**A green arrow and letter e

Description automatically generated**A logo of a global education

Description automatically generated with medium confidence

**Graduation Project Proposal Form**

### **1. Project Information**

* **Project Title:** UK Train Rides
* **Course/Track:** Data Analytics - Google Data Analyst Specialist
* **Team Members:**
  + Mohamed Mahmoud Mohamed Eldesoky
  + Mohamed Alaa Mahmoud Younis
  + Omar Amgad Ali Hussein

### **2. Project Overview**

**Objective:**  
Analyze UK train ride data to uncover patterns, enhance operational efficiency, and improve customer satisfaction through data-driven insights.

**Scope of Work:**

* Collect and process data on train schedules, delays, and maintenance logs.
* Develop predictive models for performance analysis.
* Create interactive dashboards for real-time monitoring and decision-making.

**Expected Outcomes:**

* Reduced train delays.
* Optimized maintenance schedules.
* Enhanced customer experience and satisfaction.

### **3. Problem Statement**

The UK train system experiences frequent delays and inefficiencies in maintenance scheduling, leading to decreased passenger satisfaction and increased operational costs.

### **4. Proposed Solution**

**Technologies Used:**

1. **Excel:** Organized raw train data and performed initial calculations.
2. **Python:** Processed data and create some charts to define the best solution.
3. **SQL:** Stored and queried train schedules and maintenance data.
4. **Power BI:** Created interactive dashboards to visualize key insights.
5. **Tableau:** Designed detailed charts to present findings effectively.

**System Architecture:**

1. **Data Collection and Preprocessing:** Train operational data processed using Python and SQL.
2. **Data Analytics:** Some charts developed to identify inefficiencies.
3. **Visualization:** Insights displayed using Power BI dashboards for easy interpretation.

### **5. Resources Needed**

**Hardware/Software:**

* A computer with sufficient processing power to handle large datasets.
* Python (with libraries such as pandas, numpy and matplotlib).
* SQL Server for database management.
* Power BI and Tableau for data visualization.

**Data Access:**

Access to train schedules, delay logs, and maintenance records from relevant UK train authorities

### **6. Approval**

**Instructor/Advisor:** …………………………………………………………………………....................................  
**Signature:** …………………………………………………………………………………………………