

1 Feb 2021

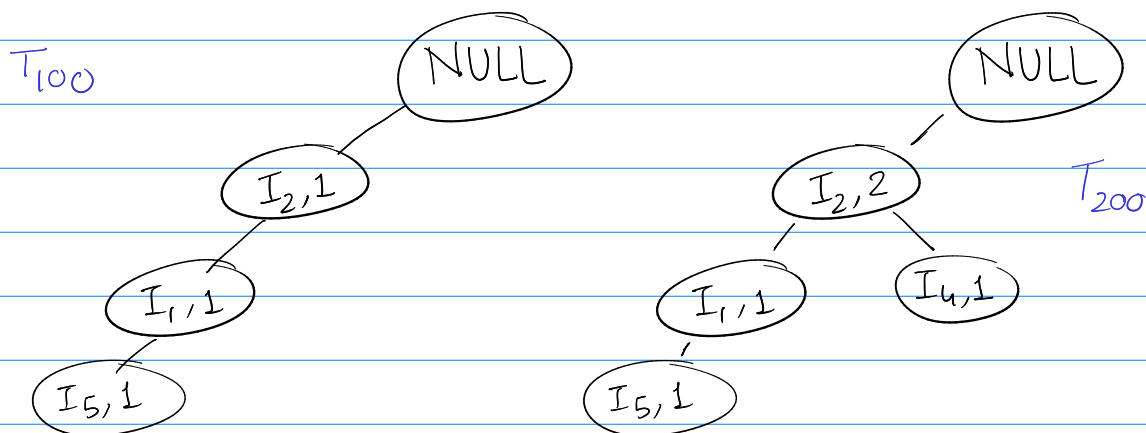
Tut 2 - FP Tree Algo.

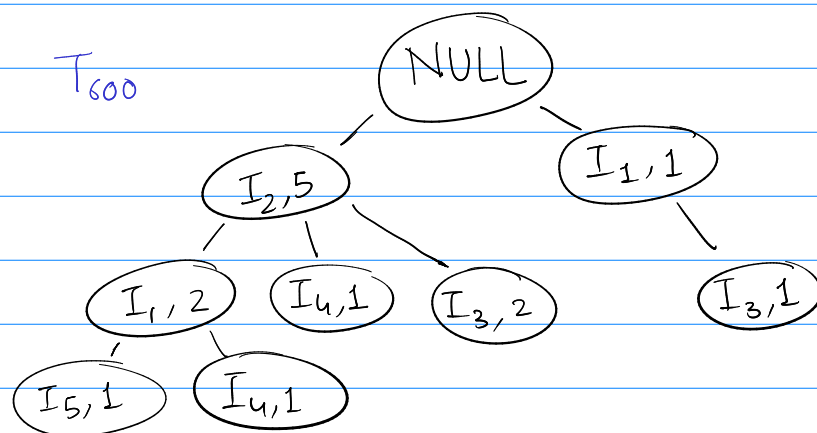
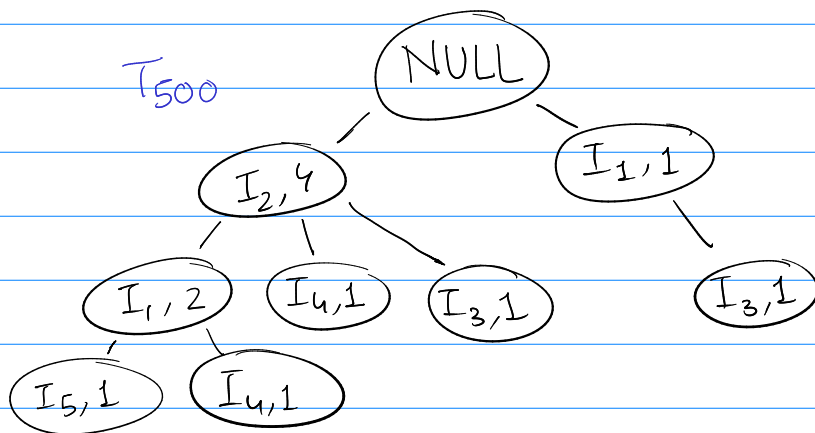
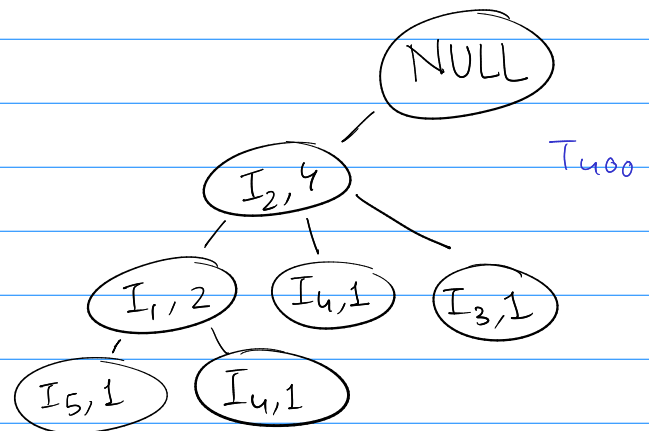
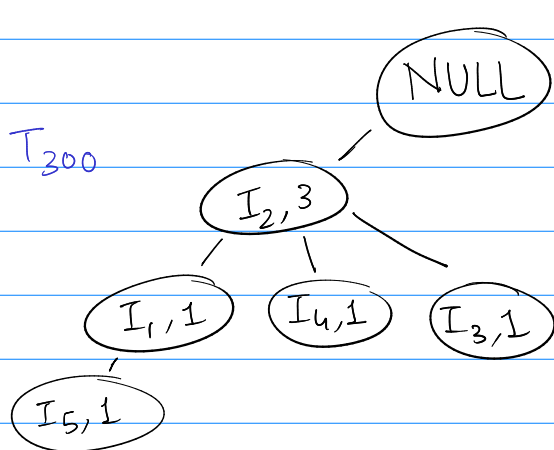
IIT2018179 - Mohammed Aedil

