Restaurant Recommendation System

Cognifyz – Where Data Meets Intelligence

Abstract

This project focuses on building a content-based restaurant recommendation system that suggests restaurants based on user preferences such as cuisine type, price range, and ratings using cosine similarity.

Introduction

Recommendation systems enhance user experience on food delivery and restaurant discovery platforms. This project implements a content-based filtering approach for personalized restaurant suggestions.

Objectives

• Build a restaurant recommendation system
• Recommend restaurants based on user preferences
• Preprocess and encode restaurant data
• Apply content-based filtering using similarity measures

Dataset Description

The dataset includes restaurant name, cuisines, price range, and aggregate ratings. These features are used to compute similarity between restaurants.

Data Preprocessing

• Filled missing cuisines with 'Unknown'
• Filled missing price ranges with the most frequent value
• Filled missing ratings with mean value
• Encoded categorical variables using Label Encoding

Recommendation Criteria

Recommendations are based on cuisine preference, price range, and aggregate rating.

Methodology

A content-based filtering approach was used. Feature vectors were created, cosine similarity was applied, and restaurants with highest similarity scores were recommended.

Implementation

Python libraries such as Pandas, NumPy, and Scikit-learn were used. Cosine similarity measured similarity between restaurants.

Testing & Evaluation

Sample user preferences were tested and recommendations were manually evaluated based on relevance, price similarity, and rating quality.

Results

The system successfully recommends restaurants aligned with user preferences.

Conclusion

This project demonstrates the effectiveness of content-based filtering for restaurant recommendation systems.

Future Scope

• Add collaborative filtering
• Include restaurant location
• Apply NLP on reviews
• Deploy as a web application