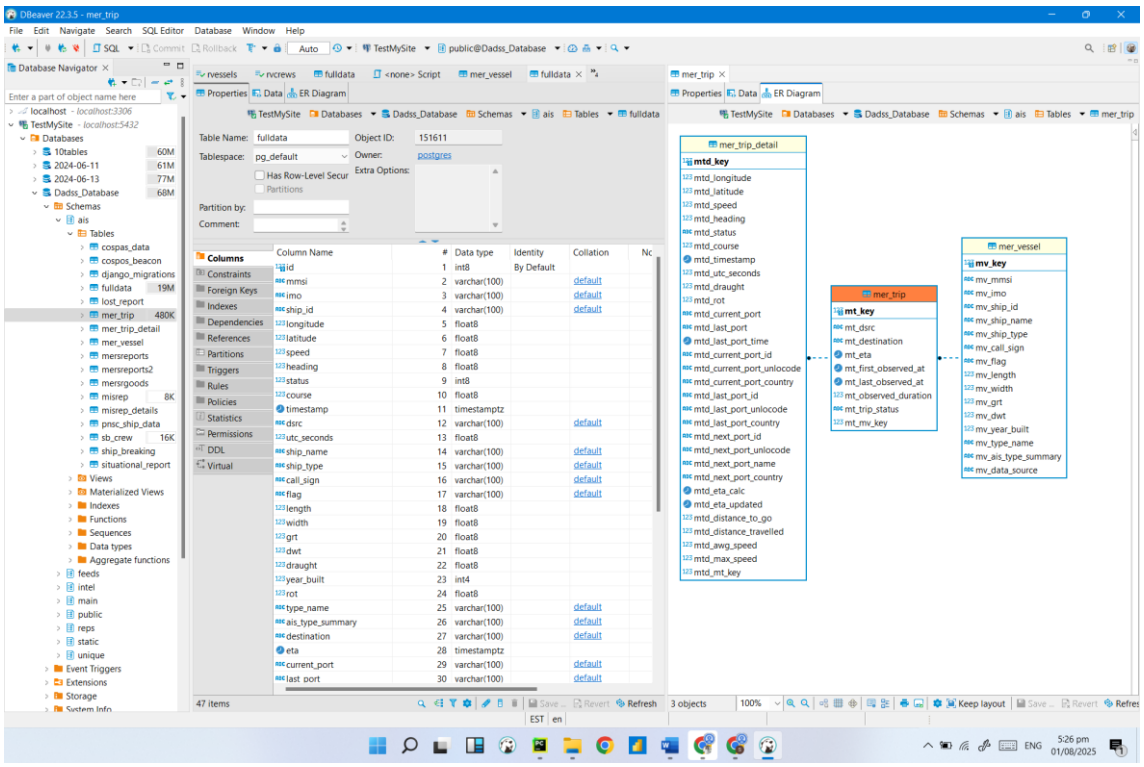
1. Backend Development:
    - Designed robust backend architecture in Django to handle dynamic data pipelines.
    - Created RESTful APIs for seamless data integration and external service communication.



