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

```
dataset=pd.read_csv("my_movies.csv")
dataset.T
```

	0	1	2	3	4	5	6	7	8	9
V1	Sixth Sense	LOTR1	Harry Potter1	Green Mile	LOTR2	Gladiator	Patriot	Sixth Sense	Gladiator	Patriot
V2	Gladiator	Patriot	Braveheart	Nemo	LOTR1	LOTR2	Nemo	Green Mile	LOTR2	Green Mile
V3	LOTR1	LOTR2	Nemo	Nemo	Gladiator	Green Mile	Sixth Sense	Gladiator	Braveheart	Sixth Sense
V4	Gladiator	Patriot	Sixth Sense	Sixth Sense	Green Mile	Sixth Sense	Gladiator	Patriot	Sixth Sense	LOTR1
V5	Gladiator	Patriot	Sixth Sense	Nemo	Sixth Sense	Nemo	Green Mile	LOTR2	Nemo	Nemo
V6	Harry Potter1	Harry Potter2	Nemo	Sixth Sense	Nemo	Sixth Sense	Sixth Sense	Nemo	Sixth Sense	Sixth Sense
V7	Gladiator	Patriot	Sixth Sense	Nemo	Sixth Sense	Nemo	Green Mile	Sixth Sense	Nemo	Nemo
V8	Gladiator	Patriot	Sixth Sense	Nemo	Sixth Sense	Nemo	Green Mile	Sixth Sense	Nemo	Nemo
V9	Sixth Sense	LOTR1	Gladiator	Green Mile	Sixth Sense	Nemo	Green Mile	Sixth Sense	Nemo	Nemo

```
dummies.iloc[:,5:]
dummies
```

	Sixth Sense	Gladiator	LOTR1	Harry Potter1	Patriot	LOTR2	Harry Potter2	LOTR3	Braveheart	Green Mile
0	1	0	0	0	0	0	0	0	0	0
1	0	1	0	0	1	0	0	0	1	0
2	0	0	1	0	0	1	0	0	0	0
3	1	0	0	0	0	0	0	0	0	1
4	1	1	0	0	0	0	0	0	0	1
5	1	0	0	0	0	0	0	0	0	0
6	1	0	0	0	0	0	0	0	0	1
7	1	0	0	0	0	0	0	0	0	0
8	1	1	0	0	0	0	0	0	0	1
9	1	0	1	0	0	0	0	0	0	1

For whole dataset with support=0.1 , lift_threshold=0.8 and conf_threshold=0.95

```
# using apriori for obtaining support of itemsets (with min_support=0.1)
movie_itemsets2 = apriori(my_mov, min_support=0.1, use_colnames=True)
movie_itemsets2
```

	support	itemsets
0	0.6	(Sixth Sense)
1	0.7	(Gladiator)
2	0.7	(LOTR1)
3	0.3	(Harry Potter1)
4	0.5	(Patriot)
5	0.4	(LOTR2)
6	0.3	(Harry Potter2)
7	0.3	(LOTR3)
8	0.2	(Braveheart)
9	0.2	(Green Mile)
10	0.6	(Gladiator, Sixth Sense)
11	0.3	(LOTR1, Sixth Sense)
12	0.3	(Harry Potter1, Sixth Sense)
13	0.4	(Sixth Sense, Patriot)
14	0.3	(Sixth Sense, LOTR2)
15	0.3	(Sixth Sense, Nemo)
16	0.2	(Green Mile, Sixth Sense)
17	0.3	(Gladiator, Patriot)
18	0.3	(Gladiator, Braveheart)
19	0.2	(Gladiator, Green Mile)
20	0.3	(LOTR1, Harry Potter1)
21	0.3	(LOTR1, Green Mile)
22	0.3	(Harry Potter1, Nemo)
23	0.3	(Green Mile, Harry Potter1)
24	0.2	(Braveheart, Patriot)
25	0.2	(LOTR2, Green Mile)
