Discover Associations Between Products

* Word Format and 1-3 page report.
* The insightful rules that you've discovered.
* Any visualizations that you've performed.
* Summary of your findings.
* Any observations you've made throughout your analysis.
* Your answers to the questions within Danielle's email.
* Any future recommendations if Blackwell was to acquire Electronidex.
* Written for a non-data audience and created for business purposes.

Main goal:

Make a customer profile and a product profile that will tell us if Blackwell should acquire Electroindex.

Conduct a **market basket analysis by** identify purchasing patterns that will provide insight into Electronidex's clientele.

Data:

**ElectronidexTransactions.csv**, is a record of one month’s (30 days’ worth) of 9835 online transactions and which items were purchased out of the 125 products Electronidex sells.

**ElectronidexItems.pdf**, is a list of the 125 products that Electronidex sells broken down into 17 product types.

Data analytics:

There may be custumer purchases and bussines purchases, so we split the data between single customers and bussines.

Transform the products into a dataframe.

TransactionNº/Item1/Item2/Item3....

**Support**(Item)=Nºtransactions of the item/Nºof total transactions [0-1]

**Confidence**(X->Y)=Support(x U y)/Support(x) the likely of buying Y when X has been bought

**Lift**(X->Y)=Support(x U y)/(Support(x) \*Support(y)) ) the likely of buying Y when X has been bought considering the popularity of Y.

* >1: Likely to Y be bought with X
* <1: Unlikely to Y be bought with X

**Conviction**(X->Y): 1-supp(Y)/1-conf(X->Y)

ALGORITHM

Support Threeshold: X% SET THE PERCENTAGE

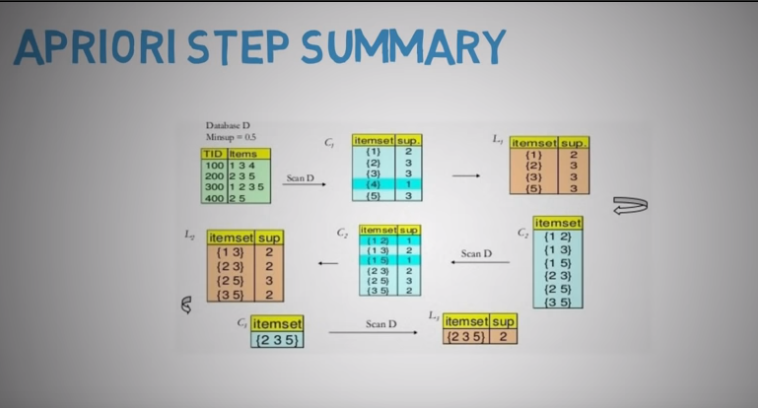
1 Set a table of items and frequency of transactions

2 set the threshold: delete the items that appear less than X%

3 Make combinations without order (ex: onions & burger=4, onions &potatoes=3....)

4 delete the ones below threshold

5 same as step 3 but with 3 items and delete the ones belwo threshold



**TECHNICAL**