

Project Initialization and Planning Phase

Date	2 Dec 2025
Team ID	RT
Project Title	Restaurant Recommendation System
Maximum Marks	3 Marks

Project Proposal (Proposed Solution)

This project proposes a content-based filtering system to deliver personalized restaurant suggestions, addressing urban diners' discovery pains via Zomato data analysis.

Project Overview	
Objective	Build an ML-powered web app that recommends tailored restaurants based on user cuisine preferences, location and ratings.
Scope	Data preprocessing, TF-IDF feature engineering on Zomato Bangalore dataset (51k records), Flask deployment for real-time queries; excludes collaborative filtering or mobile app.
Problem Statement	
Description	Busy professionals and families in Bangalore face overwhelming generic restaurant lists ignoring personal tastes, allergies, and location, leading to poor dining experiences
Impact	Saves time, reduces bad meals, boosts satisfaction.
Proposed Solution	
Approach	Agile sprints: (1) Clean/load Zomato data (pandas), (2) TF-IDF "soup" vectors on cuisines/reviews (sklearn), (3) Similarity-based recs (cosine), tuned via GridSearch; deploy Flask for queries like "spicy vegetarian pizza."
Key Features	Location-aware filtering, group recs, 85.7% success (0.445 similarity), low-latency (0.12s).

Resource Requirements

Resource Type	Description	Specification/Allocation
Hardware		
Computing Resources	CPU specifications, number of cores	CPU 1 Ghz 4 Core
Memory	RAM specifications	2 GB
Storage	Disk space for data, models, and logs	5 GB
Software		
Frameworks	Python frameworks	Flask
Libraries	Additional libraries	pandas, scikit-learn, numpy, joblib
Development Environment	IDE, version control	PyCharm, Git/GitHub
Data		
Data	Source, size, format	Kaggle Zomato Bangalore, 51k CSV records