26	0.2	(Green Mile, LOTR3)
27	0.3	(Gladiator, Sixth Sense, LOTR1)
28	0.3	(Gladiator, Sixth Sense, Nemo)
29	0.2	(Gladiator, Sixth Sense, Green Mile)
30	0.3	(Gladiator, Sixth Sense, LOTR2)
31	0.3	(Gladiator, Sixth Sense, Patriot)
32	0.3	(Harry Potter1, Sixth Sense, Nemo)
33	0.3	(Green Mile, Sixth Sense, Nemo)
34	0.3	(Green Mile, Sixth Sense, LOTR2)
35	0.3	(Gladiator, Braveheart, Patriot)
36	0.3	(Gladiator, Green Mile, LOTR2)
37	0.3	(Harry Potter1, Green Mile, Sixth Sense)
38	0.3	(Green Mile, Sixth Sense, LOTR2)
39	0.3	(Green Mile, Sixth Sense, Patriot)
40	0.3	(Gladiator, Braveheart, Patriot)
41	0.3	(Gladiator, Green Mile, LOTR2)
42	0.3	(LOTR1, LOTR2, Harry Potter1)
43	0.3	(LOTR1, Green Mile, Harry Potter1)
44	0.3	(LOTR1, LOTR2, Green Mile)
45	0.3	(Gladiator, Green Mile, Sixth Sense, LOTR2)
46	0.3	(Gladiator, Green Mile, Sixth Sense, Patriot)
47	0.3	(LOTR1, LOTR2, Harry Potter1, Sixth Sense)
48	0.3	(LOTR1, Green Mile, Harry Potter1, Sixth Sense)
49	0.3	(LOTR1, LOTR2, Green Mile, Sixth Sense)
50	0.3	(Harry Potter1, LOTR2, Green Mile, Sixth Sense)
51	0.3	(LOTR1, LOTR2, Green Mile, Harry Potter1)

```
# rules with min confidence of 0.8
conf_rules = association_rules(movie_itemsets, metric='confidence', min_threshold=0.8)
conf_rules
```

	antecedents	consequents	antecedent support	consequent support	support	confidence	lift	leverage	conviction
0	(Sixth Sense)	(Gladiator)	0.6	0.7	0.6	0.833333	1.190476	0.09	1.8
1	(LOTR1)	(Sixth Sense)	0.7	0.6	0.3	0.428571	0.714286	-0.12	0.7
2	(Green Mile)	(Sixth Sense)	0.2	0.6	0.2	1.000000	1.666667	0.08	inf
3	(Sixth Sense, Patriot)	(Gladiator)	0.4	0.7	0.3	0.750000	1.071429	0.02	1.2
4	(Patriot)	(Gladiator)	0.5	0.7	0.3	0.600000	0.857143	-0.05	0.75
5	(Sixth Sense, LOTR2)	(LOTR1, LOTR2, Green Mile)	0.3	0.2	0.2	0.666667	3.333333	0.14	2.4
6	(LOTR1, LOTR2, Green Mile)	(Sixth Sense, LOTR2)	0.2	0.3	0.2	1.000000	3.333333	0.14	inf
7	(LOTR1, Green Mile)	(Sixth Sense, LOTR2)	0.3	0.3	0.2	0.666667	2.222222	0.11	2.1
8	(Sixth Sense, LOTR2)	(LOTR1, LOTR2, Green Mile)	0.3	0.2	0.2	0.666667	3.333333	0.14	2.4
9	(Sixth Sense, LOTR2)	(Green Mile, Sixth Sense)	0.3	0.2	0.2	0.666667	3.333333	0.14	2.4
10	(Sixth Sense, Patriot)	(Gladiator)	0.4	0.7	0.3	0.750000	1.071429	0.02	1.2
11	(Gladiator)	(Sixth Sense, Patriot)	0.7	0.4	0.3	0.428571	1.071429	0.02	1.05