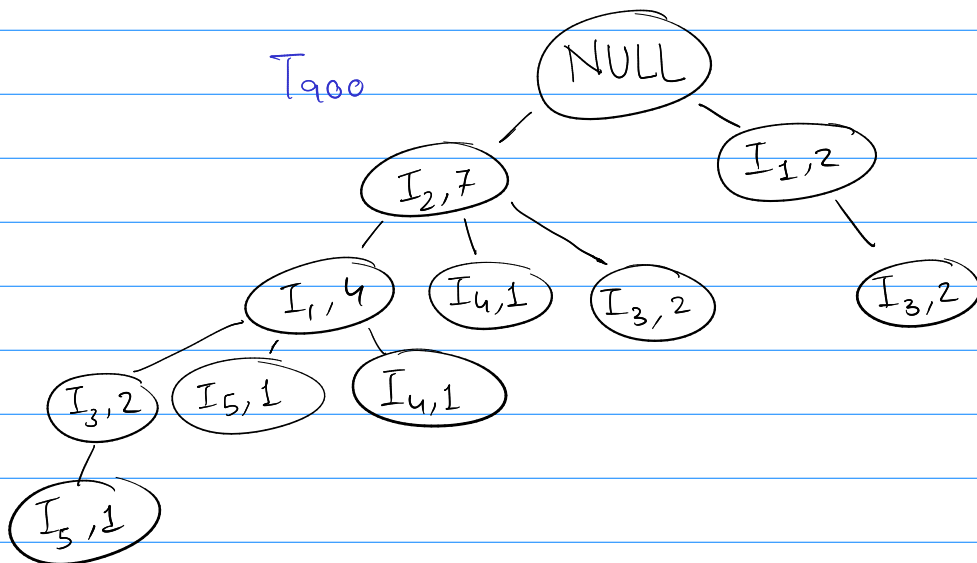
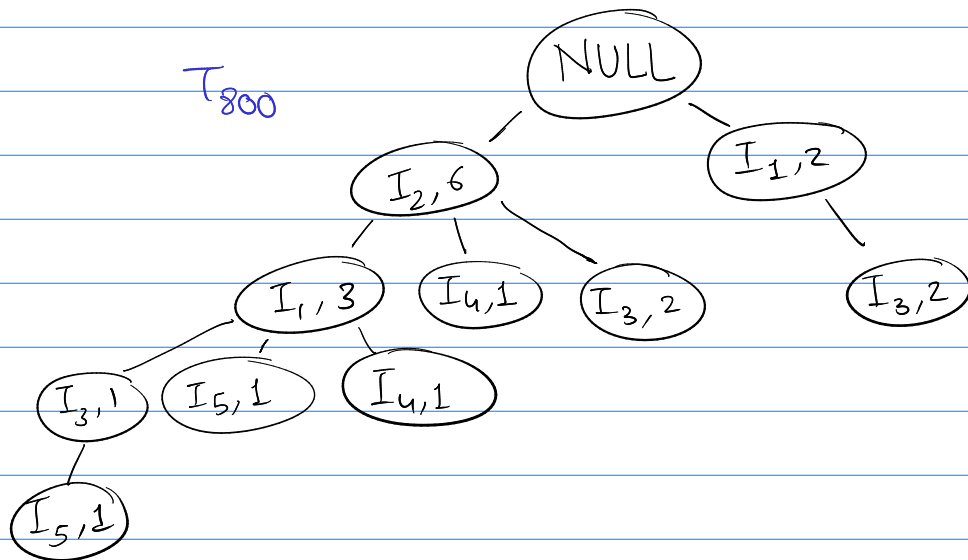
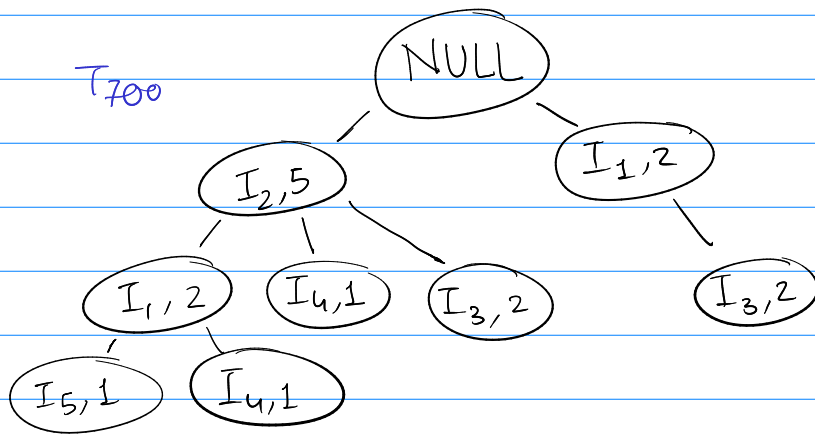
Q1)