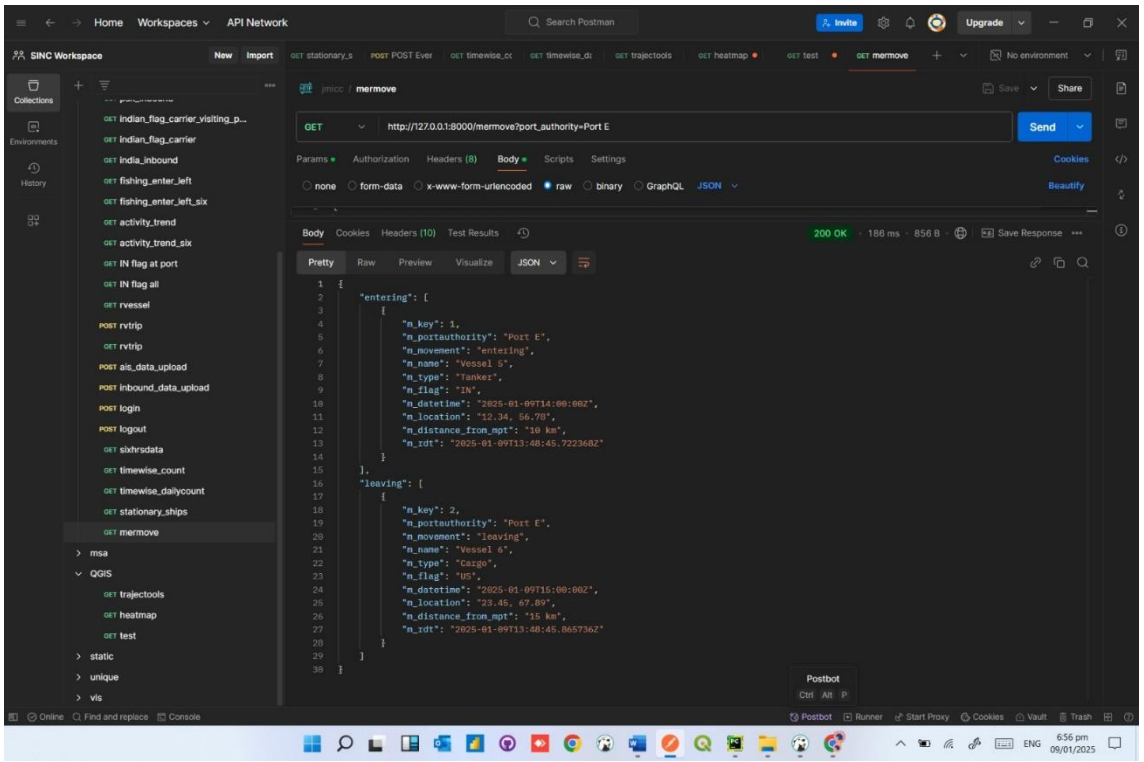


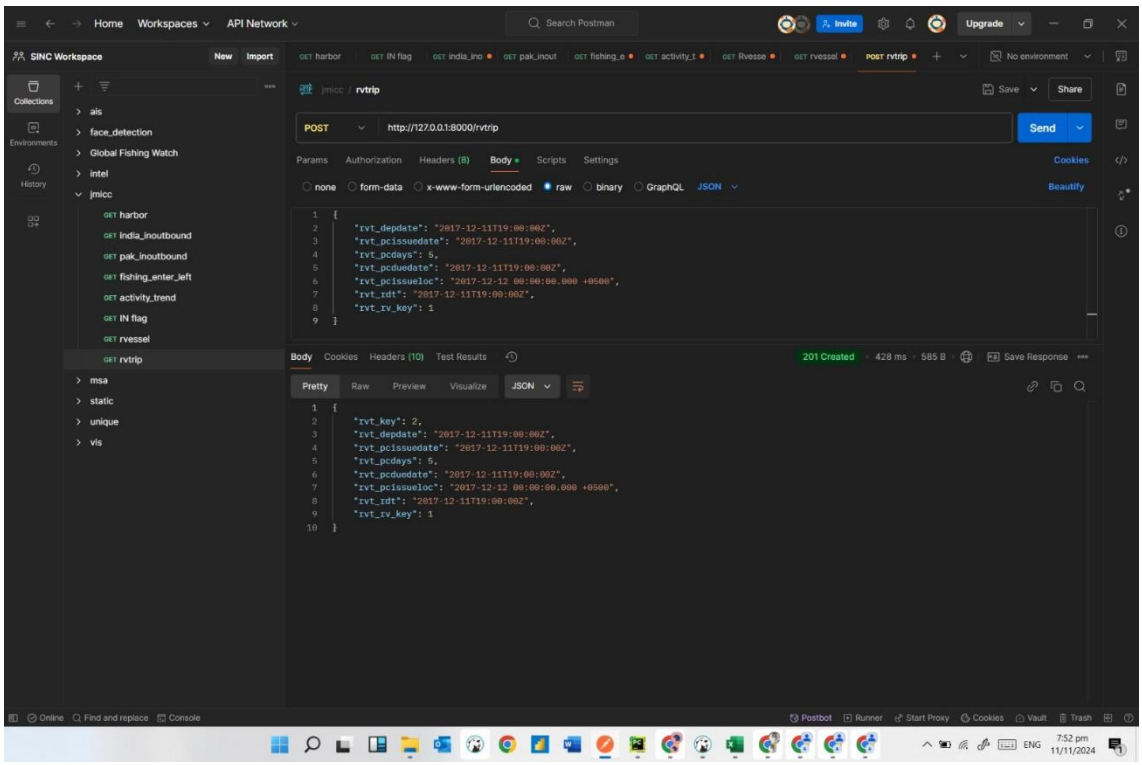
2. Database Design & Management:
   - Developed normalized PostgreSQL database schemas optimized for large datasets.
   - Implemented PostGIS for geospatial data storage and querying.



