Creado por:

Isabel Maniega

VAEX y DASK

Objetivos:

- Aprender más sobre VAEX y DASK
- Fomentar la proactividad del alumno

Tabla de contenidos:

Profundizando en DASK

Para este apartado trabajaré con el dataset de Movielens, que contiene información sobre películas y valoraciones de usuarios.

In [1]:

```
import dask.dataframe as dd
import pandas as pd
import matplotlib.pyplot as plt
```

Lectura de datos películas

In [2]:

```
df_movies: dd.DataFrame = dd.read_csv('movies_data/movies.csv')
df_movies.head()
```

Out[2]:

	movieId	title	genres
0	1	Toy Story (1995)	Adventure|Animation|Children|Comedy|Fantasy
1	2	Jumanji (1995)	Adventure|Children|Fantasy
2	3	Grumpier Old Men (1995)	Comedy|Romance
3	4	Waiting to Exhale (1995)	Comedy|Drama|Romance
4	5	Father of the Bride Part II (1995)	Comedy

Lectura de datos valoraciones

In [3]:

```
df_ratings: dd.DataFrame = dd.read_csv('movies_data/ratings.csv')
df_ratings.head()
```

Out[3]:

	userId	movieId	rating	timestamp
0	1	2	3.5	1112486027
1	1	29	3.5	1112484676
2	1	32	3.5	1112484819
3	1	47	3.5	1112484727
4	1	50	3.5	1112484580

Lectura de datos etiquetas

In [4]:

```
df_tags: dd.DataFrame = dd.read_csv('movies_data/tags.csv')
df_tags.head()
```

Out[4]:

	userId	movieId	tag	timestamp
0	18	4141	Mark Waters	1240597180
1	65	208	dark hero	1368150078
2	65	353	dark hero	1368150079
3	65	521	noir thriller	1368149983
4	65	592	dark hero	1368150078

Combinación de datos

In [5]:

```
# Merge the three dataframes
df_mov_rat: dd.DataFrame = df_ratings.merge(df_movies, on='movieId', how='left')
df_movielens: dd.DataFrame = df_mov_rat.merge(df_tags, on=['userId', 'movieId'], how='left')
# rename timestamp_x to rating_timestamp and timestamp_y to tag_timestamp
df_movielens: dd.DataFrame = df_movielens.rename(columns={'timestamp_x': 'rating_timestamp', 'timestamp_y': 'ta
df_movielens["rating_timestamp"] = dd.to_datetime(df_movielens["rating_timestamp"], unit='s', origin='unix')
df_movielens["tag_timestamp"] = dd.to_datetime(df_movielens["tag_timestamp"], unit='s', origin='unix')
df_movielens.head()
```

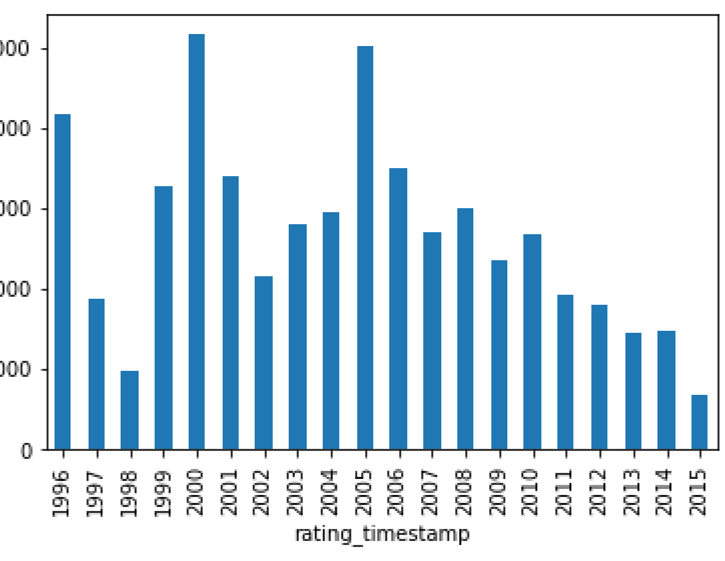
Out[5]:

