

ASSOCIATION



ALGORITMA FP-GROWTH & ECLAT

FP-GROWTH



Transaksi	Barang yang dibeli	
1	Bread, Jelly, Peanut Butter	B, J, P
2	Bread, Peanut Butter	B, P
3	Bread, Milk, Peanut Butter	B, M, P
4	Eggs, Bread	E, B
5	Eggs, Milk	E, M

Items	Count	Support
M	2	$2/5 = 40\%$
B	4	$4/5 = 80\%$
P	3	$3/5 = 60\%$
E	2	$2/5 = 40\%$
J	1	$1/5 = 20\%$

$K/\theta = 2$, MIN SUPPORT 40%



Items	Count	Support
M	2	$2/5 = 40\%$
B	4	$4/5 = 80\%$
P	3	$3/5 = 60\%$
E	2	$2/5 = 40\%$

Sort berdasarkan Count / Support

Items	Count	Support
B	4	$4/5 = 80\%$
P	3	$3/5 = 60\%$
M	2	$2/5 = 40\%$
E	2	$2/5 = 40\%$

Frequent Pattern Tree

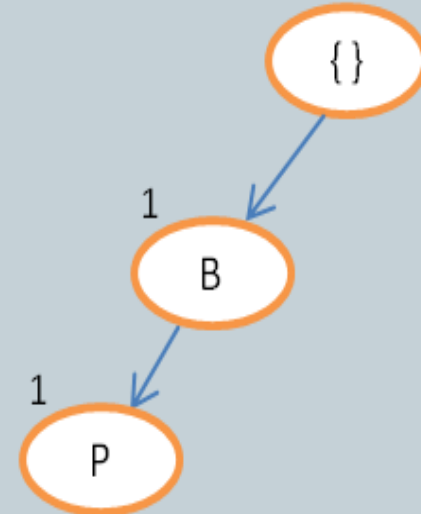


F-List

{ B, P, M, E }

Transaksi	Barang yang dibeli
1	B, P
2	B, P
3	B, P, M
4	B, E
5	M, E

Transaksi 1



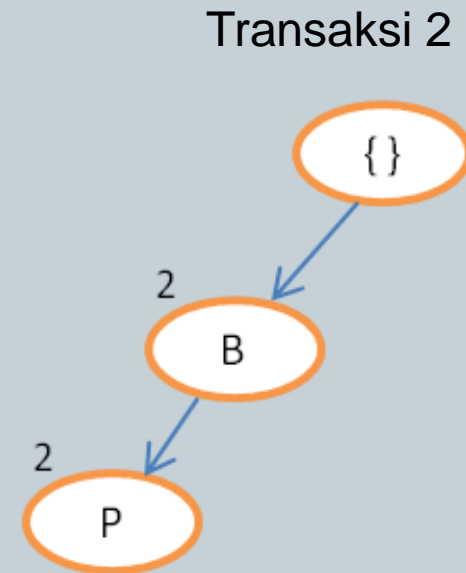
Frequent Pattern Tree



F-List

{ B, P, M, E }

Transaksi	Barang yang dibeli
1	B, P
2	B, P
3	B, P, M
4	B, E
5	M, E