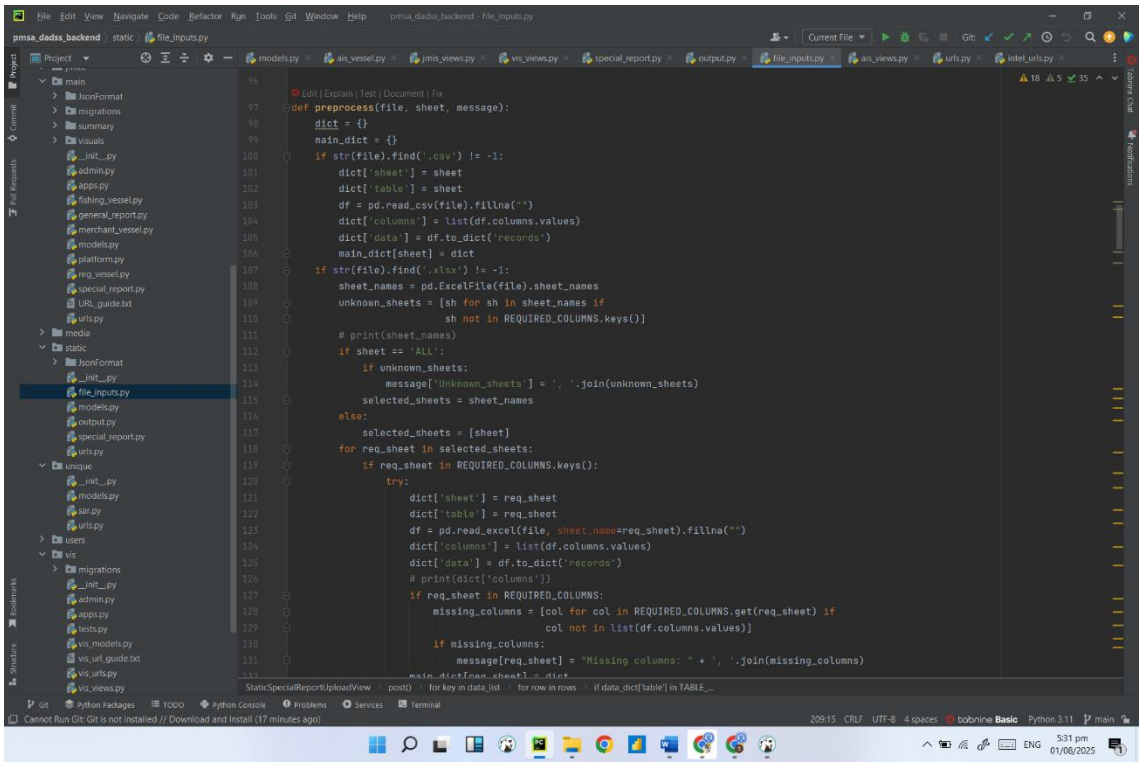


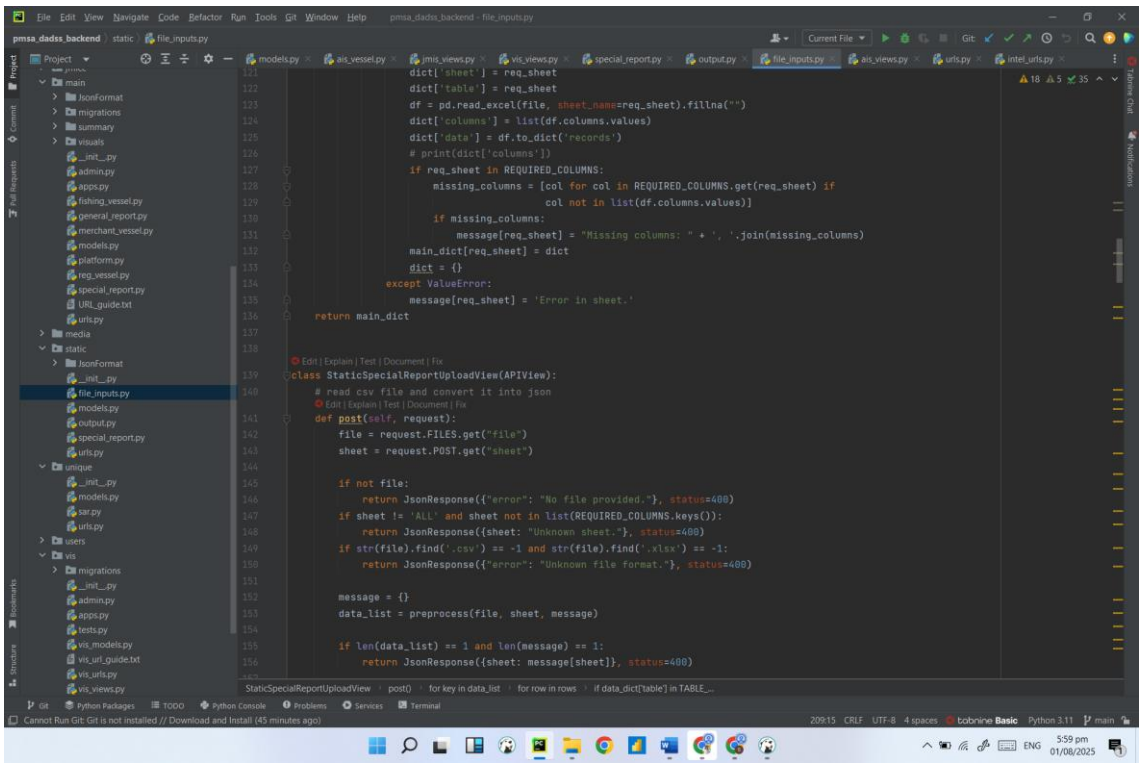
3. Data Ingestion & API Integration:
    - Configured automated pipelines to fetch live data from external APIs using Postman-tested endpoints.
    - Built scheduled scripts for continuous data synchronization.



