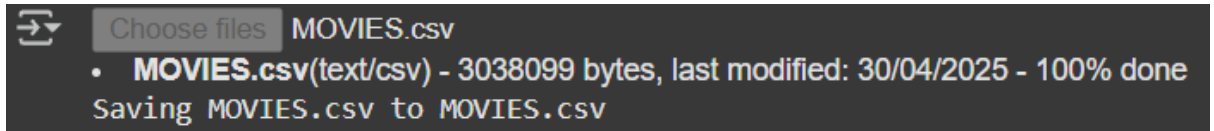


1.uploading files:

```
from google.colab import files
```

```
uploaded = files.upload()
```



2. Load and Display Basic Info:

```
import pandas as pd
```

```
# Load the dataset
```

```
df = pd.read_csv("MOVIES.csv")
```

```
# Display basic info
```

```
print("Data Types:")
```

```
print(df.dtypes)
```

```
# Display first 10 rows
```

```
print("\nFirst 10 Rows:")
```

```
print(df.head(10))
```

```

Data Types:
movieId    int64
title      object
genres     object
dtype: object

First 10 Rows:
   movieId title \
0         1  Toy Story (1995)
1         2   Jumanji (1995)
2         3 Grumpier Old Men (1995)
3         4 Waiting to Exhale (1995)
4         5 Father of the Bride Part II (1995)
5         6   Heat (1995)
6         7   Sabrina (1995)
7         8 Tom and Huck (1995)
8         9 Sudden Death (1995)
9        10  GoldenEye (1995)

   genres
0  Adventure|Animation|Children|Comedy|Fantasy
1  Adventure|Children|Fantasy
2  Comedy|Romance
3  Comedy|Drama|Romance
4  Comedy
5  Action|Crime|Thriller
6  Comedy|Romance
7  Adventure|Children
8  Action
9  Action|Adventure|Thriller

```

3. Genre Frequency Analysis:

```

import pandas as pd

df = pd.read_csv("MOVIES.csv")

# Split genres and count occurrences


genre_counts = {}

for genre_list in df['genres']:

```

```
for genre in genre_list.split('|'):
    if genre in genre_counts:
        genre_counts[genre] += 1
    else:
        genre_counts[genre] = 1

# Sort and display top genres
sorted_genres = sorted(genre_counts.items(), key=lambda x: x[1], reverse=True)
for genre, count in sorted_genres:
    print(f"{genre}: {count}")
```



```
Drama: 25606
Comedy: 16870
Thriller: 8654
Romance: 7719
Action: 7348
Horror: 5989
Documentary: 5605
Crime: 5319
(no genres listed): 5062
Adventure: 4145
Sci-Fi: 3595
Children: 2935
Animation: 2929
Mystery: 2925
Fantasy: 2731
War: 1874
Western: 1399
Musical: 1054
Film-Noir: 353
IMAX: 195
```

4. Filter Movies by Genre:

```
import pandas as pd

df = pd.read_csv("MOVIES.csv")

# Specify genre to filter
target_genre = "Comedy"

# Filter movies by genre
filtered_movies = df[df['genres'].str.contains(target_genre, na=False)]

# Display the result
print(f"Movies in Genre: {target_genre}")

print(filtered_movies.head(20))
```

```
Movies in Genre: Comedy
movieId      title \
0         1      Toy Story (1995)
2         3  Grumpier Old Men (1995)
3         4  Waiting to Exhale (1995)
4         5  Father of the Bride Part II (1995)
6         7      Sabrina (1995)
10        11  American President, The (1995)
11        12  Dracula: Dead and Loving It (1995)
17        18      Four Rooms (1995)
18        19  Ace Ventura: When Nature Calls (1995)
19        20      Money Train (1995)
20        21      Get Shorty (1995)
37        38      It Takes Two (1995)
38        39      Clueless (1995)
44        45      To Die For (1995)
51        52  Mighty Aphrodite (1995)
53        54      Big Green, The (1995)
55        56  Kids of the Round Table (1995)
57        58  Postman, The (Postino, Il) (1994)
62        63  Don't Be a Menace to South Central While Drink...
63        64      Two if by Sea (1996)
```

```

                                genres
0    Adventure|Animation|Children|Comedy|Fantasy
2                                Comedy|Romance
3                                Comedy|Drama|Romance
4                                Comedy
6                                Comedy|Romance
10   Comedy|Drama|Romance
11   Comedy|Horror
17   Comedy
18   Comedy
19   Action|Comedy|Crime|Drama|Thriller
20   Comedy|Crime|Thriller
37   Children|Comedy
38   Comedy|Romance
44   Comedy|Drama|Thriller
51   Comedy|Drama|Romance
53   Children|Comedy
55   Adventure|Children|Comedy|Fantasy
57   Comedy|Drama|Romance
62   Comedy|Crime
63   Comedy|Romance

```

5. Movies Count Per Year:

```

import pandas as pd

import re

df = pd.read_csv("MOVIES.csv")

# Extract year from title

df['year'] = df['title'].str.extract(r'\((\d{4})\)', expand=False)

year_counts = df['year'].value_counts().sort_index()

# Display the counts

print("Movies released per year:")

print(year_counts)

