

Homework for this week (Sep 23-29)

Due midnight Sept 29

1. Using Excel to manually complete the association estimate using dataset in “simple associate data.xlsx”

Association

Orders

	a	b	c	d	e	f	g	h	i
o1	2		1	1					
o2		1	3	2	1		4	2	1
o3		2							
o4	1		1	1			1		
o5	2								
o6		2			1		3		

- a,b,c,...,i are goods
- o1,o1,.. Are orders

$$\text{Confidence}(\{X\} \rightarrow \{Y\}) = \frac{\text{Transactions containing both } X \text{ and } Y}{\text{Transactions containing } X}$$

Counts of all possible combinations

	a	b	c	d	e	f	g	h	i	total
a			2	2						4
b			1	1	2		2	1	1	8
c	2	1		3	1		2	1	1	11
d	2	1	3				1		1	8
e		2	1				1		1	5
f										0
g		2	2	1	1			1	1	8
h		1	1	1	1		1		1	6
i		1	1	1	1		1	1		6

Confidence

	a	b	c	d	e	f	g	h	i
a			50%	50%					
b			13%	13%	25%		25%	13%	13%
c	18%	9%		27%	9%		18%	9%	9%
d	25%	13%	38%				13%		13%
e		40%	20%				20%		20%
f									
g		25%	25%	13%	13%			13%	13%
h		17%	17%	17%	17%		17%		17%
i		17%	17%	17%	17%		17%	17%	

2. Open the “Sample – Superstore.xlsx” to understand how supermarket sales record may look like. Use the language of your preference to write a program to calculate the confidence($\{X\} \rightarrow \{Y\}$).

Hint: the data is in a ‘long’ form, you need to find the boundary of each receipts, then loop through to get all pairs.