

Recommender Systems

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Why not ‘Matrix’ ?

- Check if the movie is present in the group recommendations
- If present
 - Get the rank of movie from all users and group
 - If the movie is not in top 20 group recommendations
 - Print all the user’s ranking for the particular movie, which suggests a low ranking in the group recommendations.
- If not
 - See whether the user(s) have not recommended the particular movie.
 - User(s) that have not recommended the movie, suggests the reason why it is not present in the group recommendations.

```
Out[21]: ['The Rank for the Movie Matrix, The (1999) has a quite low rankings',  
 'The Reason for the k Value Low because the recommendation made for the Matrix, The (1999):',  
 'Matrix, The (1999) :: > -- User A --> 9672',  
 'Matrix, The (1999) :: > -- User B --> 344',  
 'Matrix, The (1999) :: > -- User C --> 0']
```

Genres Ranking - example

- Consider 3 users A,B,C which are present in top 20 group recommendations.
- Let A has prediction score of ‘x’, it has genres ‘Horror/**Action/Drama**’
- Let B has prediction score of ‘y’, it has genres ‘**Action/Comedy**’
- Let C has prediction score of ‘z’, it has genres ‘Crime/Drama’
- The average score of genre ‘**Action**’: $(x + y) / N$ ($N=2$)
where N is number of times the genre is repeated in the group recommendation list.

Genres Ranking – Top 20 group Recommended movies

	genres	average_score
0	War	4.066933
1	Documentary	4.045009
2	Mystery	4.043733
3	Drama	4.041526
4	Fantasy	4.041327
5	Crime	4.040685
6	Western	4.040613
7	Horror	4.039960
8	Comedy	4.036720
9	Film-Noir	4.034769

	genres	average_score
10	(no genres listed)	4.033682
11	Romance	4.032805
12	Animation	4.031854
13	Thriller	4.031506
14	Musical	4.030738
15	Children	4.026112
16	Adventure	4.023063
17	Sci-Fi	4.022446
18	Action	4.019107
19	IMAX	3.978251

Why not ‘Documentary’ movies ?

- Get the top 20 movie recommendations of group and all users in the group.
- Create ranking of all genres for each user and group.
 - Ranking of a particular genre is calculated by taking the average of all movie recommendation score that comes under the genre.
- Check if the required genre is present in the genre rankings.
- If it is not present in any of the group or user(s) top 20 recommendations, print the reason.

```
Out[23]: ['Documentary is not in group top20 reccomendation',
'Documentary is not in userA top20 reccomendation',
'Documentary is not in userB top20 reccomendation',
'Documentary is not in userC top20 reccomendation',
'Documentary is not in group top40 reccomendation',
'Documentary is not in userA top40 reccomendation',
'Documentary is not in userB top40 reccomendation',
'Documentary is not in userC top40 reccomendation']
```

Why not ‘Fugitive’ ranked first ?

- First, we will get the ranking of all users for a particular movie. This suggests why it is not ranked first in group recommendation.
- Secondly, we are trying to calculate the average ranking of genres and the number of genres present for a particular movie.

```
[ 'The Reason for the k Value Low because the recommendation made for the Fugitive, The (1993):', 'Fugitive, The (1993) :: > -- User A --> 2', 'Fugitive, The (1993) :: > -- User B --> 8384', 'Fugitive, The (1993) :: > -- User C --> 7758' ]
```

Average Score Rating of Genres : [7.0, 7.25]

Number of Genres per movie : [3, 4]



Thank you