Project Name : Downtime Shield

Objective:

The goal of this project is to analyze downtime occurrences in the manufacturing process, identify root causes, and provide actionable insights to minimize production interruptions. By leveraging historical data, statistical analysis, and predictive modeling, we aim to improve overall equipment effectiveness (OEE) and reduce lost production time.

Problem Statement:

Unplanned downtime leads to significant production losses, increased operational costs, and inefficiencies. The lack of data-driven insights makes it challenging to pinpoint key failure points and optimize maintenance schedules.

Scope of Work:

- Analyze frequency, duration, and trends in downtime events.
- Provide visualization dashboards and reports for decision-making.

Project timeline:

Phase	Task	Start Date	End Date	Owner
Phase 1: Excel (Data Collection & Cleaning)	Modify the Data with Python Code	Feb 1	Feb 3	Kenzy Ashraf
	Clean & preprocess data in Excel (handle missing values, standardize format) & Conduct initial summary statistics & trends in Excel	Feb 4	Feb 10	Carol Nader
	Visualization	Feb 11	Feb 14	Mera Amr & Olivia Ashraf
	Dashboard	Feb 15	Feb 17	John Mamdouh & Ziad Abdullah
Phase 2: SQL (Data Extraction & Transformation)	Write SQL queries to analyze downtime frequency & causes	Feb 18	Feb 23	Mera Amr & Kenzy Ashraf
	Identify downtime trends using SQL aggregation functions	Feb 24	Feb 28	Carol Nader & Olivia Ashraf
Phase 3: Python (Advanced Analysis & Visualization)	Load SQL data into Python for analysis & Perform predictive analytics	Mar 1	Mar 5	Ziad Abdullah
	Create visualizations in Python (Matplotlib, Seaborn)	Mar 6	Mar 20	John Mamdouh
Phase 4: Tableau & Power BI (Dashboard Development)	Design initial dashboards in Tableau & Power BI			All Analysts
	Refine visualizations and insights for presentation			All Analysts

Phase	Task	Start Date	End Date	Owner
	Conduct final dashboard testing and review			All Analysts
Final Reporting & Presentation	Write project report (findings, insights, recommendations)	May 1	May 5	All Analysts
	Develop final presentation slides	May 6	May 8	All Analysts
	Present findings to stakeholders	May 9	May 9	All Analysts