

BFSI

Banking Finance Services and Insurance Risk Management and Fraud Tolerance

~ HARSHIDA SHAILY (00127272)

Agenda

- Data Ingestion and Processing Setup
- Batch and Real-Time Processing
- Risk and Fraud Detection Implementation
- Customer Insights and Segmentation
- Service Optimization and Forecasting

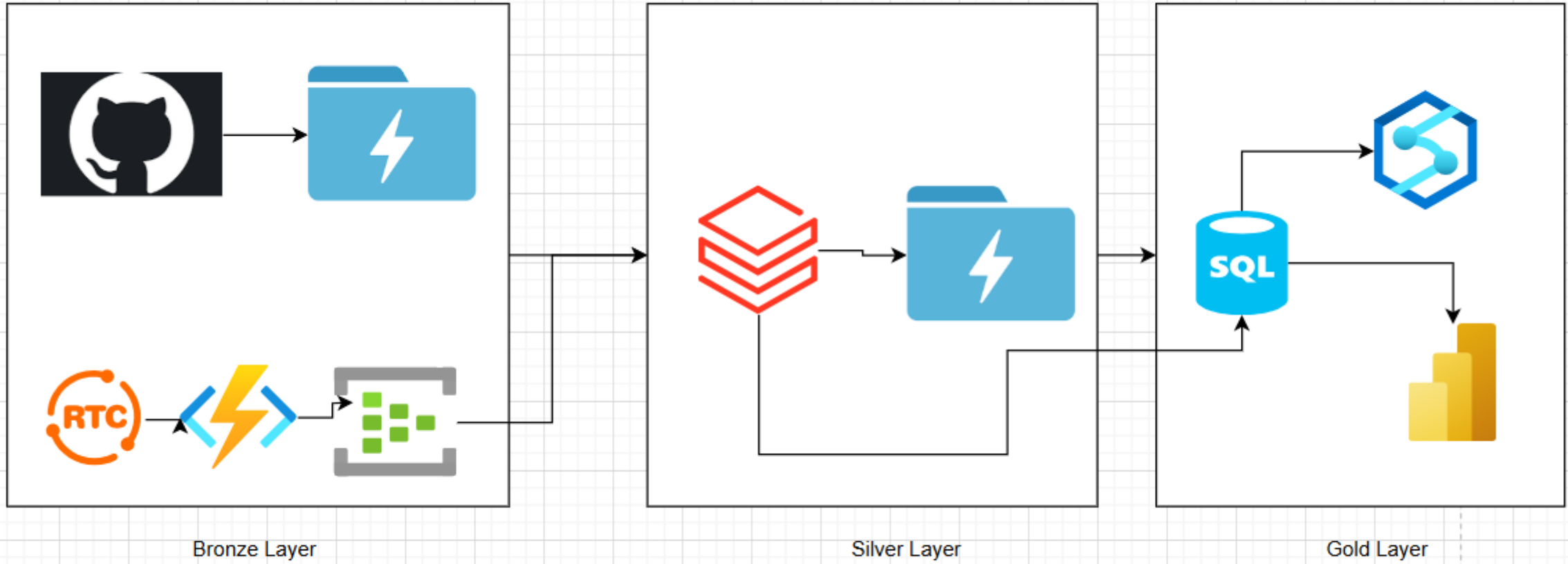


Introduction Of Problem Statement

The BFSI sector requires a robust Azure-based ETL pipeline to process historical and real-time transaction data for customer insights and risk analytics. The solution must enhance customer satisfaction, mitigate risks, and optimize services by integrating batch processing, real-time fraud detection, sentiment analysis, and demand forecasting using various Azure services.