12	(Gladiator, Braveheart)	(Patriot)	0.3	0.5	0.3	1.000000	2.000000	0.15	inf
13	(Gladiator, Patriot)	(Braveheart)	0.3	0.2	0.3	1.000000	5.000000	0.24	inf
14	(Gladiator, Green Mile)	(LOTR2)	0.2	0.3	0.2	1.000000	3.333333	0.14	inf
15	(LOTR2)	(Gladiator, Green Mile)	0.3	0.2	0.2	0.666667	3.333333	0.14	2.4
16	(Gladiator, Sixth Sense, LOTR1)	(Harry Potter1)	0.3	0.3	0.3	1.000000	3.333333	0.21	inf
17	(Harry Potter1, Sixth Sense, LOTR1)	(Gladiator)	0.3	0.7	0.3	1.000000	1.428571	0.09	inf
18	(Gladiator, LOTR1)	(Sixth Sense)	0.3	0.6	0.3	1.000000	1.666667	0.12	inf
19	(Sixth Sense, LOTR1)	(Gladiator)	0.3	0.7	0.3	1.000000	1.428571	0.09	inf
20	(Gladiator, Sixth Sense, Nemo)	(Green Mile)	0.3	0.2	0.2	0.666667	3.333333	0.14	2.4
21	(Gladiator, Green Mile, Sixth Sense)	(Nemo)	0.2	0.3	0.2	1.000000	3.333333	0.14	inf
22	(Gladiator, Green Mile, Nemo)	(Sixth Sense)	0.2	0.6	0.2	1.000000	1.666667	0.08	inf
23	(Gladiator, Sixth Sense, Nemo)	(Green Mile)	0.3	0.2	0.2	0.666667	3.333333	0.14	2.4
24	(Gladiator, Sixth Sense, Green Mile)	(Nemo)	0.2	0.3	0.2	1.000000	3.333333	0.14	inf
25	(Gladiator, Sixth Sense, LOTR2)	(Green Mile)	0.3	0.2	0.2	0.666667	3.333333	0.14	2.4
26	(Gladiator, Sixth Sense, Green Mile)	(LOTR2)	0.2	0.3	0.2	1.000000	3.333333	0.14	inf
27	(Gladiator, Sixth Sense, Patriot)	(Braveheart)	0.3	0.2	0.3	1.000000	5.000000	0.24	inf
28	(Gladiator, Braveheart, Patriot)	(Sixth Sense)	0.3	0.6	0.3	1.000000	1.666667	0.12	inf
29	(Gladiator, Braveheart)	(Sixth Sense, Patriot)	0.3	0.4	0.3	1.000000	2.500000	0.18	inf
30	(Gladiator, Sixth Sense, Patriot)	(Braveheart)	0.3	0.2	0.3	1.000000	5.000000	0.24	inf
31	(Gladiator, Braveheart)	(Sixth Sense, Patriot)	0.3	0.4	0.3	1.000000	2.500000	0.18	inf
32	(Gladiator, Green Mile)	(LOTR2)	0.2	0.3	0.2	1.000000	3.333333	0.14	inf
33	(LOTR2)	(Gladiator, Green Mile)	0.3	0.2	0.2	0.666667	3.333333	0.14	2.4
34	(LOTR1, Harry Potter1)	(Sixth Sense)	0.3	0.6	0.3	1.000000	1.666667	0.12	inf
35	(Sixth Sense, LOTR1)	(Harry Potter1)	0.3	0.3	0.3	1.000000	3.333333	0.21	inf
36	(Harry Potter1, Sixth Sense)	(LOTR1)	0.3	0.7	0.3	1.000000	1.428571	0.09	inf
37	(Harry Potter1, Sixth Sense, LOTR1)	(Gladiator)	0.3	0.7	0.3	1.000000	1.428571	0.09	inf
38	(Gladiator, LOTR1)	(Sixth Sense, Harry Potter1)	0.3	0.3	0.3	1.000000	3.333333	0.21	inf
