

# Problem Set 07

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## 1. Shopping (10p)

We have the following observations:

Transaction	Items
S01	2 Mango, 4 Apple, Raspberry, Ice-cream, 2 Onion
S02	7 Tomato, 3 Onion, 2 Apple, 5 Donut
S03	2 Donut, 5 Apple, Ice-cream, Sugar, 3 Yoghurt
S04	Raspberry, 2 Apple, 5 Donut, Ice-cream, 2 Onion
S05	3 Mango, 4 Apple, Yoghurt, 2 Onion, Raspberry
S06	Raspberry, 2 Onion, 7 Apple, 7 Donut, Sugar

Build the co-occurrence matrix.

Calculate support, confidence, completeness, lift, and leverage for the following rules.

- Apple → Donut
- Apple → Onion
- Sugar → Yoghurt
- Donut → Onion
- Donut → Raspberry
- Onion → Raspberry

Explain these measures (why they are useful, what ranges of numbers they can return, what the values mean).

Use the Apriori algorithm to find frequent item sets. We are only interested in item sets having a support value of at least 50%.

### Deadline:

November 21, 2016 at 8:00 AM