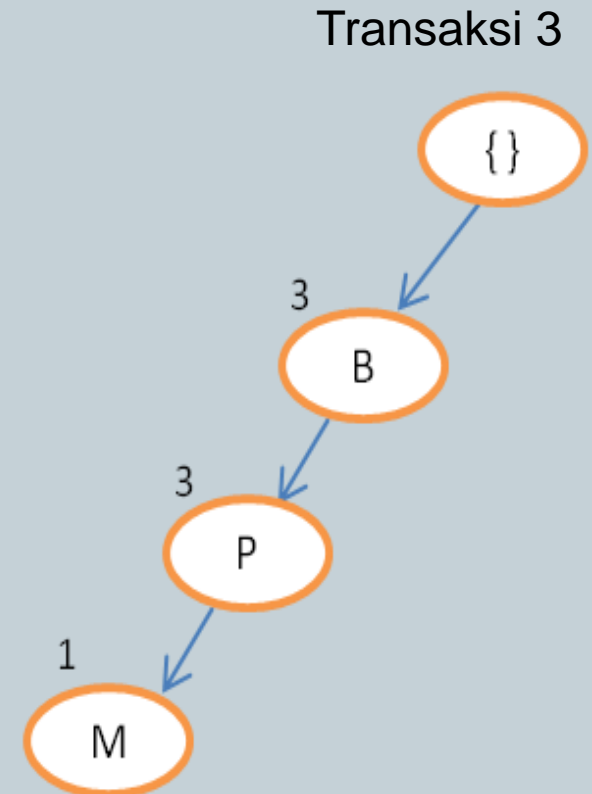
Frequent Pattern Tree



F-List

{ B, P, M, E }

Transaksi	Barang yang dibeli
1	B, P
2	B, P
3	B, P, M
4	B, E
5	M, E



Frequent Pattern Tree

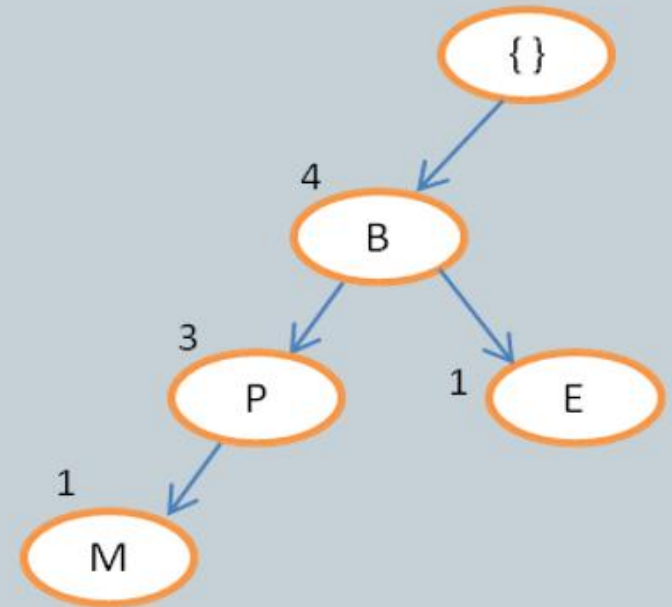


F-List

{ B, P, M, E }

Transaksi	Barang yang dibeli
1	B, P
2	B, P
3	B, P, M
4	B, E
5	M, E

Transaksi 4



FP-TREE



F-List

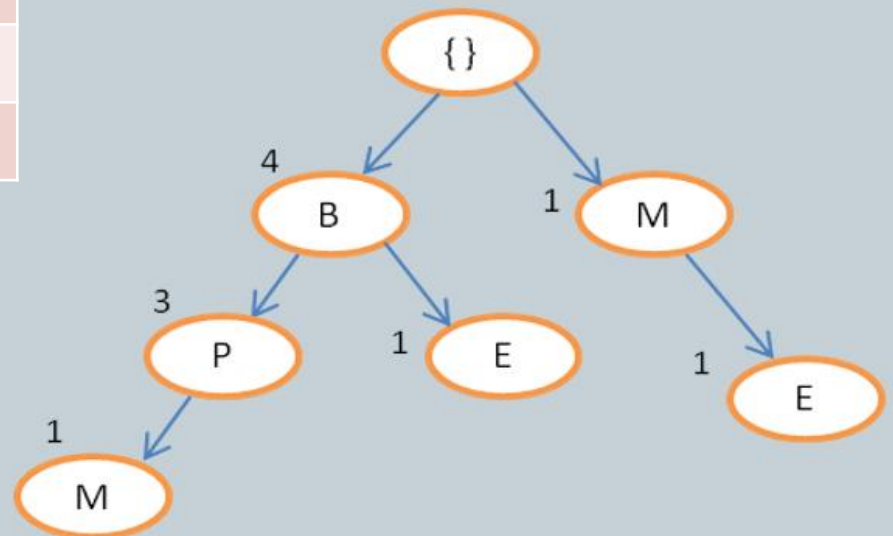
{ B, P, M, E }

Transaksi	Barang yang dibeli
1	B, P
2	B, P
3	B, P, M
4	B, E
5	M, E

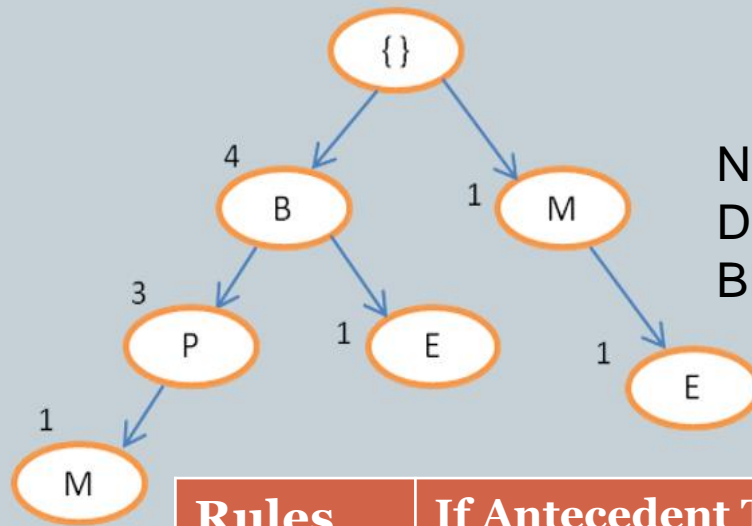
$K/\theta = 2$, MIN SUPPORT $2/5 = 40\%$

Best	Support	Confidence
{ B, P }	$3/5 = 60\%$	$3/4 = 75\%$

Transaksi 5



FP-GROWTH RULES



Next Problem → Search Tree
DFS (Depth First Search)
BFS (Breadth First Search)



Items	Count
M	2
B	4
P	3
E	2
J	1

Rules	If Antecedent Then Consequent	Support	Confidence
{B, P}	If B Then P	3/5 = 60%	3/4 = 75%
	If P Then B		3/3 = 100%
{B, P, M}	If B And P Then M	1/5 = 20%	1/3 = 33,3%