39	(Sixth Sense, LOTR1)	(Gladiator, Harry Potter1)	0.3	0.3	0.3	1.000000	3.333333	0.21	inf
40	(Sixth Sense, Harry Potter1)	(Gladiator, LOTR1)	0.3	0.7	0.3	1.000000	1.428571	0.09	inf
41	(Gladiator, Sixth Sense, LOTR1)	(Harry Potter1)	0.3	0.3	0.3	1.000000	3.333333	0.21	inf
42	(Gladiator, Sixth Sense, Nemo)	(Green Mile, Sixth Sense)	0.3	0.2	0.2	0.666667	3.333333	0.14	2.4
43	(Gladiator, Green Mile, Sixth Sense)	(Nemo)	0.2	0.3	0.2	1.000000	3.333333	0.14	inf
44	(Gladiator, Green Mile, Nemo)	(Sixth Sense)	0.2	0.6	0.2	1.000000	1.666667	0.08	inf
45	(Gladiator, Sixth Sense, Nemo)	(Green Mile)	0.3	0.2	0.2	0.666667	3.333333	0.14	2.4
46	(Gladiator, Sixth Sense, Green Mile)	(Nemo)	0.2	0.3	0.2	1.000000	3.333333	0.14	inf
47	(Gladiator, Sixth Sense, LOTR2)	(Green Mile)	0.3	0.2	0.2	0.666667	3.333333	0.14	2.4
48	(Gladiator, Sixth Sense, Green Mile)	(LOTR2)	0.2	0.3	0.2	1.000000	3.333333	0.14	inf
49	(Gladiator, Sixth Sense, Patriot)	(Braveheart)	0.3	0.2	0.3	1.000000	5.000000	0.24	inf
50	(Gladiator, Braveheart, Patriot)	(Sixth Sense)	0.3	0.6	0.3	1.000000	1.666667	0.12	inf
51	(Gladiator, Braveheart)	(Sixth Sense, Patriot)	0.3	0.4	0.3	1.000000	2.500000	0.18	inf
52	(Gladiator, Sixth Sense, Patriot)	(Braveheart)	0.3	0.2	0.3	1.000000	5.000000	0.24	inf
53	(Gladiator, Braveheart)	(Sixth Sense, Patriot)	0.3	0.4	0.3	1.000000	2.500000	0.18	inf
54	(LOTR1, LOTR2, Harry Potter1)	(Green Mile)	0.3	0.2	0.2	0.666667	3.333333	0.14	2.4
55	(LOTR1, Green Mile, Harry Potter1)	(LOTR2)	0.3	0.3	0.2	0.666667	2.222222	0.11	2.1
56	(LOTR1, LOTR2, Green Mile)	(Harry Potter1)	0.3	0.3	0.2	0.666667	2.222222	0.11	2.1
57	(Gladiator, Green Mile, Sixth Sense, LOTR2)	(Nemo)	0.2	0.3	0.2	1.000000	3.333333	0.14	inf
58	(Gladiator, Green Mile, Sixth Sense, Patriot)	(Nemo)	0.2	0.3	0.2	1.000000	3.333333	0.14	inf
59	(Gladiator, Braveheart, Patriot)	(Green Mile)	0.3	0.2	0.2	0.666667	3.333333	0.14	2.4
60	(Gladiator, Green Mile, LOTR2)	(Braveheart)	0.2	0.2	0.2	1.000000	5.000000	0.24	inf
61	(Gladiator, Braveheart, Patriot)	(Green Mile, LOTR2)	0.3	0.2	0.2	0.666667	3.333333	0.14	2.4

```
# using apriori for obtaining support of itemsets (with min_support=0.1)
movie_itemsets2 = apriori(my_mov, min_support=0.1, use_colnames=True)
movie_itemsets2
```