TID	Item list	Ordered list
T100	I_1, I_2, I_5	I_2, I_1, I_5
T200	I_2, I_4	I_2, I_4
T300	I_2, I_3	I_2, I_3
T400	I_1, I_2, I_4	I_2, I_1, I_4
T500	I_1, I_3	I_1, I_3
T600	I_2, I_3	I_2, I_3
T700	I_1, I_3	I_1, I_3
T800	I_1, I_2, I_3, I_5	I_2, I_1, I_3, I_5
T900	I_1, I_2, I_3	I_2, I_1, I_3

Itemset	Sup. Count	Sorting based on Sup. Count	Itemset	Sup. Count
$\{I_1\}$	6		$\{I_2\}$	7
$\{I_2\}$	7		$\{I_1\}$	6
$\{I_3\}$	6		$\{I_3\}$	6
$\{I_4\}$	2		$\{I_4\}$	2
$\{I_5\}$	2		$\{I_5\}$	2







Item	Conditional Pattern Base	Conditional FP tree	FP Generated
I ₅	$\{\{I_2, I_1:1\}, \{I_2, I_3:1\}\}$	$\langle I_2:2, I_1:2 \rangle$	$\{I_2, I_5:2\} \{I_1, I_5:2\} \{I_2, I_1, I_5:2\}$
I ₄	$\{\{I_2, I_1:1\}, \{I_2:1\}\}$	$\langle I_2:2 \rangle$	$\{I_2, I_4:2\}$
I ₃	$\{\{I_2, I_1:2\}, \{I_2:2\}, \{I_1:2\}\}$	$\langle I_2:4, I_1:2 \rangle \langle I_1:2 \rangle$	$\{I_2, I_3:4\} \{I_1, I_3:4\} \{I_2, I_1, I_3:2\}$
I ₁	$\{\{I_2:4\}\}$	$\langle I_2:4 \rangle$	$\{I_2, I_1:4\}$

