

Final Project Team Roles and Details

- Project Information

Group Code	KFS1_AIS4_M1e
Track Name	Data Engineering
Project Title	Production Quality Management and Monitoring System using Data Engineering, Data Lake, and Data Warehouse with Microsoft Solutions.

- Team Members and Roles

	Student Name	ID Number	Role in the Project	Responsibilities
1	Mohamed Elsayed Atwan	30109101500051	Project Leader & Data Integration Engineer	<p>Led the overall project development and coordinated team efforts.</p> <p>Designed the data ingestion architecture and integrated various data sources into the Data Lake using Azure Data Factory.</p> <p>Set up the connection between production line systems and the Azure Data Lake to capture real-time data (environmental and mechanical performance).</p> <p>Ensured seamless data flow from raw sources to the structured database and Data Warehouse.</p>
2	Sayed Ahmed Tag-Edin	30409291502393	Data Collection & ETL Engineer	<p>Created and maintained ETL pipelines using Azure Data Factory to move data from the Data Lake to the Data Warehouse.</p> <p>Set up the infrastructure to collect real-time sensor data from production lines and stored it in the Data Lake.</p> <p>Designed and implemented processes for transforming and cleaning the raw data to make it suitable for analysis.</p> <p>Coordinated with the storage team to ensure the proper transformation of structured and unstructured data for effective storage.</p>
3	Mostafa Mohamed Elborhamy	30412231500473	Data Storage Specialist	<p>Designed and managed the Azure Synapse Analytics Data Warehouse for storing structured data such as product quality and performance metrics.</p> <p>Integrated the Data Warehouse with SQL Server to handle structured production data and ensure smooth querying capabilities.</p> <p>Worked closely with the ETL engineer to optimize the data flow and ensure efficient storage.</p> <p>Monitored and optimized storage solutions to handle large volumes of data from multiple production lines.</p>

4	Mohammed Khairy Ahmed Fayyad	30201011502237	Data Pipeline Optimization Engineer	<p>Monitored the performance of the data pipelines, ensuring optimal data flow and processing speeds.</p> <p>Identified bottlenecks in the ETL and data integration processes and implemented optimizations.</p> <p>Ensured the scalability of the system to handle increased data volumes as production scaled.</p> <p>Maintained the health of the data pipeline and ensured real-time data processing and movement were consistent.</p>
5	Mohamed Ezzeldeen Dawod	30403218800094	Data Governance & Quality Control Engineer	<p>Developed and implemented data governance strategies to ensure data quality and compliance.</p> <p>Designed data validation checks to ensure the accuracy, consistency, and completeness of data across the pipeline.</p> <p>Worked with the rest of the team to ensure data quality at every stage, from ingestion to storage.</p> <p>Monitored the system for any anomalies in data flow and took corrective actions to maintain the quality of production data.</p>
6	Ali Yasser Ali Al-Fara	30501011506139	Data Processing Engineer	<p>Managed the real-time processing of data as it was ingested from production lines, ensuring that it was clean, structured, and ready for storage.</p> <p>Set up processing frameworks using SQL and Azure Synapse to handle both structured and unstructured data.</p> <p>Conducted initial data analysis to flag potential issues or inconsistencies before storing the data in the Data Warehouse.</p> <p>Optimized data transformation processes for efficiency and scalability, ensuring the processed data met the project's quality standards.</p>