	support	itemsets
0	0.6	(Sixth Sense)
1	0.7	(Gladiator)
2	0.7	(LOTR1)
3	0.3	(Harry Potter1)
4	0.5	(Patriot)
5	0.4	(LOTR2)
6	0.3	(Green Mile)
7	0.3	(Harry Potter2)
8	0.3	(LOTR3)
9	0.2	(Braveheart)
10	0.6	(Gladiator, Sixth Sense)
11	0.3	(LOTR1, Sixth Sense)
12	0.3	(Harry Potter1, Sixth Sense)
13	0.4	(Sixth Sense, Patriot)
14	0.3	(Sixth Sense, LOTR2)
15	0.3	(Sixth Sense, Nemo)
16	0.2	(Green Mile, Sixth Sense)
17	0.3	(Gladiator, Patriot)
18	0.3	(Gladiator, Braveheart)
19	0.2	(Gladiator, Green Mile)
20	0.3	(LOTR1, Harry Potter1)
21	0.3	(LOTR1, Green Mile)
22	0.3	(Harry Potter1, Nemo)
23	0.3	(Green Mile, Harry Potter1)
24	0.2	(Braveheart, Patriot)
25	0.2	(LOTR2, Green Mile)
26	0.2	(Green Mile, LOTR3)
27	0.3	(Gladiator, Sixth Sense, LOTR1)
28	0.3	(Gladiator, Sixth Sense, Nemo)
29	0.2	(Gladiator, Sixth Sense, Green Mile)
30	0.3	(Gladiator, Sixth Sense, LOTR2)
31	0.3	(Gladiator, Sixth Sense, Patriot)
32	0.3	(Harry Potter1, Sixth Sense, Nemo)
33	0.3	(Green Mile, Sixth Sense, Nemo)
34	0.3	(Green Mile, Sixth Sense, LOTR2)
35	0.3	(Gladiator, Braveheart, Patriot)
36	0.3	(Gladiator, Green Mile, LOTR2)
37	0.3	(Harry Potter1, Green Mile, Sixth Sense)
38	0.3	(Green Mile, Sixth Sense, LOTR2)
39	0.3	(Green Mile, Sixth Sense, Patriot)
40	0.3	(Gladiator, Braveheart, Patriot)
41	0.3	(Gladiator, Green Mile, LOTR2)
42	0.3	(LOTR1, LOTR2, Harry Potter1)
43	0.3	(LOTR1, Green Mile, Harry Potter1)
44	0.3	(LOTR1, LOTR2, Green Mile)
45	0.3	(Gladiator, Green Mile, Sixth Sense, LOTR2)
46	0.3	(Gladiator, Green Mile, Sixth Sense, Patriot)
47	0.3	(LOTR1, LOTR2, Harry Potter1, Sixth Sense)
48	0.3	(LOTR1, Green Mile, Harry Potter1, Sixth Sense)
49	0.3	(LOTR1, LOTR2, Green Mile, Sixth Sense)
50	0.3	(Harry Potter1, LOTR2, Green Mile, Sixth Sense)
51	0.3	(LOTR1, LOTR2, Green Mile, Harry Potter1)

```
# rules with min confidence of 0.8
conf_rules = association_rules(movie_itemsets, metric='confidence', min_threshold=0.8)
conf_rules
```

	antecedents	consequents	antecedent support	consequent support	support	confidence	lift	leverage	conviction
0	(Sixth Sense)	(Gladiator)	0.6	0.7	0.6	0.833333	1.190476	0.09	1.8
1	(LOTR1)	(Sixth Sense)	0.7	0.6	0.3	0.428571	0.714286	-0.12	0.7
2	(Green Mile)	(Sixth Sense)	0.2	0.6	0.2	1.000000	1.666667	0.08	inf
