CS 245 | HW #1 | Jason Chapman

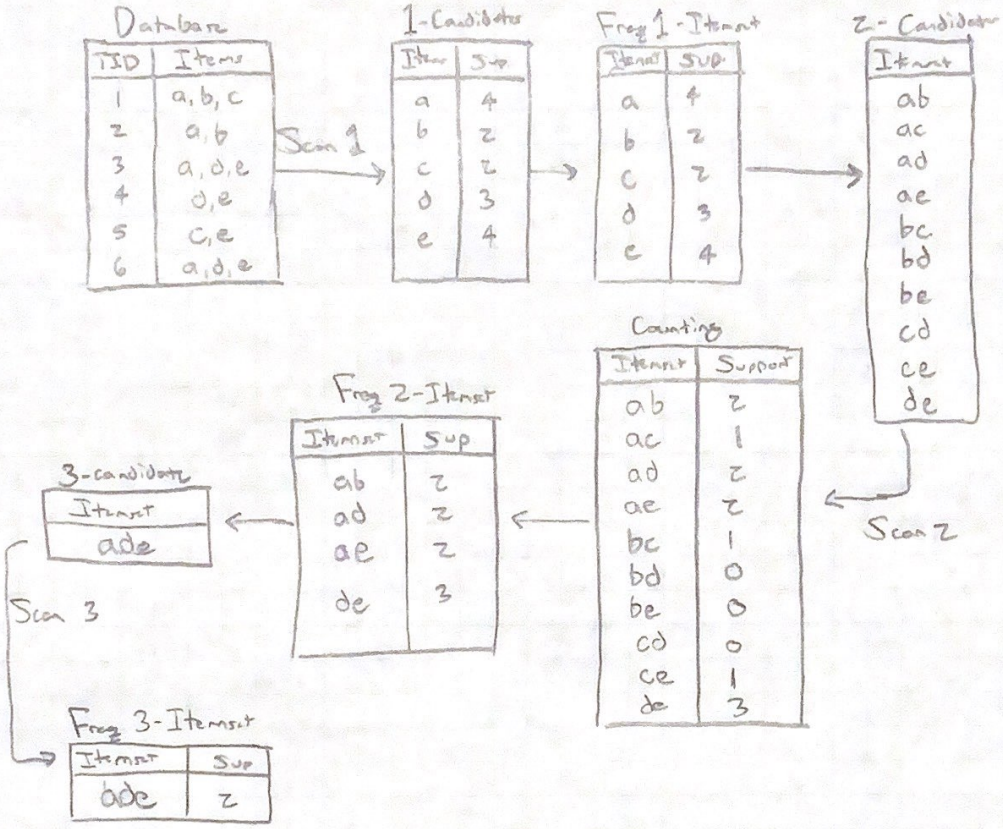
(1)

Table 1: Transactions

Transaction	Items
1	Hotdogs, Buns, Ketchup
2	Hotdogs, Buns
3	Hotdogs, Coke, Chips
4	Chips, Coke
5	Chips, Ketchup
6	Hotdogs, Coke, Chips

// Let a = hotdogs
b = buns
c = ketchup
d = coke
e = chips

a) Find all frequent patterns & min_support = 2



Frequent Patterns: { Hotdogs, Buns, Ketchup, Coke, Chips, (Hotdogs & Buns), (Hotdogs & Coke), (Hotdogs & Chips), (Coke & Chips), (Hotdogs & Coke & Chips) }

b.) { Hotdogs, Bus, Ketchup, Coke, Chips, (Hotdogs & Buns), (Hotdogs & Coke), (coke & Chips), (Hotdogs & Chips), (Hotdogs & Coke & Chips) }

