**Project Initialization and Planning Phase**

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| Date | 12th July 2024 |
| Team ID |  |
| Project Title | TripTrek : Intelligent Travel Planning Using Palm’s Chat-Bison-001 |
| 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 | TripTrekk's primary objective is to **transform the travel planning experience** by leveraging AI to generate personalized itineraries that cater to user preferences, budget constraints, and travel styles. |
| Scope | TripTrekk focuses on core functionalities:   * Personalized Itineraries: AI creates trip plans based on user preferences. * Flight Search Integration: Users can search and compare flights directly within the platform. * Cost-Conscious Features: Tools like currency conversion and budget-friendly recommendations empower users to travel smarter. |
| **Problem Statement** | |
| Description | Travel planning is often a **time-consuming hassle**. People struggle to find the perfect itinerary within budget constraints, sifting through endless information and missing out on hidden gems. |
| Impact | This leads to **stress, wasted time, and potentially suboptimal trips that don't align with user preferences.** |
| **Proposed Solution** | |
| Approach | TripTrekk leverages a combination of cutting-edge technologies to deliver its core functionalities:   * Large Language Models (LLMs): At its heart, TripTrekk utilizes Google Generative AI's text-bison-001 LLM. This powerful language model acts as the engine for itinerary generation. By processing user input and travel preferences, the LLM can generate creative text formats that translate into comprehensive and informative trip plans. * Machine Learning: While the current scope focuses on LLM-based generation, future iterations may incorporate machine learning techniques for specific tasks. For example, machine learning models could be trained to recommend activities or restaurants based on user preferences and historical data. * API Integrations: TripTrekk integrates with external APIs to expand its functionalities and provide valuable travel data.   + Amadeus API integration allows for real-time flight searches within the platform, streamlining the travel planning process.   + Currency conversion APIs can be used to provide up-to-date exchange rates for users budgeting across international destinations. |
| Key Features | TripTrekk goes beyond traditional travel planning methods by offering:   * **AI-powered Itinerary Generation:** LLMs create personalized itineraries tailored to user needs and preferences, providing structured plans for the entire trip. * **Budget-Conscious Planning:** Features like currency conversion and budget-friendly option highlighting prioritize cost-conscious travel. * **Integrated Flight Search:** The Amadeus API integration simplifies flight searching within the platform. * **Future Potential:** TripTrekk's architecture allows for future features like integrated booking functionalities, real-time travel updates, and multilingual support. |

**Resource Requirements**

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| **Resource Type** | **Description** | **Specification/Allocation** |
| **Hardware** | | |
| Computing Resources | CPU/GPU specifications, number of cores | NVIDIA GPUs |
| Memory | RAM specifications | 4-6 GB |
| Storage | Disk space for data, models, and logs | 1 TB SSD |
| **Software** | | |
| Frameworks | Web application development frameworks | Streamlit |
| Large Language Models (LLMs) | LLMs used for advanced text generation capabilities | Google Generative AI (PALM) text-bison-001 |
| Libraries | Core python libraries for data manipulation, numerical computing and API interactions | Pandas, NumPy, requests |
| Development Environment | IDE, version control system (VCS) | VSCode, Anaconda, Git |
| External APIs | Provides access to external data and functionalities | Amadeus API, Currency conversion API |
| Libraries | Machine Learning Library | Scikit learn |
| Libraries | Data visualization library | Altair |
| **Data** | | |
| Data | Source, size, format | None required |