Project Development Phase Model Performance Test

Date	24 November 2023
Team ID	Team ID: 591739
Project Name	Restaurant Recommended System
Maximum Marks	10 Marks

Model Performance Testing:

In our Unsupervised Machine Learning-based restaurant recommendation project, we implemented two distinct recommendation systems:

- 1. A Content-Based Recommendation System, leveraging cosine similarity to analyze and recommend restaurants based on features such as location, rating, reviews, and restaurant type.
- 2. A Popularity-Based Recommendation System, which recommends restaurants based on their overall popularity.

```
from sklearn.metrics.pairwise import cosine_similarity
similarity = cosine_similarity(vector)
similarity
array([[1.
                 , 0.71409206, 0.67992868, ..., 0.60620507, 0.55054907,
       0.5665704 ],
      [0.71409206, 1.
                           , 0.7662401 , ..., 0.39199556, 0.66116738,
       0.34694076],
      [0.67992868, 0.7662401 , 1. , ..., 0.45516046, 0.55698884,
       0.42009166],
      [0.60620507, 0.39199556, 0.45516046, ..., 1. , 0.36602726,
      [0.55054907, 0.66116738, 0.55698884, ..., 0.36602726, 1.
       0.26500327],
      [0.5665704, 0.34694076, 0.42009166, ..., 0.80926083, 0.26500327,
       1.
                 11)
```

Popularity Based Model:

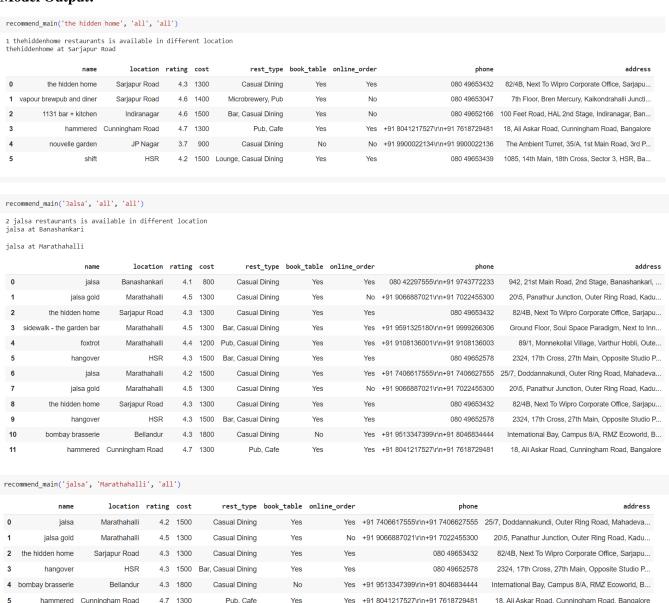
```
popularity_output=filtered_res[['name','location','Rating','Mean Rating','Cost','rest_type','book_table','online_order','phone','address']]
#location
popularity = popularity_output[popularity_output['Rating'] > 4].sort_values(by='Mean Rating', ascending=False).reset_index(drop=True)
# popularity_drop('Mean ',axis=1,inplace=True)
```

This model takes the user input's

- 1. Recommendation based on only Restaurant Name.
- 2. Recommendation based on only Location.
- Recommendation based on only Restaurant Name and Location
- 4. Recommendation based on only Restaurant Type and Location.

Model Output:

recommend main('all','HSR','Bar')



name	location	rating	cost	rest_type	book_table	online_order	phone	address
0 house of commons	HSR	4.7	1000	Bar	Yes	No	080 45128819	1085, 14th Main, 18th Cross, Sector 3, HSR, Ba