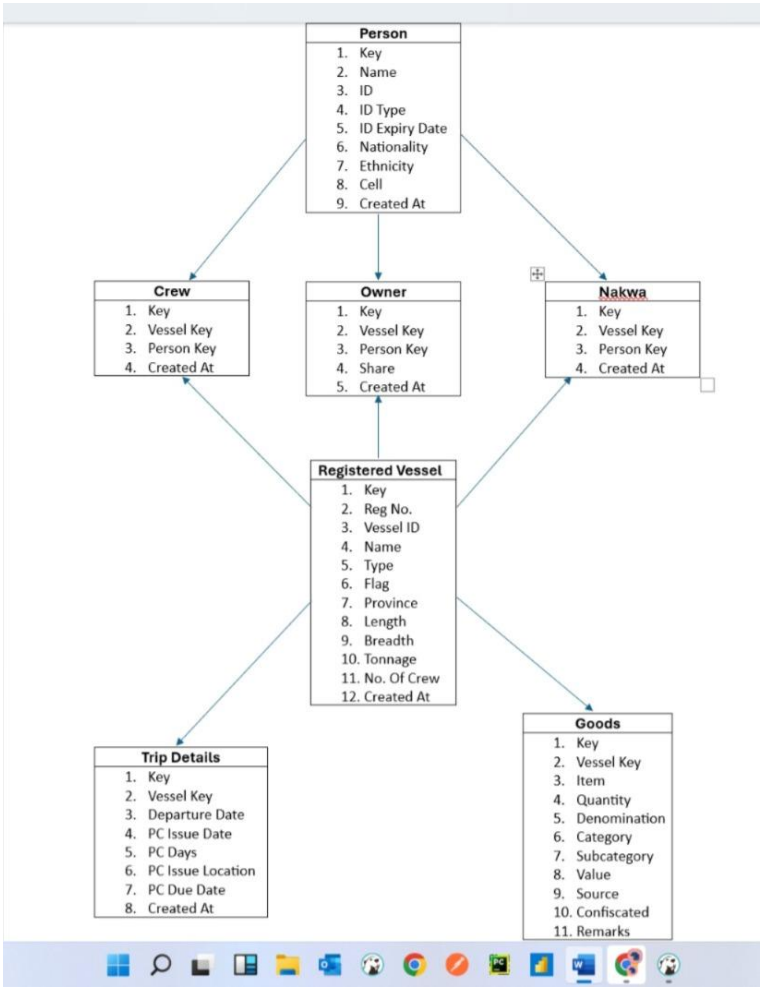


4. Data Cleaning & Preprocessing:
   - Implemented Python-based ETL processes to validate, clean, and enrich CSV and API data.
   - Addressed missing values, duplicate entries, and inconsistent formats before database insertion.