Architecture



Data Source and Ingestion



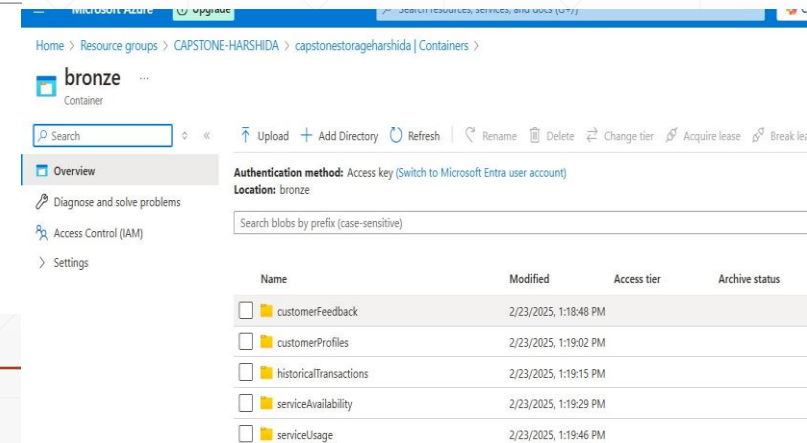
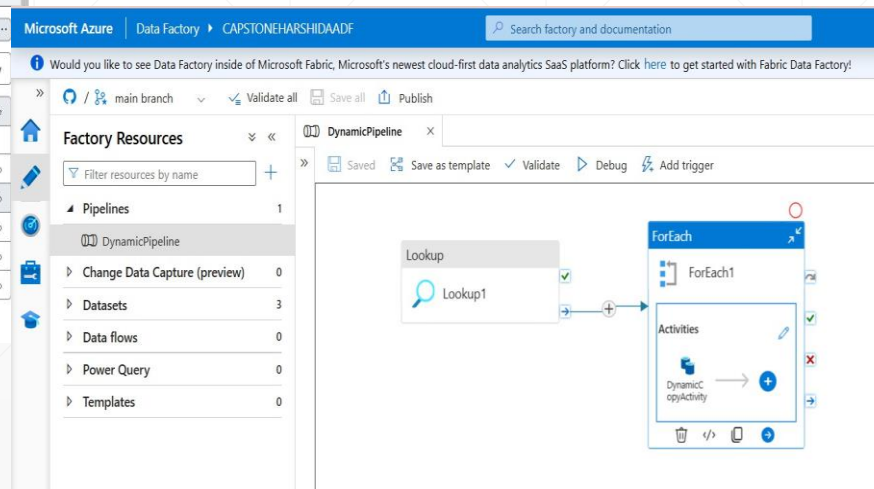
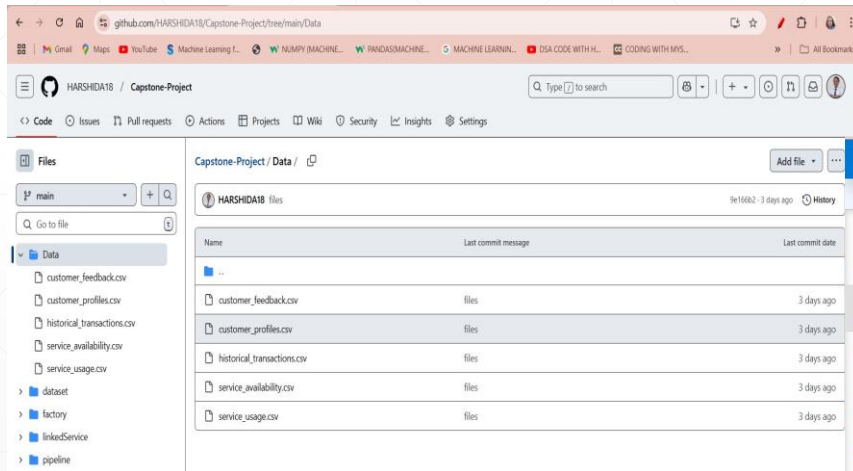
Github



