In [53]:
```
pip install scikit-learn
```

```
Requirement already satisfied: scikit-learn in c:\users\hp-pc\anaconda3\lib\site-p
ackages (1.0.2)
Requirement already satisfied: threadpoolctl>=2.0.0 in c:\users\hp-pc\anaconda3\li
b\site-packages (from scikit-learn) (2.2.0)
Requirement already satisfied: numpy>=1.14.6 in c:\users\hp-pc\anaconda3\lib\site-
packages (from scikit-learn) (1.23.5)
Requirement already satisfied: joblib>=0.11 in c:\users\hp-pc\anaconda3\lib\site-p
ackages (from scikit-learn) (1.1.1)
Requirement already satisfied: scipy>=1.1.0 in c:\users\hp-pc\anaconda3\lib\site-p
ackages (from scikit-learn) (1.9.3)
Note: you may need to restart the kernel to use updated packages.
```

In [54]:
```
from sklearn.metrics.pairwise import cosine_similarity
from sklearn.feature_extraction.text import TfidfVectorizer
import pandas as pd
```

In [55]:
```
df = pd.read_csv("D:\movies_metadata.csv",
                 low_memory=False)
df.head(1)
```

Out[55]:

	adult	belongs_to_collection	budget	genres	homepage	id	imdb_i
0	False	{'id': 10194, 'name': 'Toy Story Collection', ...	30000000	[{'id': 16, 'name': 'Animation'}, {'id': 35, '...	http://toystory.disney.com/toy-story	862	tt01147(

1 rows × 24 columns

In [56]:
```
df = df[['id','title','overview']]
df.head(1)
```

Out[56]:

	id	title	overview
0	862	Toy Story	Led by Woody, Andy's toys live happily in his ...

In [57]:
```
tfidf = TfidfVectorizer(stop_words='english')
df['overview'] = df['overview'].fillna('')
```

In [58]:
```
tfidf_matrix = tfidf.fit_transform(df['overview'])
tfidf_matrix.shape
```

Out[58]:
```
(45466, 75827)
```

In [59]:
```
df['title'].shape
```

Out[59]:
```
(45466,)
```

In [64]:
```
cosine_sim[1]
```

Out[64]:
```
array([0.01504121, 1.        , 0.04681953, ..., 0.        , 0.02198641,
       0.00929411])
```

In [65]:
```
df = df[~df['title'].isna()]
```

In [66]:
```
indices = pd.Series(df.index, index=df['title'])

indices = indices[~indices.index.duplicated(keep='last')]
```

In [67]:
```
indices
```

Out[67]:
```
title
Toy Story                          0
Jumanji                            1
Grumpier Old Men                   2
Waiting to Exhale                  3
Father of the Bride Part II        4
                                ...
Subdue                         45461
Century of Birthing            45462
Betrayal                       45463
Satan Triumphant               45464
Queerama                       45465
Length: 42277, dtype: int64
```

In [68]:
```
target_movie_index = indices['Toy Story']

target_movie_index
```

Out[68]:
```
0
```

In [69]:
```
cosine_sim[target_movie_index]
```

Out[69]:
```
array([1.        , 0.01504121, 0.        , ..., 0.        , 0.00595453,
       0.        ])
```

In [70]:
```
similarity_scores = pd.DataFrame(cosine_sim[target_movie_index], columns=["score"]

similarity_scores
```

Out[70]:

	score
0	1.000000
1	0.015041
2	0.000000
3	0.000000
4	0.000000
...	...
45461	0.000000
45462	0.000000
45463	0.000000
45464	0.005955
45465	0.000000

45466 rows × 1 columns

In [71]:
```
movie_indices = similarity_scores.sort_values("score", ascending=False)[0:11].inde
```

In [72]:
```
df['title'].iloc[movie_indices]
```

Out[72]:
```
0                                  Toy Story
15348                            Toy Story 3
2997                             Toy Story 2
10301                 The 40 Year Old Virgin
24525                   Wyatt Earp's Revenge
23845                        Life After Beth
29204                     Stewardess School
43433          Doug Stanhope: Deadbeat Hero
38482                          The Nostalgist
42727    Jim Norton: Contextually Inadequate
8327                               The Champ
Name: title, dtype: object
```

In [73]:
```
def get_films_by_name(movie_name, movie_indices):
    return movie_indices[movie_indices.index.str.contains(movie_name, na=False)]
```

In [74]:
```
get_films_by_name('Lord',indices)
```

Out[74]:
```
title
Lord of Illusions                                    174
The Lord of the Rings                               2007
The Lords of Flatbush                               3468
Phantasm III: Lord of the Dead                      3715
Lord of the Flies                                   4821
The Lord of the Rings: The Fellowship of the Ring    4863
The Lord of the Rings: The Two Towers               5814
Dragon Lord                                         5957
Greystoke: The Legend of Tarzan, Lord of the Apes    6839
The Lord of the Rings: The Return of the King       7000
Lord Love a Duck                                    7029
At Play in the Fields of the Lord                   7653
Lord Jim                                            8125
Something the Lord Made                             9493
Edges of the Lord                                  10044
Lords of Dogtown                                   10101
Lord of War                                        10336
The Thief Lord                                     11090
Ringers - Lord of the Fans                         11589
The War Lord                                       13083
Lord Save Us                                       15190
The Lords of Salem                                 20993
The Lords of Discipline                            22024
Dragon Ball Z: Lord Slug                           22475
Lord of Tears                                      23558
Little Lord Fauntleroy                             26055
TekWar: TekLords                                   26449
Premutos: Lord of the Living Dead                  29317
The Lord's Lantern in Budapest                     34912
Lord Montagu                                       36478
VeggieTales: Lord of the Beans                     39744
dtype: int64
```

In [75]:
```
def get_recommended_movies(target_movie_index, movie_similarities,movies_df):
    similarity_scores = pd.DataFrame(movie_similarities[target_movie_index], colum
    movie_indices = similarity_scores.sort_values("score", ascending=False)[0:11].
    return df['title'].iloc[movie_indices]
```

In [76]:
```
get_recommended_movies(2007,cosine_sim,df)
```

Out[76]:
```
2007                                The Lord of the Rings
16351                             The Return of the King
7000         The Lord of the Rings: The Return of the King
18379                               Magic Christmas Tree
23077                                           Stardust
29727                                    Call + Response
4863     The Lord of the Rings: The Fellowship of the Ring
9560                                        Underclassman
5814                The Lord of the Rings: The Two Towers
31713                                               Duska
41068                     Assepoester: Een Modern Sprookje
Name: title, dtype: object
```

In [77]:
```
# #Done with the Movie recommendor system# #
```