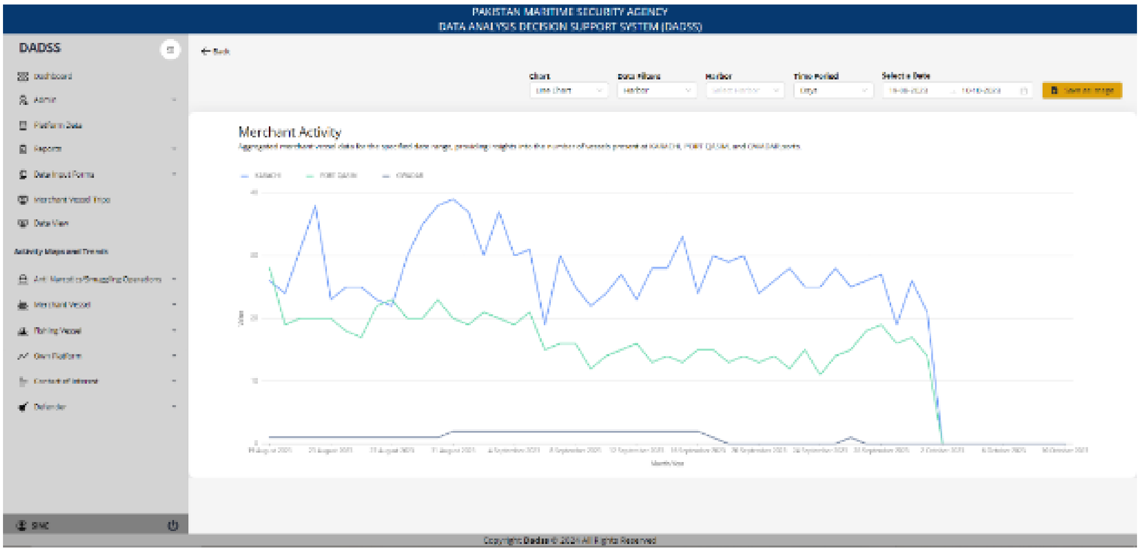


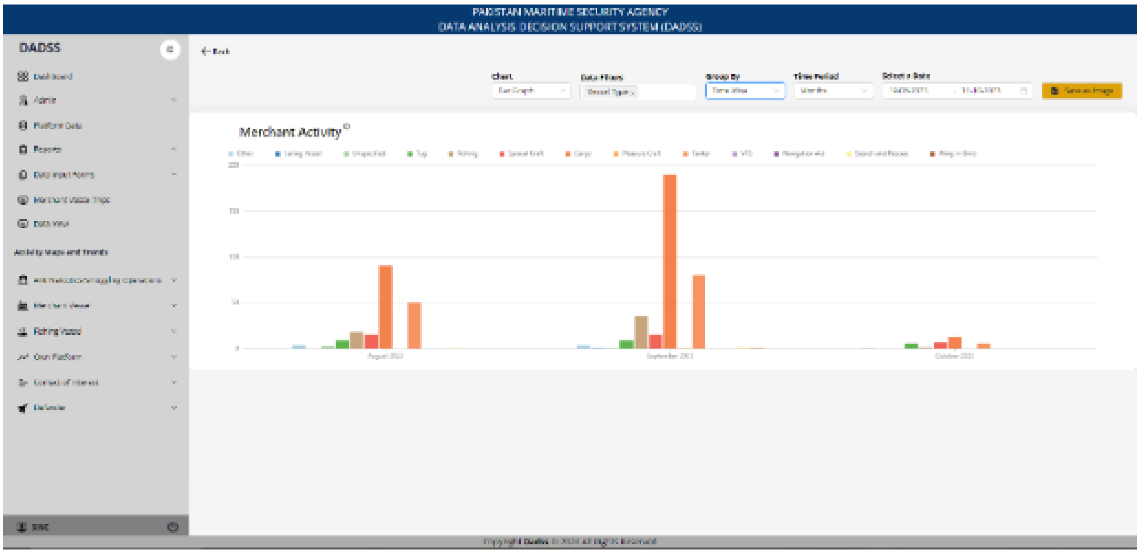
5. Data Modeling:
   - Established relational models connecting vessel details, trips, and activity metrics.
   - Designed foreign key relationships ensuring data integrity and high query performance.

