Project Initialization and Planning Phase

Date	25 July 2025
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Project Title	Restaurant Recommendation System
Maximum Marks	3 Marks

Project Proposal (Proposed Solution)

Thisprojectproposaloutlinesasolutiontoaddressaspecificproblem.Withaclearobjective,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	Todevelopasystemthatprovidespersonalizedandefficientrestaurant recommendationsby 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 acrossvariousregions,consideringreal-timedataandqualitativereviews.
Problem Statement	
Description	Finding restaurants tailored to specific needs is often time-consuming and inefficient.Usersfrequentlyrevisitthesameplaces,missingdiverseoptions that better match their preferences.
Impact	Solvingthisproblemimprovesusersatisfaction,encouragesexplorationof new dining options, and reduces time spent on decision-making.
Proposed Solution	
Approach	Thesolutionemploysinnovativerecommendationalgorithmsthatfactorin both user input and external data like ambiance, ratings, and reviews. It adapts dynamically to user feedback and real-time changes.

Key Features	• Personalizedrecommendations • Real-timedataanalysis • Integrationofuserreviews • Considerationofdietaryandbudget constraints • Scalableinfrastructure

Resource Requirements

Resource Type	Description	Specification/Allocation
Hardware		
ComputingResources	8-coreCPUsandoptionalGPU	2xNVIDIAV100GPUs
Memory	RAM	Minimum8GBRAM
Storage	SSD	1TBSSDforstoringuserdata and restaurant metadata
Software		
Frameworks	Python frameworks	Python, Flask
Libraries	Additionallibraries	Pandas, NumPy, Scikit-learn, TensorFlow,BeautifulSoup(for scraping), and NLTK (for review analysis)
Development Environment	IDE,versioncontrol	Jupyter Notebook
Data		
Data	Size:-Approx.50,000–100,000 recordsinitially;scalablebased on user growth, Format:-CSVfortabular datasets, Text/HTML for scraped reviews	Aggregatedfromcrowdsourced restaurantplatforms(e.g.,Yelp, Zomato APIs), user feedback, and public review datasets