Q2)

min_support = 30%

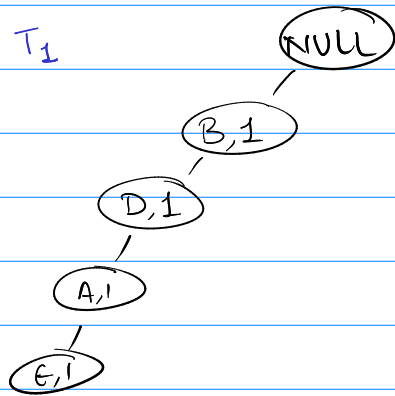
TID's = 8

$$\therefore \text{min support count} = \frac{30}{100} * 8 = 2.4 \approx \underline{\underline{2}}$$

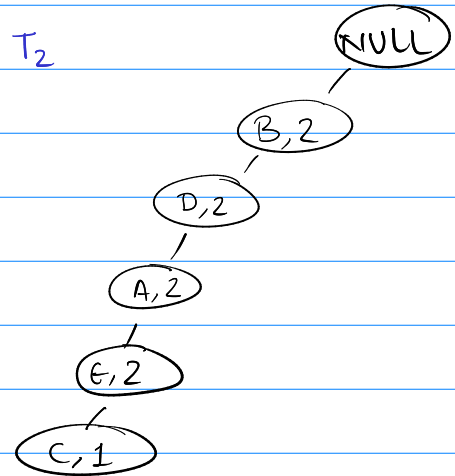
Itemset	Sup. Count	Sorting based on Sup. Count	Itemset	Sup. Count
{A}	5		{B}	6
{B}	6		{D}	6
{C}	3		{A}	5
{D}	6		{E}	4
{E}	4		{C}	3

TID	Item list	Ordered list
T1	E, A, D, B	B, D, A, E
T2	D, A, C, E, B	B, D, A, E, C
T3	C, A, B, E	B, A, E, C
T4	B, A, D	B, D, A
T5	D	D
T6	D, B	B, D
T7	A, D, E	D, A, E
T8	B, C	B, C