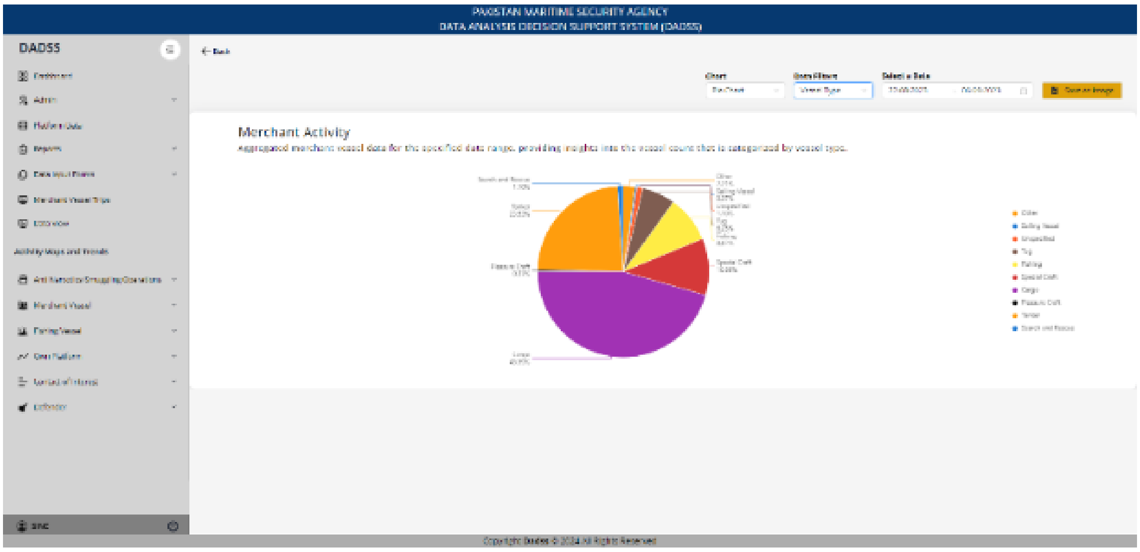


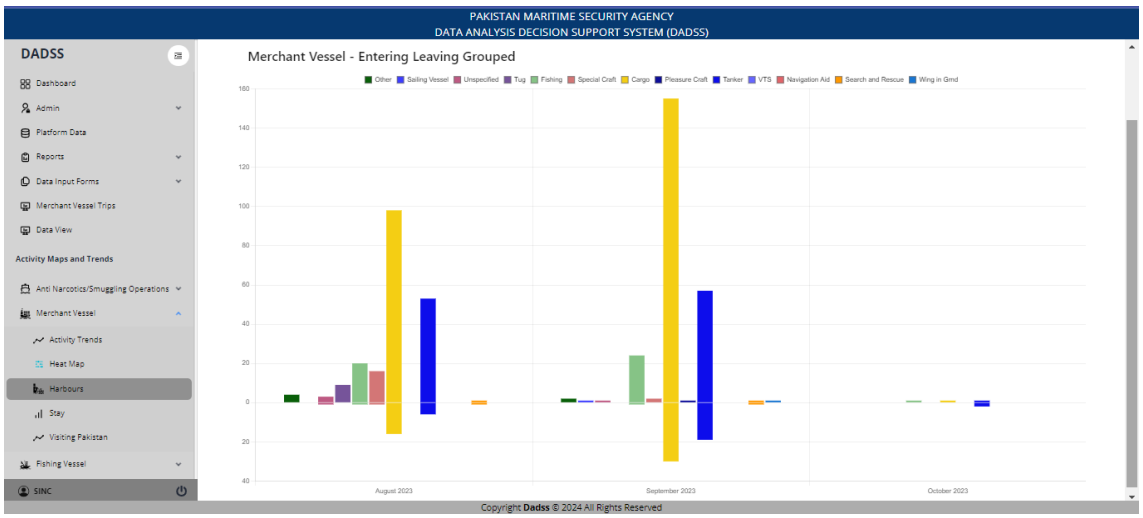
6. Data Visualization:

- Created custom dashboards and charts to represent key performance metrics and vessel activity.
- Utilized advanced visualization libraries for clarity and interactivity.