3	(Sixth Sense, Patriot)	(Gladiator)	0.4	0.7	0.3	0.750000	1.071429	0.02	1.2
4	(Patriot)	(Gladiator)	0.5	0.7	0.3	0.600000	0.857143	-0.05	0.75
5	(Sixth Sense, LOTR2)	(LOTR1, LOTR2, Green Mile)	0.3	0.2	0.2	0.666667	3.333333	0.14	2.4
6	(LOTR1, LOTR2, Green Mile)	(Sixth Sense, LOTR2)	0.2	0.3	0.2	1.000000	3.333333	0.14	inf
7	(LOTR1, Green Mile)	(Sixth Sense, LOTR2)	0.3	0.3	0.2	0.666667	2.222222	0.11	2.1
8	(Sixth Sense, LOTR2)	(LOTR1, LOTR2, Green Mile)	0.3	0.2	0.2	0.666667	3.333333	0.14	2.4
9	(Sixth Sense, LOTR2)	(Green Mile, Sixth Sense)	0.3	0.2	0.2	0.666667	3.333333	0.14	2.4
10	(Sixth Sense, Patriot)	(Gladiator)	0.4	0.7	0.3	0.750000	1.071429	0.02	1.2
11	(Gladiator)	(Sixth Sense, Patriot)	0.7	0.4	0.3	0.428571	1.071429	0.02	1.05
12	(Gladiator, Braveheart)	(Patriot)	0.3	0.5	0.3	1.000000	2.000000	0.15	inf
13	(Gladiator, Patriot)	(Braveheart)	0.3	0.2	0.3	1.000000	5.000000	0.24	inf
14	(Gladiator, Green Mile)	(LOTR2)	0.2	0.3	0.2	1.000000	3.333333	0.14	inf
15	(LOTR2)	(Gladiator, Green Mile)	0.3	0.2	0.2	0.666667	3.333333	0.14	2.4
16	(Gladiator, Sixth Sense, LOTR1)	(Harry Potter1)	0.3	0.3	0.3	1.000000	3.333333	0.21	inf
17	(Harry Potter1, Sixth Sense, LOTR1)	(Gladiator)	0.3	0.7	0.3	1.000000	1.428571	0.09	inf
18	(Gladiator, LOTR1)	(Sixth Sense)	0.3	0.6	0.3	1.000000	1.666667	0.12	inf
19	(Sixth Sense, LOTR1)	(Gladiator)	0.3	0.7	0.3	1.000000	1.428571	0.09	inf
20	(Gladiator, Sixth Sense, Nemo)	(Green Mile)	0.3	0.2	0.2	0.666667	3.333333	0.14	2.4
21	(Gladiator, Green Mile, Sixth Sense)	(Nemo)	0.2	0.3	0.2	1.000000	3.333333	0.14	inf
22	(Gladiator, Green Mile, Nemo)	(Sixth Sense)	0.2	0.6	0.2	1.000000	1.666667	0.08	inf
23	(Gladiator, Sixth Sense, Nemo)	(Green Mile)	0.3	0.2	0.2	0.666667	3.333333	0.14	2.4
24	(Gladiator, Sixth Sense, Green Mile)	(Nemo)	0.2	0.3	0.2	1.000000	3.333333	0.14	inf
25	(Gladiator, Sixth Sense, LOTR2)	(Green Mile)	0.3	0.2	0.2	0.666667	3.333333	0.14	2.4
26	(Gladiator, Sixth Sense, Green Mile)	(LOTR2)	0.2	0.3	0.2	1.000000	3.333333	0.14	inf
27	(Gladiator, Sixth Sense, Patriot)	(Braveheart)	0.3	0.2	0.3	1.000000	5.000000	0.24	inf
28	(Gladiator, Braveheart, Patriot)	(Sixth Sense)	0.3	0.6	0.3	1.000000	1.666667	0.12	inf
29	(Gladiator, Braveheart)	(Sixth Sense, Patriot)	0.3	0.4	0.3	1.000000	2.500000	0.18	inf
