**Market Basket Analysis**

**Scenario**

A new startup company has been selling their products online with several million sales transactions. They have hired you as a data scientist to design a prototype of a market basket analytics system. The system will look at the products the customer has placed in their online shopping cart and recommend another product.

The company has provided us with a training set of 1 million sales of 2 or more products.

For simplicity for this first prototype, they have:

* Limited their training set to a maximum of 4 products per sales transaction
* Limited individual sales to no more than 1 of each product
* Temporal reasoning should not be considered (time and date of the sale should not be considered)

The company only has 10 products. The products are named P01, P02, …, P10. Some products may be new without any sales yet.

The company has provided us with a test set of 100 online shopping carts, and has asked us to recommend 1 additional product for each of the 100 online shopping carts.

When considering the training set, previous purchases of 4 products should be considered most influential, followed by 3 and then 2.