Project Initialization and Planning Phase

Date	25 May 2025
Member ID	Omkar Raju More
Project Title	Restaurant Recommendation System
Maximum Marks	3 Marks

Project Proposal (Proposed Solution)

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.

Project Overview	
Objective	To develop a system that provides personalized and efficient restaurant recommendations by analyzing user preferences, dietary requirements, location, and budget.
Scope	The project aims to serve users seeking restaurant suggestions that match their individual lifestyle choices and dining preferences. It will operate across various regions, considering real-time data and qualitative reviews.
Problem Statement	
Description	Finding restaurants tailored to specific needs is often time-consuming and inefficient. Users frequently revisit the same places, missing diverse options that better match their preferences.
Impact	Solving this problem improves user satisfaction, encourages exploration of new dining options, and reduces time spent on decision-making.
Proposed Solution	
Approach	The solution employs innovative recommendation algorithms that factor in both user input and external data like ambiance, ratings, and reviews. It adapts dynamically to user feedback and real-time changes.

Key Features	• Personalized recommendations • Real-time data analysis • Integration of user reviews • Consideration of dietary and budget constraints • Scalable infrastructure

Resource Requirements

Resource Type	Description	Specification/Allocation
Hardware		
Computing Resources	8-core CPUs and optional GPU	2 x NVIDIA V100 GPUs
Memory	RAM	Minimum 8 GB RAM
Storage	SSD	1 TB SSD for storing user data and restaurant metadata
Software		
Frameworks	Python frameworks	Python, Flask
Libraries	Additional libraries	Pandas, NumPy, Scikit-learn, TensorFlow, BeautifulSoup (for scraping), and NLTK (for review analysis)
Development Environment	IDE, version control	Jupyter Notebook
Data		
Data	Size: - Approx. 50,000–100,000 records initially; scalable based on user growth, Format: - CSV for tabular datasets, Text/HTML for scraped reviews	Aggregated from crowdsourced restaurant platforms (e.g., Yelp, Zomato APIs), user feedback, and public review datasets