30	(Gladiator, Sixth Sense, Patriot)	(Braveheart)	0.3	0.2	0.3	1.000000	5.000000	0.24	inf
31	(Gladiator, Braveheart)	(Sixth Sense, Patriot)	0.3	0.4	0.3	1.000000	2.500000	0.18	inf
32	(Gladiator, Green Mile)	(LOTR2)	0.2	0.3	0.2	1.000000	3.333333	0.14	inf
33	(LOTR2)	(Gladiator, Green Mile)	0.3	0.2	0.2	0.666667	3.333333	0.14	2.4
34	(LOTR1, Harry Potter1)	(Sixth Sense)	0.3	0.6	0.3	1.000000	1.666667	0.12	inf
35	(Sixth Sense, LOTR1)	(Harry Potter1)	0.3	0.3	0.3	1.000000	3.333333	0.21	inf
36	(Harry Potter1, Sixth Sense)	(LOTR1)	0.3	0.7	0.3	1.000000	1.428571	0.09	inf
37	(Harry Potter1, Sixth Sense, LOTR1)	(Gladiator)	0.3	0.7	0.3	1.000000	1.428571	0.09	inf
38	(Gladiator, LOTR1)	(Sixth Sense, Harry Potter1)	0.3	0.3	0.3	1.000000	3.333333	0.21	inf
39	(Sixth Sense, LOTR1)	(Gladiator, Harry Potter1)	0.3	0.3	0.3	1.000000	3.333333	0.21	inf
40	(Sixth Sense, Harry Potter1)	(Gladiator, LOTR1)	0.3	0.7	0.3	1.000000	1.428571	0.09	inf
41	(Gladiator, Sixth Sense, LOTR1)	(Harry Potter1)	0.3	0.3	0.3	1.000000	3.333333	0.21	inf
42	(Gladiator, Sixth Sense, Nemo)	(Green Mile, Sixth Sense)	0.3	0.2	0.2	0.666667	3.333333	0.14	2.4
43	(Gladiator, Green Mile, Sixth Sense)	(Nemo)	0.2	0.3	0.2	1.000000	3.333333	0.14	inf
44	(Gladiator, Green Mile, Nemo)	(Sixth Sense)	0.2	0.6	0.2	1.000000	1.666667	0.08	inf
45	(Gladiator, Sixth Sense, Nemo)	(Green Mile)	0.3	0.2	0.2	0.666667	3.333333	0.14	2.4
46	(Gladiator, Sixth Sense, Green Mile)	(Nemo)	0.2	0.3	0.2	1.000000	3.333333	0.14	inf
47	(Gladiator, Sixth Sense, LOTR2)	(Green Mile)	0.3	0.2	0.2	0.666667	3.333333	0.14	2.4
48	(Gladiator, Sixth Sense, Green Mile)	(LOTR2)	0.2	0.3	0.2	1.000000	3.333333	0.14	inf
49	(Gladiator, Sixth Sense, Patriot)	(Braveheart)	0.3	0.2	0.3	1.000000	5.000000	0.24	inf
50	(Gladiator, Braveheart, Patriot)	(Sixth Sense)	0.3	0.6	0.3	1.000000	1.666667	0.12	inf
51	(Gladiator, Braveheart)	(Sixth Sense, Patriot)	0.3	0.4	0.3	1.000000	2.500000	0.18	inf
52	(Gladiator, Sixth Sense, Patriot)	(Braveheart)	0.3	0.2	0.3	1.000000	5.000000	0.24	inf
53	(Gladiator, Braveheart)	(Sixth Sense, Patriot)	0.3	0.4	0.3	1.000000	2.500000	0.18	inf
54	(LOTR1, LOTR2, Harry Potter1)	(Green Mile)	0.3	0.2	0.2	0.666667	3.333333	0.14	2.4
55	(LOTR1, Green Mile, Harry Potter1)	(LOTR2)	0.3	0.3	0.2	0.666667	2.222222	0.11	2.1
