**Project Initialization and Planning Phase**

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| Date | 18 March 2024 |
| Team ID | 17 |
| Project Title | VoyageVista: Illuminating Insights from Uber Expeditionary Analytics Using Tableau |
| Maximum Marks | 3 Marks |

**Project Proposal (Proposed Solution) template**

This project proposal outlines a solution to address a specific problem. With a clear objective, defined scope, and a concise problem statement, the proposed solution details the approach, key features, and resource requirements, including hardware, software, and personnel.

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| **Project Overview** | |
| Objective | The primary objective of the VoyageVista project is to analyze Uber’s ride-hailing data through Tableau to uncover insights regarding ride patterns, driver and passenger behaviors, peak usage times, and regional preferences. The goal is to provide actionable insights that will help Uber, drivers, and policymakers make data-driven decisions to improve service quality and optimize operations. |
| Scope | This project will involve:   * Collecting and analysing Uber’s ride data, user feedback, and operational metrics. * Visualizing ride patterns, driver and passenger behaviours, and regional trends. * Creating a comprehensive Tableau dashboard to showcase these insights. * Integrating the dashboard into a web application using Flask. |
| **Problem Statement** | |
| Description | Uber, like other ride-hailing companies, faces challenges in optimizing its service based on demand fluctuations, driver performance, and regional preferences. Currently, there is no comprehensive tool that integrates multiple data sources to provide insights into these areas effectively. |
| Impact | By solving this problem, Uber can optimize its operations, improve rider and driver experiences, and tailor services to regional preferences. This will lead to improved customer satisfaction, increased efficiency, and informed decision-making for policy changes or service adjustments. |
| **Proposed Solution** | |
| Approach | We will use Tableau to perform data analysis and create visualizations that provide insights into ride patterns, driver behavior, and regional trends. The project will:   * Extract and clean Uber's ride-hailing data. * Develop interactive visualizations to represent peak ride times, demand fluctuations, and other key metrics. * Create a Tableau dashboard that integrates these visualizations. * Deploy the dashboard on a web application using Flask for user accessibility. |
| Key Features | * **Interactive Dashboards**: Visual representations of ride data that are easy to interact with and explore. * **Real-Time Data Visualization**: Ability to visualize live or updated ride data in near real-time. * **Driver & Passenger Behaviour Analysis**: Insights into driver acceptance rates, cancellations, and user ratings. * **Regional Trend Analysis**: Visualization of how ride preferences and trends vary across different regions. |

**Resource Requirements**

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| **Resource Type** | **Description** | **Specification/Allocation** |
| **Hardware** | | |
| Computing Resources | CPU specifications, number of cores | 2 x Intel i7 CPUs, 8 cores per CPU |
| Memory | RAM specifications | 16 GB DDR4 RAM |
| Storage | Disk space for data, models, and logs | 1 TB SSD (Solid State Drive) |
| **Software** | | |
| Frameworks | Python frameworks | Flask (for web integration), Tableau (for data visualization) |
| Libraries | Additional libraries | pandas, numpy, matplotlib, SQLAlchemy, seaborn, scikit-learn. |
| Development Environment | IDE, version control | Jupyter Notebook (for analysis), Visual Studio Code (for development), Git (for version control). |
| **Data** | | |
| Data | Source, size, format | Uber's ride-hailing data (source: Uber dataset or internal data).  Size: 100,000+ ride records, spanning multiple years.  Format: CSV, JSON, SQL databases, depending on data source. |