	userId	movieId	rating	rating_timestamp	title	genres	tag	tag_timestamp
0	1	2	3.5	2005-04-02 23:53:47	Jumanji (1995)	Adventure|Children|Fantasy	NaN	NaT
1	1	29	3.5	2005-04-02 23:31:16	City of Lost Children, The (Cité des enfants p...	Adventure|Drama|Fantasy|Mystery|Sci-Fi	NaN	NaT
2	1	32	3.5	2005-04-02 23:33:39	Twelve Monkeys (a.k.a. 12 Monkeys) (1995)	Mystery|Sci-Fi|Thriller	NaN	NaT
3	1	47	3.5	2005-04-02 23:32:07	Seven (a.k.a. Se7en) (1995)	Mystery|Thriller	NaN	NaT
4	1	50	3.5	2005-04-02 23:29:40	Usual Suspects, The (1995)	Crime|Mystery|Thriller	NaN	NaT

Valoraciones por año

In [6]:

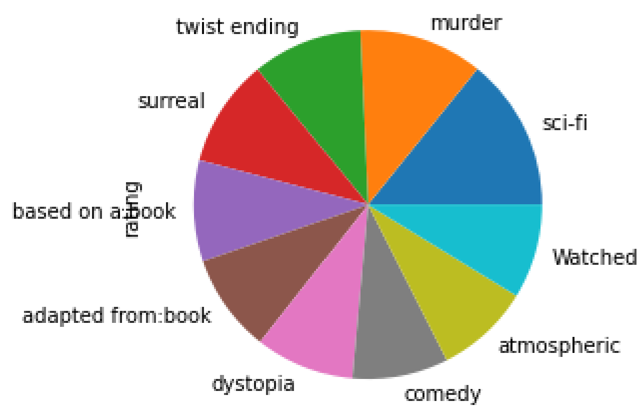
```
# plot the number of ratings per year
df_movielens.groupby(df_movielens.rating_timestamp.dt.year)\
    .rating\
    .count()\
    .compute()\
    .plot(kind='bar')
plt.show()
```



Etiquetas más valoradas

In [7]:

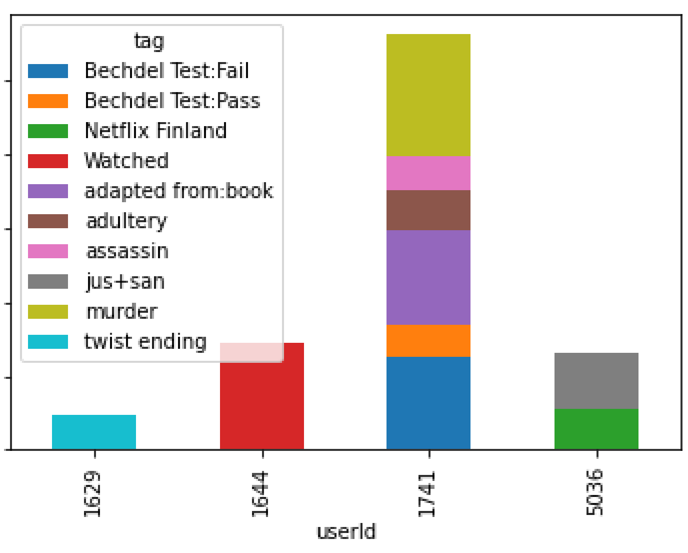
```
# plot the top tags rated by users as pie
df_movielens.groupby('tag')\
    .rating\
    .count()\
    .nlargest(10)\
    .compute()\
    .plot(kind='pie')
plt.show()
```



Top usuarios con más valoraciones por tags

In [8]:

```
# plot the top 10 users who rated the most movies with the legend as the tag
df_movielens[['userId', 'tag', 'rating']]\
    .groupby(['userId', 'tag'])\
    .rating\
    .count()\
    .nlargest(10)\
    .compute()\
    .unstack()\
    .plot(kind='bar', stacked=True)
plt.show()
```



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