```

```

Movies released per year:
year
1874      1
1878      1
1880      1
1883      1
1887      1
...
2015    2513
2016    2488
2017    2374
2018    2034
2019     994
Name: count, Length: 135, dtype: int64

```

6. . Most Frequent Movie Titles:

```

import pandas as pd

df = pd.read_csv("MOVIES.csv")

# Count duplicate titles

title_counts = df['title'].value_counts()

# Display top 10 most frequent titles

print("Top 10 most frequent movie titles:")

print(title_counts.head(10))

```

```

Top 10 most frequent movie titles:
title
Blockbuster (2017)      2
Hostage (2005)          2
Delirium (2018)         2
Free Fall (2014)        2
Grace (2014)            2
9 (2009)                2
Believer (2018)         2
The Lonely Island Presents: The Unauthorized Bash Brothers Experience (2019)  2
Escape Room (2017)     2
Name: count, dtype: int64

```

7.cleaning of csv file:

```
import pandas as pd

# Load the dataset
df = pd.read_csv('MOVIES.csv')

# Show original structure
print("Original dataset shape:", df.shape)
print("Sample records:")
print(df.head())

# Drop rows with missing values (if any)
df.dropna(inplace=True)

# Extract year from title and remove from title
import re
def extract_year(title):
    match = re.search(r'\((\d{4})\)', title)
    return int(match.group(1)) if match else None

def clean_title(title):
    return re.sub(r'\((\d{4})\)', '', title).strip()

df['year'] = df['title'].apply(extract_year)
df['clean_title'] = df['title'].apply(clean_title)

# Split genres into lists
df['genre_list'] = df['genres'].apply(lambda x: x.split('|') if isinstance(x, str) else [])

# Display the most common genres
```

```

from collections import Counter

genre_counts = Counter([genre for sublist in df['genre_list'] for genre in sublist])

print("\nTop 10 genres:")

for genre, count in genre_counts.most_common(10):

    print(f"{genre}: {count}")

# Save cleaned version

df.to_csv('cleaned_movies.csv', index=False)

print("\nCleaned data saved as 'cleaned_movies.csv'")

```



Original dataset shape: (62423, 3)

Sample records:

	movieId	title \
0	1	Toy Story (1995)
1	2	Jumanji (1995)
2	3	Grumpier Old Men (1995)
3	4	Waiting to Exhale (1995)
4	5	Father of the Bride Part II (1995)

	genres
0	Adventure Animation Children Comedy Fantasy
1	Adventure Children Fantasy
2	Comedy Romance
3	Comedy Drama Romance
4	Comedy

Top 10 genres:

Drama: 25606

Comedy: 16870

Thriller: 8654

Romance: 7719

Action: 7348

Horror: 5989

Documentary: 5605

Crime: 5319

(no genres listed): 5062

Adventure: 4145

Cleaned data saved as 'cleaned_movies.csv'

8.recommendation of users favourite movie:

```
import pandas as pd

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

# Load movie data
movies = pd.read_csv("MOVIES.csv")

# Fill missing genre values and preprocess
def preprocess_genres(df):
    df['genres'] = df['genres'].fillna("")
    df['genres'] = df['genres'].str.replace('|', ' ', regex=False)
    return df

movies = preprocess_genres(movies)

# TF-IDF Vectorization of genres
vectorizer = TfidfVectorizer()
tfidf_matrix = vectorizer.fit_transform(movies['genres'])

# Function to get recommendations based on genre preference
def recommend_movies(preferred_genres, top_n=10):
    user_profile = vectorizer.transform([preferred_genres.replace('|', ' ')])
    similarity_scores = cosine_similarity(user_profile, tfidf_matrix)
    scores = list(enumerate(similarity_scores[0]))
    scores = sorted(scores, key=lambda x: x[1], reverse=True)
    recommended_indices = [i for i, _ in scores[:top_n]]
```

```

return movies.iloc[recommended_indices][['title', 'genres']]

# Example usage

if __name__ == "__main__":

    print("Welcome to the AI-Driven Movie Recommender!")

    user_input = input("Enter your favorite genres (e.g., Action|Comedy|Drama): ")

    recommendations = recommend_movies(user_input)

    print("\nTop Movie Recommendations for You:")

    print(recommendations.to_string(index=False))

```

```

Welcome to the AI-Driven Movie Recommender!
Enter your favorite genres (e.g., Action|Comedy|Drama): action

Top Movie Recommendations for You:

```

	title	genres
	Sudden Death	(1995) Action
	Fair Game	(1995) Action
	Under Siege 2: Dark Territory	(1995) Action
	Hunted, The	(1995) Action
	Bloodsport 2 (a.k.a. Bloodsport II: The Next Kumite)	(1996) Action
Yes, Madam (a.k.a. Police Assassins) (a.k.a. In the Line of Duty 2) (Huang gu shi jie)		(1985) Action
	American Strays	(1996) Action
	Bird of Prey	(1996) Action
	Best of the Best 3: No Turning Back	(1995) Action
	Inside	(1996) Action