Import Libraries

```python
import pandas as pd
import numpy as np
from sklearn.feature_extraction.text import TfidfVectorizer
from sklearn.neighbors import NearestNeighbors
```

```python
df = pd.read_csv("/content/Dataset .csv")
```

+ Code   + Text

Null Value Inspection

```python
df.isnull().sum()
```

	0
Restaurant ID	0
Restaurant Name	0
Country Code	0
City	0
Address	0
Locality	0
Locality Verbose	0
Longitude	0
Latitude	0
Cuisines	9
Average Cost for two	0
Currency	0
Has Table booking	0
Has Online delivery	0
Is delivering now	0
Switch to order menu	0
Price range	0
Aggregate rating	0
Rating color	0
Rating text	0
Votes	0

dtype: int64

Duplicate Null Value Inspection

```python
df.duplicated().sum()
```

```
np.int64(0)
```

Handle Missing Values

```python
df['Cuisines'] = df['Cuisines'].fillna('Unknown')
```

```python
df['content'] = (df['Cuisines'] + ' ' +df['Has Table booking'].astype(str) + ' ' +df['Has Online delivery'].astype(str) + ' ' +df['Price
```

Model Building

```python
tfidf = TfidfVectorizer(stop_words='english')
tfidf_matrix = tfidf.fit_transform(df['content'])
```

```
nn_model = NearestNeighbors(metric='cosine', algorithm='brute')
nn_model.fit(tfidf_matrix)
```

```
▼              NearestNeighbors                  ⓘ ⑦
    NearestNeighbors(algorithm='brute', metric='cosine')
```

```
indices = pd.Series(df.index, index=df['Restaurant Name']).drop_duplicates()
```

```
def recommend_restaurants(name, n=5):
    if name not in indices:
        return f"Restaurant '{name}' not found."
    idx = indices[name]
    distances, idxs = nn_model.kneighbors(tfidf_matrix[idx], n_neighbors=n+1)
    recommended_idx = idxs.flatten()[1:]
    return df[['Restaurant Name', 'Cuisines', 'Aggregate rating']].iloc[recommended_idx]
```

Testing

```
recommend_restaurants("Ooma")
```

	Restaurant Name	Cuisines	Aggregate rating
9383	Roka	Japanese, Sushi	4.6
71	Kawa Sushi	Sushi, Japanese	3.5
549	Sakura	Japanese, Sushi	3.8
1867	Nagai	Japanese, Sushi	4.3
383	Ichiban	Japanese, Sushi	4.3

```
recommend_restaurants("McDonald's")
recommend_restaurants("The Yellow Chilli")
```

	Restaurant Name	Cuisines	Aggregate rating
873	Total Food Court	North Indian, Mughlai, Chinese	0.0
8326	B Bawarchi Restaurant	North Indian, Mughlai, Chinese	0.0
2437	Colours by Royal Cafe - Royal Inn	North Indian, Mughlai, Chinese	4.2
6086	Cook & Connect	North Indian, Mughlai, Chinese	0.0
4979	Dawat	North Indian, Chinese, Mughlai	2.9
3637	Spice Studio	Seafood, Mughlai, North Indian	0.0
1186	Tanishk Gourmet Indian	North Indian, Mughlai, Seafood	0.0
2335	The Yellow Chilli	North Indian, Mughlai, Seafood	4.1
1211	Tughlaq	North Indian, Mughlai, Chinese, Seafood	3.5
3524	Blue Water Grille Express	North Indian, Mughlai, Chinese, Seafood	2.6
6429	Blue Water Grille	North Indian, Mughlai, Chinese, Seafood	3.5
5300	Rockers & Shockers	North Indian, Mughlai, Chinese	0.0
873	Total Food Court	North Indian, Mughlai, Chinese	0.0
8326	B Bawarchi Restaurant	North Indian, Mughlai, Chinese	0.0
2437	Colours by Royal Cafe - Royal Inn	North Indian, Mughlai, Chinese	4.2
6086	Cook & Connect	North Indian, Mughlai, Chinese	0.0
4979	Dawat	North Indian, Chinese, Mughlai	2.9
1162	Pind Balluchi	North Indian, Mughlai	2.7
1163	Punjab Grill	North Indian, Mughlai	4.3
1836	Sasuraal	North Indian, Mughlai	3.3
7738	Tipu Sultan	North Indian, Mughlai	3.7
5954	Karim's	Mughlai, North Indian	3.7
5851	Pind Balluchi	North Indian, Mughlai	2.4
1162	Pind Balluchi	North Indian, Mughlai	2.7
1163	Punjab Grill	North Indian, Mughlai	4.3
1836	Sasuraal	North Indian, Mughlai	3.3
7738	Tipu Sultan	North Indian, Mughlai	3.7
5954	Karim's	Mughlai, North Indian	3.7
5851	Pind Balluchi	North Indian, Mughlai	2.4