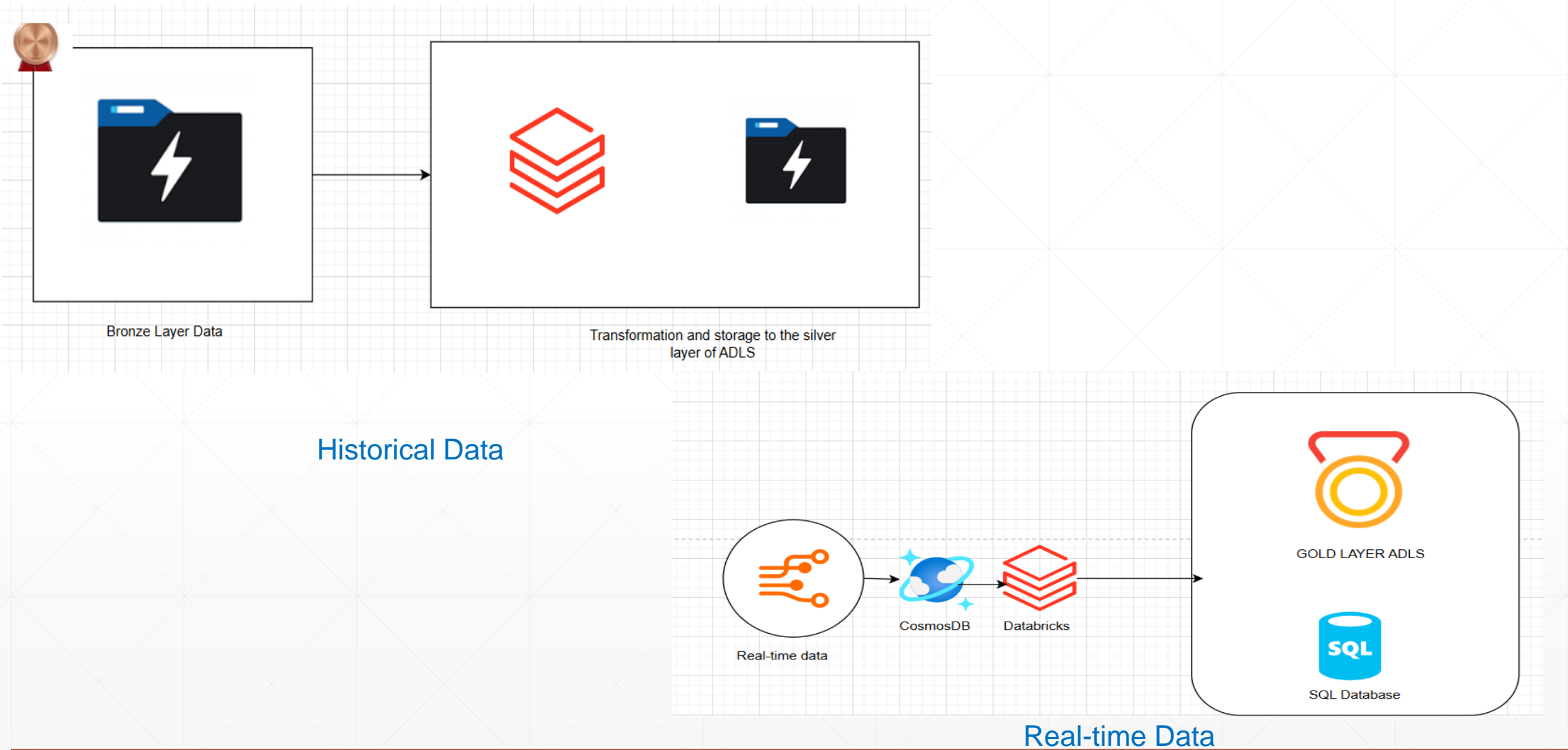
Azure Data Factory



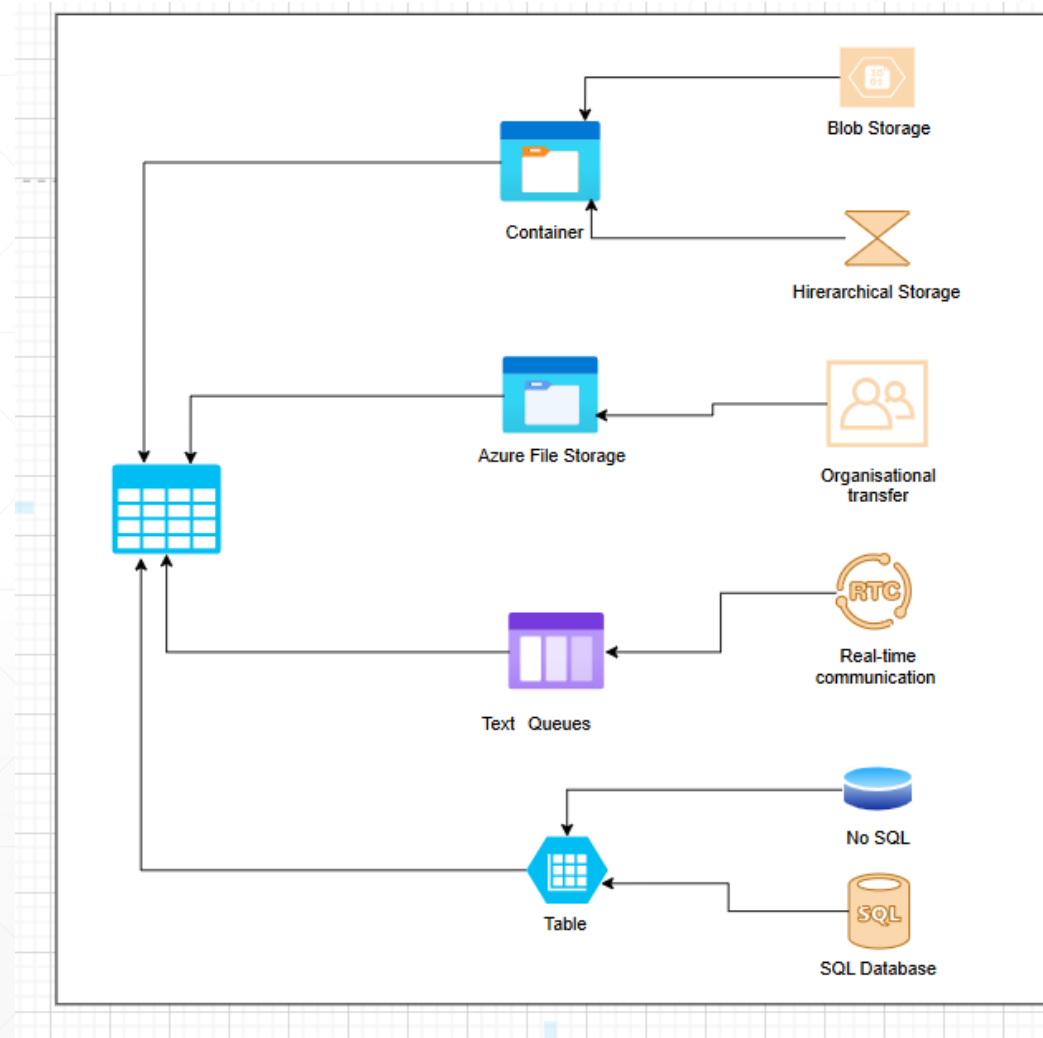
Azure DataLake Gen2



Storage Mechanism and Management

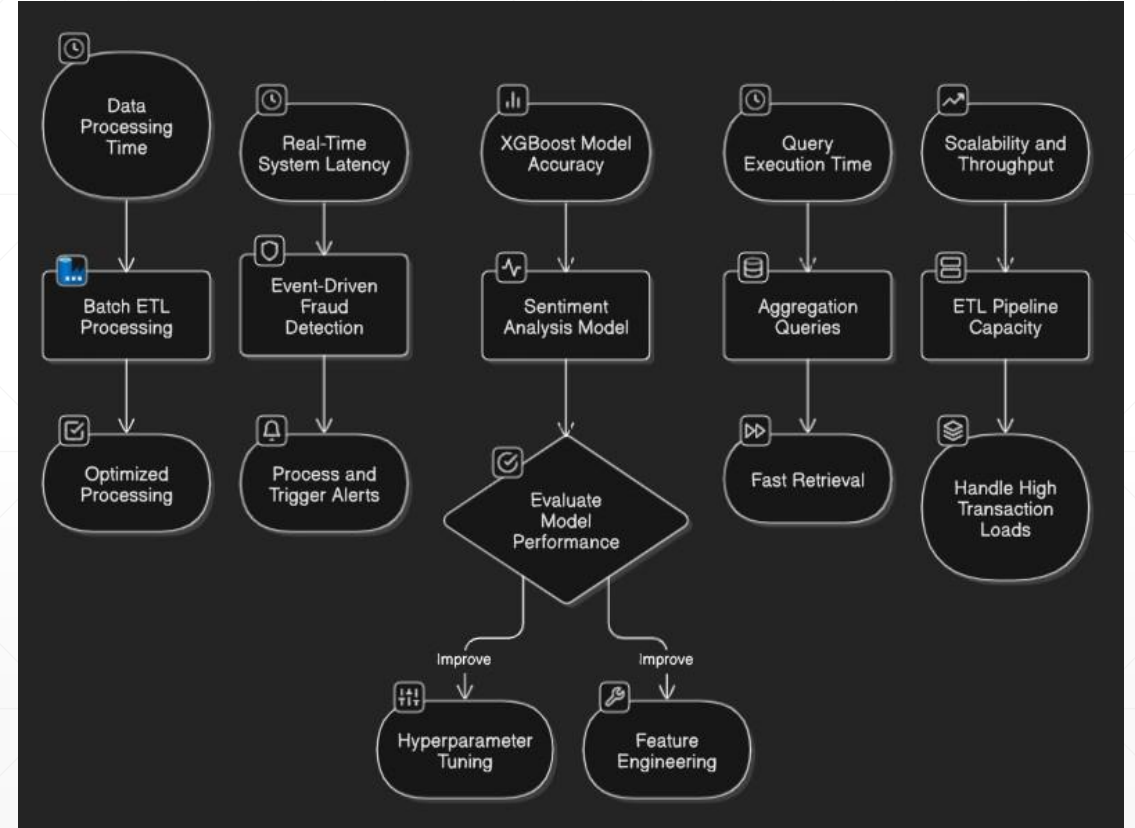


Storage Mechanism and Management

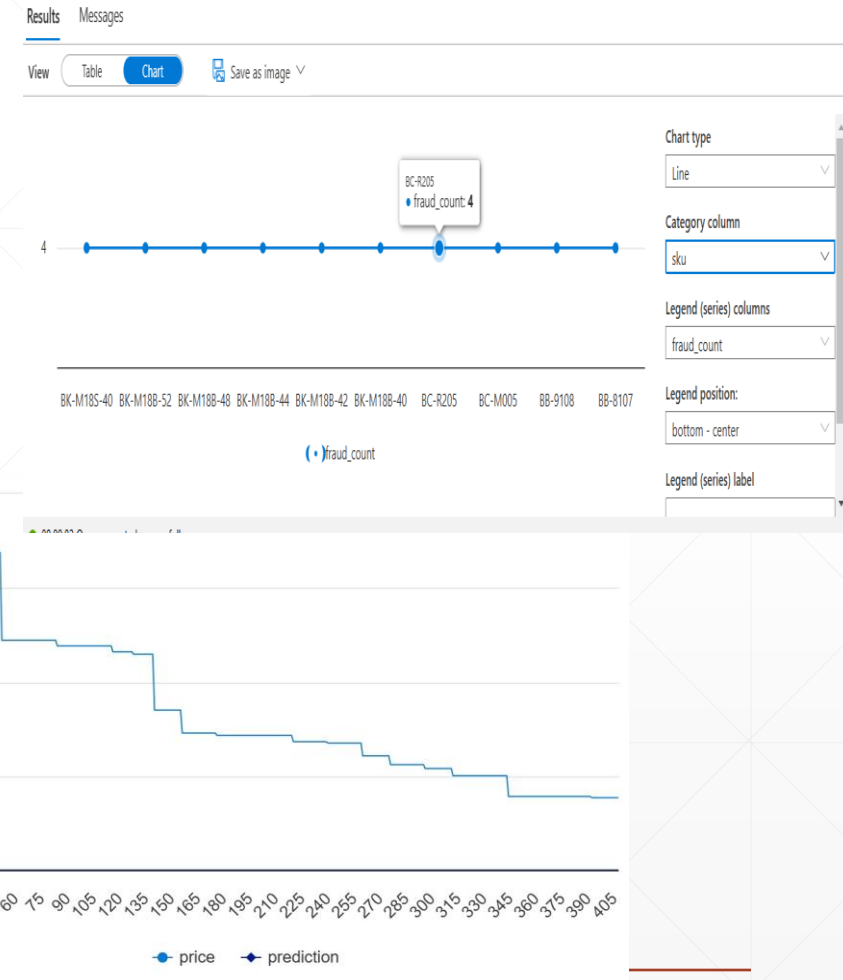
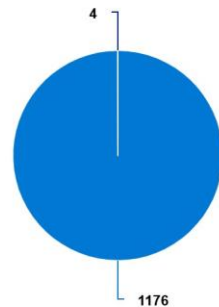


Data Processing and Quality Measures

- Data Ingestion and Processing Setup
- Batch and Real-Time Processing
- Risk and Fraud Detection Implementation
- Customer Insights and Segmentation
- Service Optimization and Forecasting



