————-----------Import Important Libraries————-----------------

```
import pandas as pd
from mlxtend.frequent_patterns import apriori, association_rules
from mlxtend.preprocessing import TransactionEncoder
```

————-----------Read Datasets————------------------

```
data = pd.read_csv('Downloads/My_movies.csv')
data
```

	V1	V2	V3	V4	V5	Sixth Sense	Gladiator	LOTR1	Harry Potter1	Patriot	LOTR2	Harry Potter2	LOTR	Braveheart	Green Mile
0	Sixth Sense	LOTR1	Harry Potter1	Green Mile	LOTR2	1	0	1	1	0	1	0	0	0	1
1	Gladiator	Patriot	Braveheart	NaN	NaN	0	1	0	0	1	0	0	0	1	0
2	LOTR1	LOTR2	NaN	NaN	NaN	0	0	1	0	0	1	0	0	0	0
3	Gladiator	Patriot	Sixth Sense	NaN	NaN	1	1	0	0	1	0	0	0	0	0
4	Gladiator	Patriot	Sixth Sense	NaN	NaN	1	1	0	0	1	0	0	0	0	0
5	Gladiator	Patriot	Sixth Sense	NaN	NaN	1	1	0	0	1	0	0	0	0	0
6	Harry Potter1	Harry Potter2	NaN	NaN	NaN	0	0	0	1	0	0	1	0	0	0
7	Gladiator	Patriot	NaN	NaN	NaN	0	1	0	0	1	0	0	0	0	0
8	Gladiator	Patriot	Sixth Sense	NaN	NaN	1	1	0	0	1	0	0	0	0	0
9	Sixth Sense	LOTR	Gladiator	Green Mile	NaN	1	1	0	0	0	0	0	1	0	1

————-----------Get dummies————----------------------

```
df = pd.get_dummies(data)
df
```

	Sixth Sense	Gladiator	LOTR1	Harry Potter1	Patriot	LOTR2	Harry Potter2	LOTR	Braveheart	Green Mile	...	V2_LOTR	V2_LOTR1	V2_LOTR2	V2_Patriot	V3_Braveheart	V3_
0	1	0	1	1	0	1	0	0	0	1	...	0	1	0	0	0	
1	0	1	0	0	1	0	0	0	1	0	...	0	0	0	1	1	
2	0	0	1	0	0	1	0	0	0	0	...	0	0	1	0	0	
3	1	1	0	0	1	0	0	0	0	0	...	0	0	0	1	0	
4	1	1	0	0	1	0	0	0	0	0	...	0	0	0	1	0	
5	1	1	0	0	1	0	0	0	0	0	...	0	0	0	1	0	
6	0	0	0	1	0	0	1	0	0	0	...	0	0	0	0	0	
7	0	1	0	0	1	0	0	0	0	0	...	0	0	0	1	0	
8	1	1	0	0	1	0	0	0	0	0	...	0	0	0	1	0	
9	1	1	0	0	0	0	0	1	0	1	...	1	0	0	0	0	

10 rows × 25 columns

————-----------Define Apriori————------------------

```
data1 = apriori (df, min_support = 0.0001, use_colnames = True)
```

data1

	support	itemsets
0	0.6	(Sixth Sense)
1	0.7	(Gladiator)
2	0.2	(LOTR1)
3	0.2	(Harry Potter1)
4	0.6	(Patriot)
...	...	...
1392	0.1	(Harry Potter1, LOTR1, Sixth Sense, V3_Harry P...
1393	0.1	(LOTR2, LOTR1, Sixth Sense, V3_Harry Potter1, ...
1394	0.1	(LOTR2, Harry Potter1, V3_Harry Potter1, Sixth...
1395	0.1	(LOTR2, Harry Potter1, LOTR1, V3_Harry Potter1...
1396	0.1	(LOTR2, Harry Potter1, LOTR1, Sixth Sense, V3_...