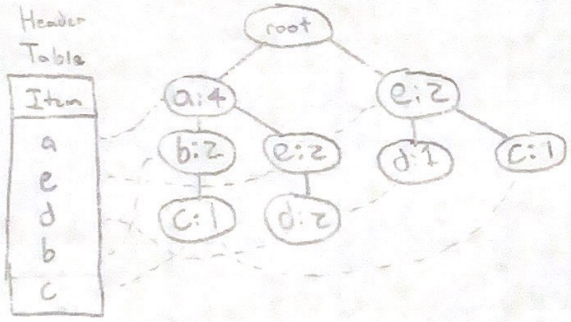
c.) 3 Scans

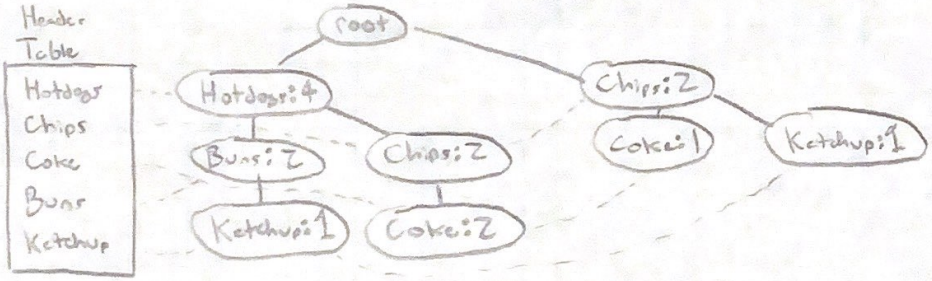
d.) The frequent pattern (Hotdogs & Buns) makes sense intuitively because consumers would buy those together because they are consumed together!

(2) a)

TID	Items	Ordered Freq Items
1	a, b, c	a, b, c
2	a, b	a, b
3	a, e, d	a, e, d
4	d, e	e, d
5	c, e	e, c
6	a, d, e	a, e, d

order: a, e, d, b, c





b.) Find freq patterns containing buns

- buns-projected database $TDB|_{buns}$
  - contains Hotdogs:2

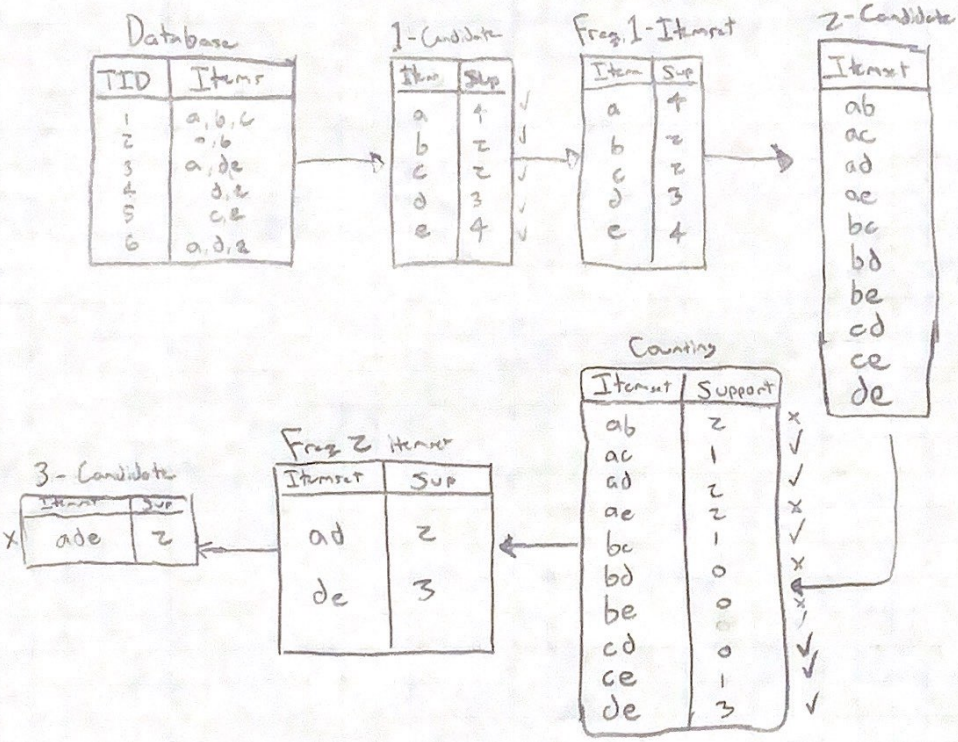
Frequent Patterns containing Buns: Buns:2, Hotdogs & Buns:2

③

Table 2: Price Table

Items	price
Hotdogs	5
Buns	6
Ketchup	1
Coke	3
Chips	4

a.) $Sum\{S.price\} \leq 8$



Frequent Patterns That Satisfy Constraint: {Hotdogs, Buns, Ketchup, Coke, Chips, (Hotdogs & Coke), (Coke & Chips)}