56	(LOTR1, LOTR2, Green Mile)	(Harry Potter1)	0.3	0.3	0.2	0.666667	2.222222	0.11	2.1
57	(Gladiator, Green Mile, Sixth Sense, LOTR2)	(Nemo)	0.2	0.3	0.2	1.000000	3.333333	0.14	inf
58	(Gladiator, Green Mile, Sixth Sense, Patriot)	(Nemo)	0.2	0.3	0.2	1.000000	3.333333	0.14	inf
59	(Gladiator, Braveheart, Patriot)	(Green Mile)	0.3	0.2	0.2	0.666667	3.333333	0.14	2.4
60	(Gladiator, Green Mile, LOTR2)	(Braveheart)	0.2	0.2	0.2	1.000000	5.000000	0.24	inf
61	(Gladiator, Braveheart, Patriot)	(Green Mile, LOTR2)	0.3	0.2	0.2	0.666667	3.333333	0.14	2.4

For movie dataset top 5 datapoints with support=0.2 and threshold=0.95

```
dummies.head()
```

	Sixth Sense	LOTR1	Harry Potter1	Patriot	Harry Potter2	LOTR2	Braveheart	Green Mile
0	1	0	0	0	0	0	0	0
1	0	0	0	1	0	0	1	0
2	0	1	0	0	0	1	0	0
3	1	0	0	0	0	0	0	1
4	1	0	0	0	0	0	0	1

```
movie_itemsets2 = apriori(mov1, min_support=0.2, use_colnames=True)
movie_itemsets2
```

	support	itemsets
0	0.6	(Sixth Sense)
1	0.7	(Gladiator)
2	0.7	(LOTR1)
3	0.5	(Patriot)
4	0.4	(LOTR2)
5	0.3	(Green Mile)
6	0.6	(Gladiator, Sixth Sense)
7	0.3	(LOTR1, Sixth Sense)
8	0.4	(Sixth Sense, Patriot)
9	0.3	(Sixth Sense, LOTR2)
10	0.3	(Sixth Sense, Nemo)
11	0.2	(Green Mile, Sixth Sense)
12	0.3	(Gladiator, Patriot)
13	0.3	(Gladiator, Braveheart)
14	0.2	(Gladiator, Green Mile)
15	0.3	(LOTR1, Harry Potter1)
16	0.3	(LOTR1, Green Mile)
17	0.3	(Harry Potter1, Nemo)
18	0.3	(Green Mile, Harry Potter1)
19	0.2	(Braveheart, Patriot)
20	0.2	(LOTR2, Green Mile)
21	0.2	(Green Mile, LOTR3)
22	0.3	(Gladiator, Sixth Sense, LOTR1)
23	0.3	(Gladiator, Sixth Sense, Nemo)
24	0.2	(Gladiator, Sixth Sense, Green Mile)
25	0.3	(Gladiator, Sixth Sense, LOTR2)
26	0.3	(Gladiator, Sixth Sense, Patriot)
27	0.3	(Harry Potter1, Sixth Sense, Nemo)
28	0.3	(Green Mile, Sixth Sense, Nemo)
29	0.3	(Green Mile, Sixth Sense, LOTR2)
30	0.3	(Gladiator, Braveheart, Patriot)
31	0.3	(Gladiator, Green Mile, LOTR2)
32	0.3	(Harry Potter1, Green Mile, Sixth Sense)
33	0.3	(Green Mile, Sixth Sense, LOTR2)
34	0.3	(Green Mile, Sixth Sense, Patriot)
35	0.3	(Gladiator, Braveheart, Patriot)
36	0.3	(Gladiator, Green Mile, LOTR2)
37	0.3	(LOTR1, LOTR2, Harry Potter1)
38	0.3	(LOTR1, Green Mile, Harry Potter1)
39	0.3	(LOTR1, LOTR2, Green Mile)
40	0.3	(Harry Potter1, LOTR2, Green Mile, Sixth Sense)
41	0.3	(LOTR1, LOTR2