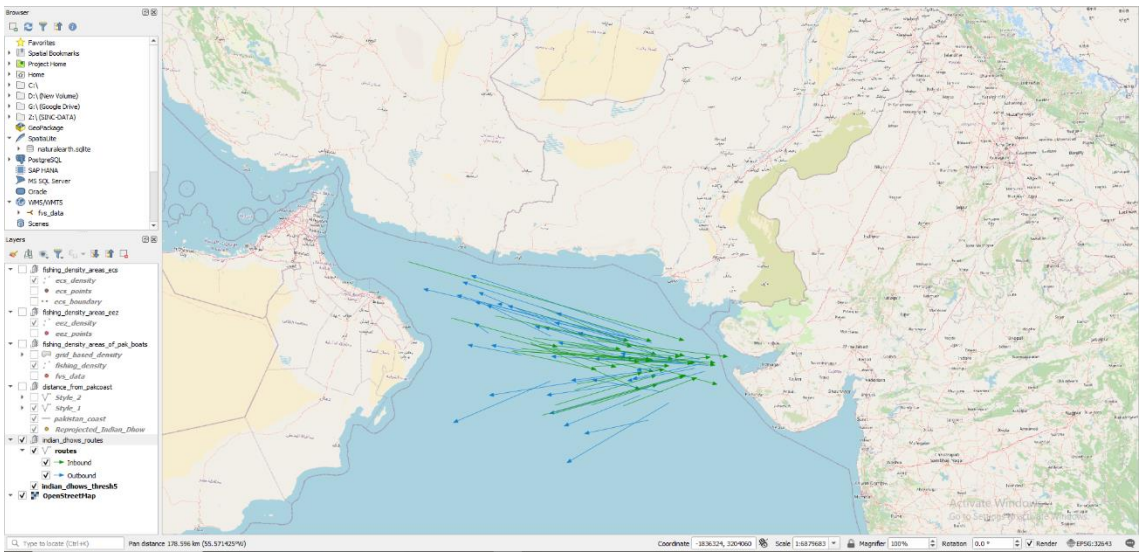


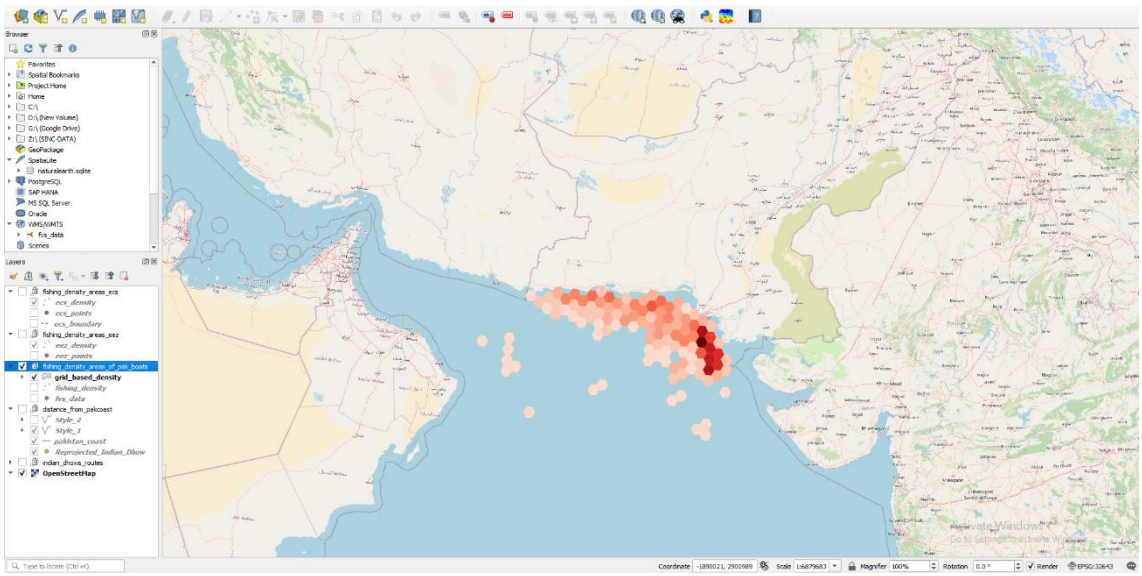


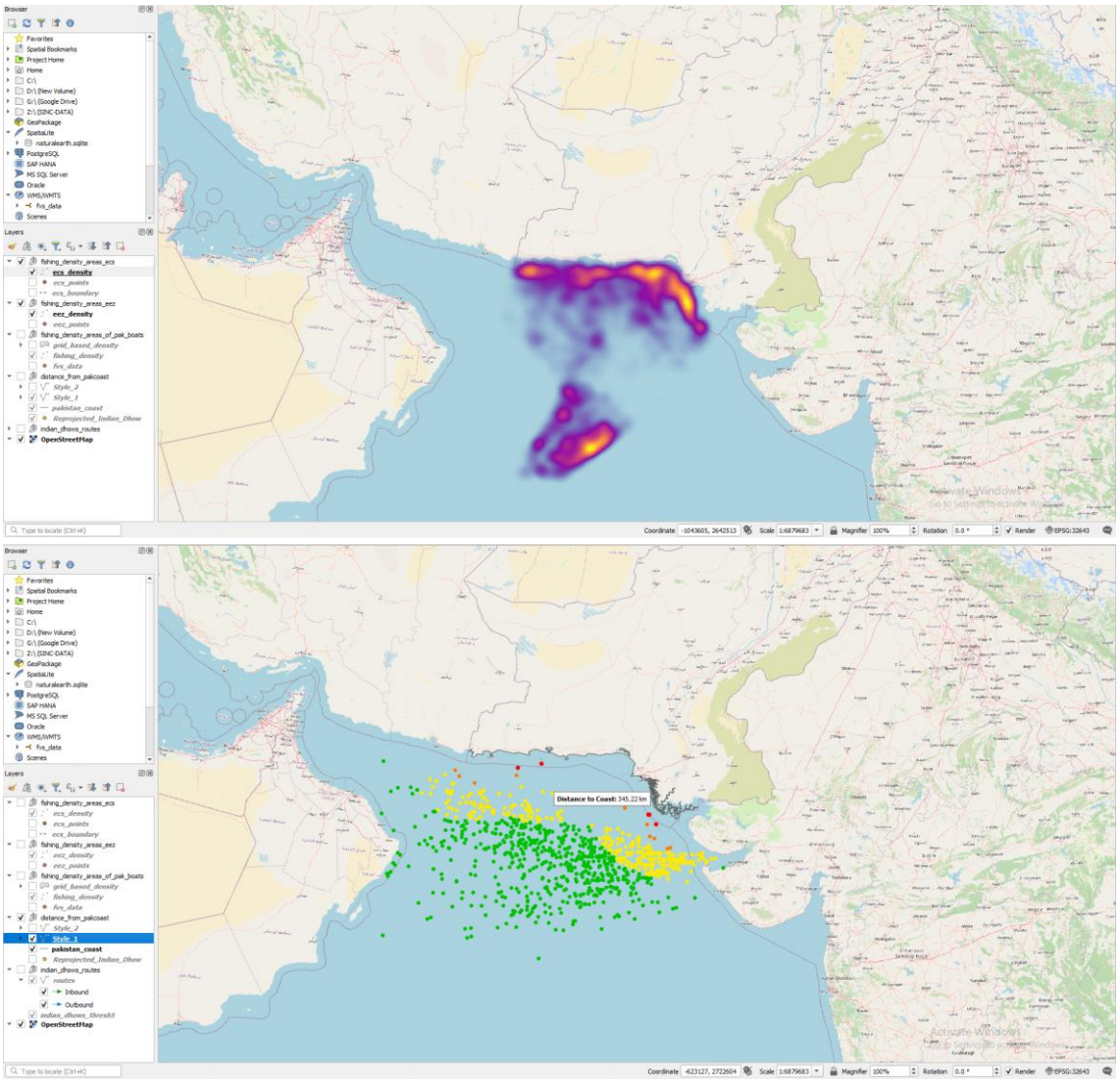




7. Spatio-Temporal GIS Analysis:
   - Performed detailed spatial and temporal analysis using QGIS and plugins like Time Manager.
   - Conducted heatmap, clustering (DBSCAN), and trajectory analysis to identify high-activity zones.
   - Integrated QGIS outputs into the system via QGIS Server for web-based mapping.