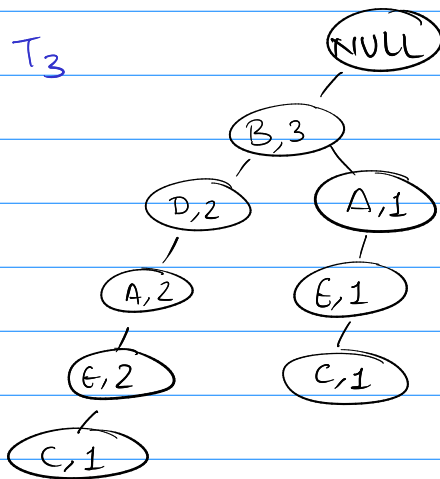
T_1



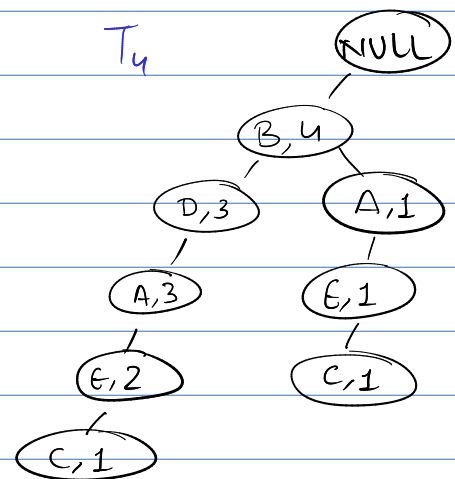
T_2



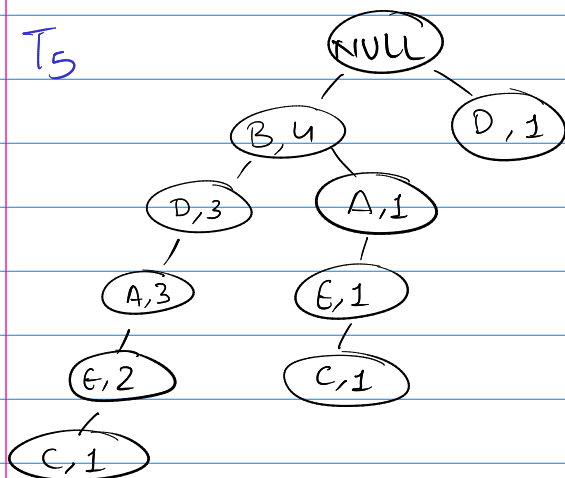
T_3



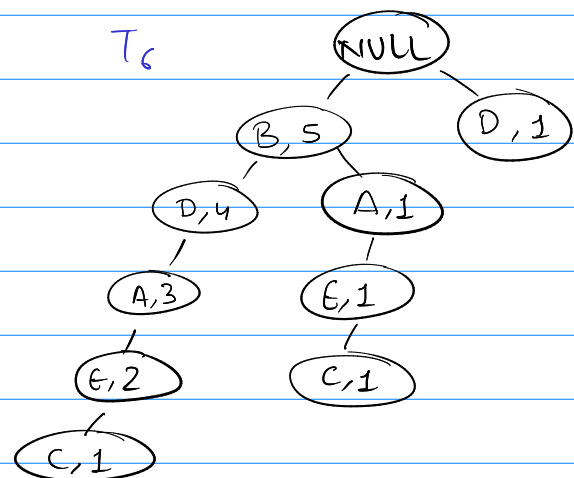
T_4

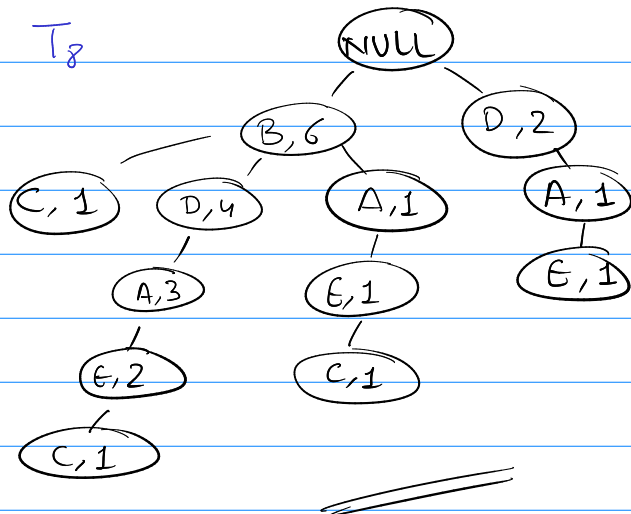
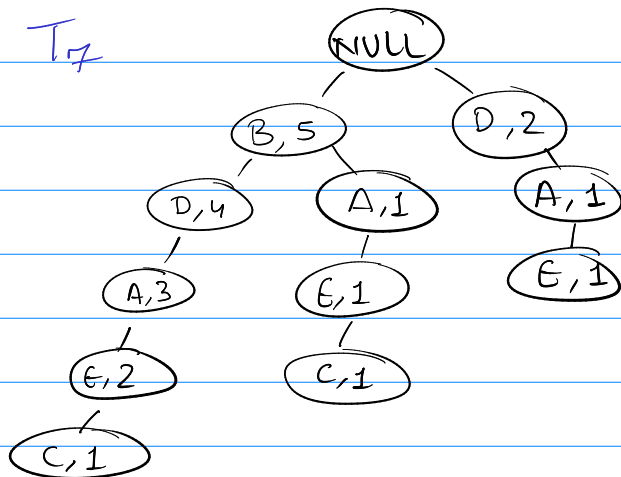


T_5



T_6





Item	Conditional Pattern Base	Conditional FP tree	FP Generated
C	$\{B:1\}\{BDAE:1\}\{BAE:1\}$	$\langle B:3, A:2, E:2 \rangle$	$\{BC:3\}\{AC:2\}\{EC:2\}\{BAC:2\}$ $\{BEC:2\}\{AEC:2\}\{BAEC:2\}$
E	$\{BDA:2\}\{BA:1\}\{DA:1\}$	$\langle B:3, A:3 \rangle$	$\{BE:3\}\{AE:3\}\{BAE:3\}$
A	$\{BD:3\}\{B:1\}\{D:1\}$	$\langle B:4, D:3 \rangle$	$\{BA:4\}\{DA:3\}\{BDA:3\}$
D	$\{B:4\}$	$\langle B:4 \rangle$	$\{BD:4\}$