

Task 2 Report – Restaurant Recommendation System

Internship: **Machine Learning Internship – Cognifyz Technologies**

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Goal:

The goal of this task is to build a restaurant recommendation system that suggests restaurants either based on content similarity (given a restaurant name) or user-defined preferences (filters like cuisine, price range, rating, and city).

Dataset:

The dataset contained 9,551 rows and 21 columns with restaurant details such as name, city, cuisines, cost, votes, and ratings.

Steps followed:

- Data preprocessing (handle missing values, drop irrelevant columns, encode categorical features)
- Feature selection: City, Locality, Cuisines, Price range, Average Cost for two, Aggregate rating, Votes
- Applied content-based filtering using cosine similarity
- Implemented two recommendation methods: by restaurant name, and by user preferences

Results:

- Restaurant name-based recommendation returns top 5 most similar restaurants.
- User preference search successfully filters restaurants based on cuisine, price range, rating, and city.
- Test examples showed relevant results, such as recommending Indian restaurants with rating ≥ 4 .

Testing Examples:

Example 1: Recommend by Restaurant Name

Input: `recommend_restaurant_by_name('Sambo Kojin', n=5)`

Output: Returns 5 restaurants similar to 'Sambo Kojin' with details like name, city, cuisines, cost, and rating.

Example 2: Search by Preferences

Input: `search_by_preferences(cuisine='Indian', rating=4, n=5)`

Output: Returns Indian restaurants with Aggregate Rating ≥ 4 , displaying their name, city, cuisines, cost, and rating.

Conclusion:

The system successfully recommends restaurants both by similarity and by user-defined filters. This demonstrates practical use of content-based filtering in recommendation systems.

Future Improvements:

- Add collaborative filtering (recommend based on other users' choices).
- Use NLP for better cuisine text matching.
- Integrate location-based recommendations using latitude/longitude.
- Deploy as a web app for real-time user interaction.