1397 rows × 2 columns

—------------Define Association—-------------------
data2 = association_rules (data1, metric = 'lift', min_threshold = 0.13)
data2

	antecedents	consequents	antecedent support	consequent support	support	confidence	lift	leverage	conviction
0	(Sixth Sense)	(Gladiator)	0.6	0.7	0.5	0.833333	1.190476	0.08	1.80
1	(Gladiator)	(Sixth Sense)	0.7	0.6	0.5	0.714286	1.190476	0.08	1.40
2	(LOTR1)	(Sixth Sense)	0.2	0.6	0.1	0.500000	0.833333	-0.02	0.80
3	(Sixth Sense)	(LOTR1)	0.6	0.2	0.1	0.166667	0.833333	-0.02	0.96
4	(Sixth Sense)	(Harry Potter1)	0.6	0.2	0.1	0.166667	0.833333	-0.02	0.96
...	...	...	...	...	...	...	...	...	...
64247	(Green Mile)	(LOTR2, Harry Potter1, LOTR1, Sixth Sense, V3_...	0.2	0.1	0.1	0.500000	5.000000	0.08	1.80
64248	(V4_Green Mile)	(LOTR2, Harry Potter1, LOTR1, Sixth Sense, V3_...	0.2	0.1	0.1	0.500000	5.000000	0.08	1.80
64249	(V2_LOTR1)	(LOTR2, Harry Potter1, LOTR1, Sixth Sense, V3_...	0.1	0.1	0.1	1.000000	10.000000	0.09	inf
64250	(V5_LOTR2)	(LOTR2, Harry Potter1, LOTR1, Sixth Sense, V3_...	0.1	0.1	0.1	1.000000	10.000000	0.09	inf
64251	(V1_Sixth	(LOTR2, Harry Potter1, LOTR1, Sixth Sense,	0.2	0.1	0.1	0.500000	5.000000	0.08	1.80

—------------sort values—---------------------
data2.sort_values('lift', ascending = True)

	antecedents	consequents	antecedent support	consequent support	support	confidence	lift	leverage	conviction
6313	(Gladiator)	(V1_Sixth Sense, V4_Green Mile, Sixth Sense, G...	0.7	0.2	0.1	0.142857	0.714286	-0.04	0.933333
1735	(Gladiator)	(V4_Green Mile, Sixth Sense, V1_Sixth Sense)	0.7	0.2	0.1	0.142857	0.714286	-0.04	0.933333
1652	(V4_Green Mile, Sixth Sense, Green Mile)	(Gladiator)	0.2	0.7	0.1	0.500000	0.714286	-0.04	0.600000
3625	(Gladiator)	(V1_Sixth Sense, V4_Green Mile, Green Mile)	0.7	0.2	0.1	0.142857	0.714286	-0.04	0.933333
6292	(V1_Sixth Sense, V4_Green Mile, Sixth Sense, G...	(Gladiator)	0.2	0.7	0.1	0.500000	0.714286	-0.04	0.600000
...	...	...	...	...	...	...	...	...	...
29720	(V4_Green Mile, Green Mile, Harry Potter1)	(V3_Harry Potter1, V5_LOTR2, V2_LOTR1)	0.1	0.1	0.1	1.000000	10.000000	0.09	inf
29721	(V4_Green Mile, Harry Potter1, V2_LOTR1)	(V3_Harry Potter1, V5_LOTR2, Green Mile)	0.1	0.1	0.1	1.000000	10.000000	0.09	inf
29722	(V4_Green Mile, V5_LOTR2, Harry Potter1)	(V3_Harry Potter1, Green Mile, V2_LOTR1)	0.1	0.1	0.1	1.000000	10.000000	0.09	inf
29724	(V3_Harry Potter1, Harry Potter1, V2_LOTR1)	(V4_Green Mile, V5_LOTR2, Green Mile)	0.1	0.1	0.1	1.000000	10.000000	0.09	inf

—--------------Plot 1—---------------------

```
import seaborn as sns
sns.lmplot('ChildBks','YouthBks', data=data, fit_reg=False, size=6)
```

<seaborn.axisgrid.FacetGrid at 0x2078a1dc4c0>