

A.

Minimum Support Threshold = 50%

Transaction ID	Items				
1	onions	potatoes	burger	cereal	
2	potato chip	burger	beer		
3	onions	potatoes	potato chip	burger	beer
4	potato chip	beer	onions		
5	eggs	cereal	potato chip		

Candidates

One item

Items	Transaction ID					Support
	1	2	3	4	5	
beer	0	1	1	1	0	60
burger	1	1	1	0	0	60
cereal	1	0	0	0	1	40
eggs	0	0	0	0	1	20
onions	1	0	1	1	0	60
potatoes	1	0	1	0	0	40
potato chip	0	1	1	1	1	80

Two items

Items	Transaction ID					Support
	1	2	3	4	5	
{beer, burger}	0	1	1	0	0	40
{beer, onions}	0	0	1	1	0	40
{beer, potato chip}	0	1	1	1	0	60
{burger, onions}	1	0	1	0	0	40
{burger, potato chip}	0	1	1	0	0	40
{onions, potato chip}	0	0	1	1	0	40

Not creating three items set.

## Association Rule

Rule No.	Frequent itemset	Confidence	Lift
1	beer -> potato chip	100%	1.25
2	potato chip -> beer	75%	1.25

If customer buys 'beer', they will certainly buy 'potato chip'. (Confidence = 100%)

If customer buys 'potato chip', they will probably buy 'beer'. (Confidence = 75%)

'beer' and 'potato chip' has a lift = 1.25.

These two events are independent of each other.

The converse is true for { beer -> potato chip }.

We may conclude that if someone buys potato chip, he is very likely to buy 'beer' as well.

B.

## Criteria of Selection

Minimum Length of the relationship (Both Antecedent and Consequent)	=	2
Minimum Support	=	0.001
Minimum Confidence	=	0.5
Minimum number of transaction of the relationship	=	5
Code 2	=	OMPZ

Support of “Code2 = OMPZ” = 0.66639

## Top 10 Antecedents

	Antecedent		Support of Antecedent	Number of transaction of the relationship	Support of Relationship	Confidence	Lift
	Code 1	Code 3					
1	FLAM		0.00194	7	0.00194	1	1.50062
2	NAPX		0.10548	368	0.10188	0.96588	1.44942
3	MELO		0.03101	105	0.02907	0.93750	1.40683
4	INDM		0.00748	25	0.00692	0.92593	1.38947
5	ASPT		0.04679	152	0.04208	0.89941	1.34967
6	IBUP		0.03433	111	0.03073	0.89516	1.34330
7	DICF		0.00941	28	0.00775	0.82353	1.23581
8	MOBC		0.01910	56	0.01550	0.81159	1.21790
9	ASA.		0.27243	766	0.21207	0.77846	1.16817
10	ANTC	XAND	0.00249	7	0.00194	0.77778	1.16715

Index	antecedents	consequents	antecedent support	consequent support	support	confidence	lift	leverage	conviction	no_of_transaction_for_relationship
15	frozenset({'1_FLAM'})	frozenset({'2_OMPZ'})	0.00193798	0.66639	0.00193798	1	1.50062	0.000646531	inf	7
21	frozenset({'1_NAPX'})	frozenset({'2_OMPZ'})	0.105482	0.66639	0.101883	0.965879	1.44942	0.0315907	9.77734	368
19	frozenset({'1_MELO'})	frozenset({'2_OMPZ'})	0.0310078	0.66639	0.0290698	0.9375	1.40683	0.00040652	5.33776	105
17	frozenset({'1_INDM'})	frozenset({'2_OMPZ'})	0.00747508	0.66639	0.00692137	0.925926	1.38947	0.00194005	4.50374	25
11	frozenset({'1_ASPT'})	frozenset({'2_OMPZ'})	0.0467885	0.66639	0.0420819	0.899408	1.34967	0.0109026	3.31648	152
16	frozenset({'1_IBUP'})	frozenset({'2_OMPZ'})	0.03433	0.66639	0.0307309	0.895161	1.3433	0.00785373	3.18213	111
14	frozenset({'1_DICF'})	frozenset({'2_OMPZ'})	0.00941307	0.66639	0.00775194	0.823529	1.23581	0.00147917	1.89046	28
20	frozenset({'1_MOBC'})	frozenset({'2_OMPZ'})	0.019103	0.66639	0.0155039	0.811594	1.2179	0.00277384	1.7707	56
10	frozenset({'1_ASA.'})	frozenset({'2_OMPZ'})	0.272425	0.66639	0.212071	0.778455	1.16817	0.0305295	1.50584	766
28	frozenset({'1_ANTC', '3_XAND'})	frozenset({'2_OMPZ'})	0.00249169	0.66639	0.00193798	0.777778	1.16715	0.000277545	1.50125	7