Model Development Phase Template

Date	July 2024
Team ID	739727
Project Title	Restaurant Recommendation System
Maximum Marks	10 Marks

Initial Model Training Code, Model Validation and Evaluation Report

The initial model training code will be showcased in the future through a screenshot. The model validation and evaluation report will include a summary and training and validation performance metrics for multiple models, presented through respective screenshots.

Initial Model Training Code (5 marks):

Paste the screenshot of the model training code

Model Validation and Evaluation Report (5 marks):

Model	Summary	Training and Validation Performance Metrics
Model 1	Matrix factorization is a class of collaborative filtering algorithms used in recommendation systems. The key idea is to decompose a large matrix (often a user-item interaction matrix) into smaller matrices that can be used to predict missing entries.	

```
from sklearn.feature_extraction.text import TfidfVectorizer
from sklearn.metrics.pairwise import cosine_similarity

# Assuming 'df' is your DataFrame containing restaurant data

# Convert 'cuisine' column to a list
feature = df["cuisine"].tolist()

# Create the TF-IDF matrix
tfidf = TfidfVectorizer(stop_words="english")
tfidf_matrix = tfidf.fit_transform(feature)

# Compute cosine similarity
similarity = cosine_similarity(tfidf_matrix)

# Create a Series with restaurant indices
indices = pd.Series(df.index, index=df['name']).drop_duplicates()
```