- Efficient Batch and Streaming Processing
- Real-Time fraud detection implementation
- RBAC for secure data access
- Customer segmentation and Risk Analysis
- Service Optimization and Demand Forecasting



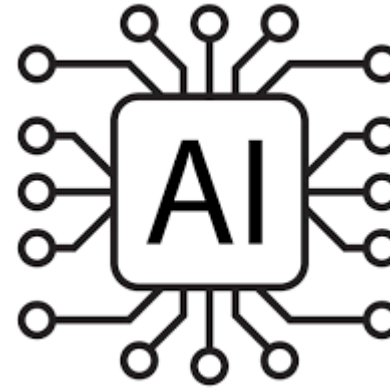
Results and Business Impacts

- Enhanced Fraud Detection Accuracy → Reduced Financial Losses
- Improved Customer Risk Assessment → Better Loan and Credit Decisions
- Optimized Service Demand Forecasting → Efficient Resource Allocation
- Secure Data Access via RBAC → Compliance and Data Protection
- Increased Customer Satisfaction Levels → Higher Retention and Revenue Growth



Scalability and Future Work

- Auto-Scaling for High Data Load
- AI-Driven Risk Prediction Models
- Multi-Cloud Integration for Flexibility
- Advanced Real-Time Analytics Expansion
- Enhanced RBAC and Security Policies
- Introducing partitioning of the clusters



Future

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DATA STREAMING



Challenges and Lessons Learnt

- Integration of Real-time Data
- Transformation of data and identifying the attributes
- Synapse sink account
- ETL and ETL pipelines and it's endeavours .
- Azure Data factory , Synapse , Azure Databricks



Conclusion and Final Takeaways

The Azure-based ETL pipeline for BFSI enables seamless integration of historical and real-time data, ensuring robust customer insights, fraud detection, and risk management. By leveraging Azure Data Factory, Synapse, and Databricks, the system enhances data transformation, security, and scalability, leading to better business decision-making and operational efficiency.