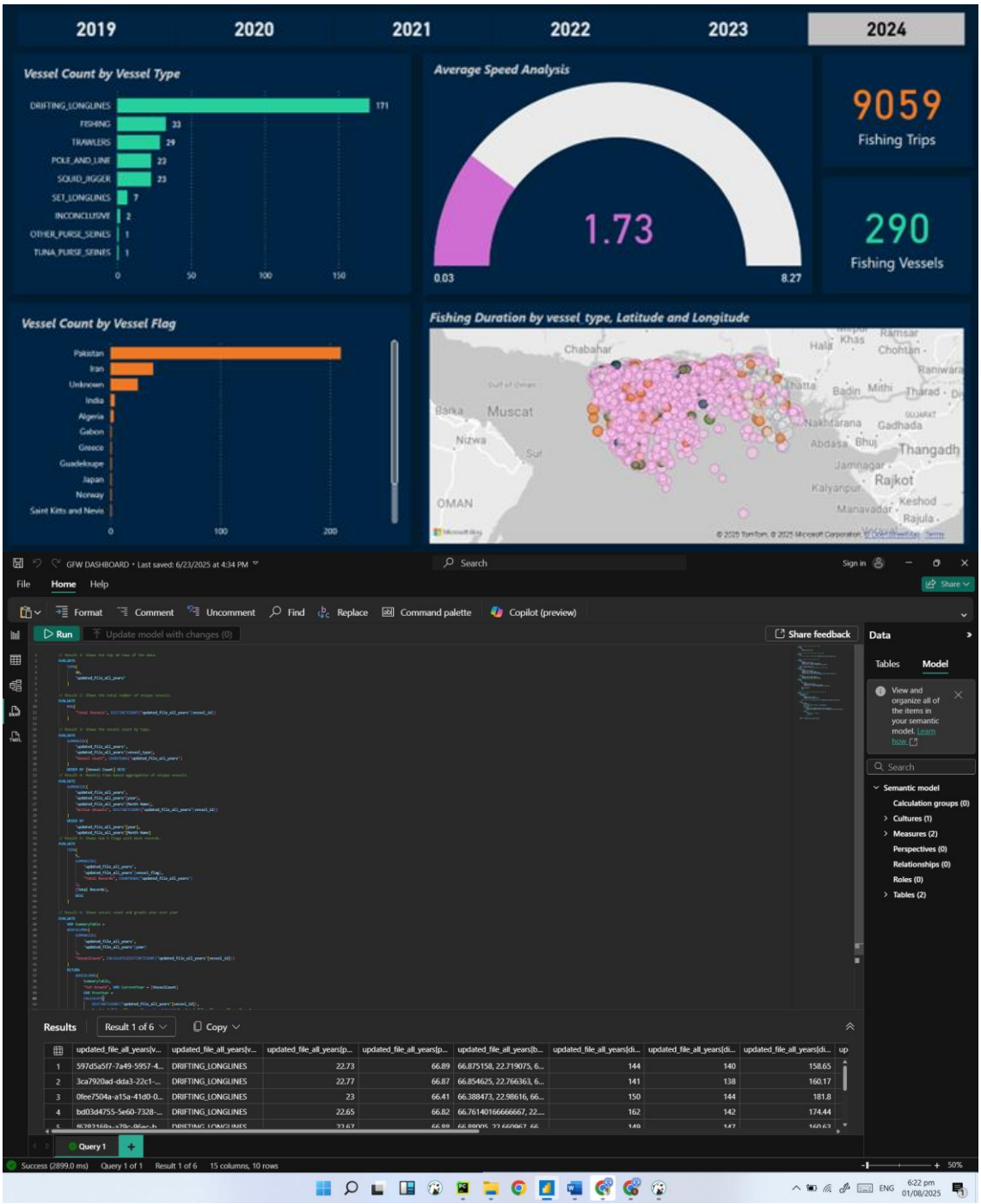




8. Reporting & Automation:
    - Generated automated analytical reports and alerts, significantly reducing manual efforts.
    - Enabled stakeholders to access real-time data visualizations and downloadable reports.

Power BI Maritime Vessel Dashboard with DAX Exploration

Designed a comprehensive Power BI dashboard to analyze maritime vessel activity using real-world geospatial and temporal data. The dashboard visualizes key metrics including vessel types, flag distribution, fishing trip counts, and average vessel speed. An interactive map plots fishing zones using latitude and longitude. Alongside, a set of DAX queries were implemented in Query View for deeper data exploration—covering yearly trends, monthly activity, flag-wise summaries, and vessel-type breakdowns.



CUSTOMER DATA ANALYSIS
KPMG DATA ANALYTICS INTERNSHIP

Conducted data quality assessment on customer and transactional datasets, including wealth segments and financial metrics, identifying gaps in completeness, validity, consistency, and uniqueness, prepared remediation recommendations. Gained exposure to financial datasets like those used in wealth management, brokerage, and securities environments. Designed and delivered visual dashboards in Power BI for client-style presentations, covering segmentation, trend analysis, and KPI insights.