Cognifyz Technologies

Task 2: Restaurant Recommendation System:

ReadMe:

About the Project:
This project builds a **restaurant recommendation system** that suggests similar restaurants based on content features such as **cuisines**, **online delivery**, **table booking**, **price range**, and **rating**.
It uses **TF-IDF vectorization** for text feature extraction and **Nearest Neighbors** for similarity-based retrieval.
This task was developed as part of an internship assignment to demonstrate understanding of **recommendation systems, NLP, and vector-based similarity models**.

Features

- Reads and processes raw restaurant dataset
- Handles missing values and prepares combined feature content
- Builds a recommendation engine using:
- **TF-IDF** for vectorizing content
- **Cosine similarity** with Nearest Neighbors for finding similar items
- Recommends top N similar restaurants for any given input

Tech Stack

- **Language:** Python
- **Libraries:**
- • `pandas`, `numpy` – Data processing
- • `sklearn` – TF-IDF, NearestNeighbors

Dataset

Dataset includes:

- Restaurant Name
- Cuisines
- Price Range
- Has Table booking, Has Online delivery
- Aggregate Rating

Installation

- Clone or download the .py file
- Ensure the dataset is placed in the correct path
- Install dependencies:

```
pip install pandas numpy scikit-learn
```

Model Details

- Vectorization: TfidfVectorizer(stop_words='english')
- Similarity: cosine distance using NearestNeighbors
- Query Input: Restaurant Name
- Returns: Top N (default 5) similar restaurants with cuisines and ratings

Results

The recommendation engine works efficiently with content-based filtering using vector similarity. It suggests similar restaurants based on:

- Shared cuisines
- Similar service levels (e.g., online delivery, table booking)
- Matching rating and price profiles

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