{B, E}	If B Then E	1/5 = 20%	1/3 = 33,3%
{M, E}	If M Then E	1/5 = 20%	1/3 = 33,3%
{P, M}	If P Then M	1/5 = 20%	1/3 = 33,3%

ECLAT



Transaksi	Barang yang dibeli	
1	Bread, Jelly, Peanut Butter	B, J, P
2	Bread, Peanut Butter	B, P
3	Bread, Milk, Peanut Butter	B, M, P
4	Eggs, Bread	E, B
5	Eggs, Milk	E, M

Items	Transaksi
B	1, 2, 3, 4
J	1
P	1, 2, 3
M	3, 5
E	4, 5



Items	1	2	3	4	5	Σ
B	1	1	1	1	0	4
J	1	0	0	0	0	1
P	1	1	1	0	0	3
M	0	0	1	0	1	2
E	0	0	0	1	1	2



Langkah selanjutnya sama dengan association rules, hanya metode kombinasi menjadi per baris.

IMPLEMENTASI (PYTHON)



<https://www.kaggle.com/code/andrewtoth78/market-basket-analysis-apriori-eclat-fp-growth>

Tugas Project Association – Data Mining,

- Lakukan 3 Algoritma ini di Python atau bisa menggunakan bahasa pemrograman lain.
- Gunakan data dengan jumlah transaksi > 100.000.
- Dikumpulkan di setengah jam awal perkuliahan M5.

Algoritma mana yg lebih cepat dieksekusi?