## Section 4: Market basket analysis

A market basket analysis is defined as a customer’s overall buying pattern of different sets of products. Essentially, the marketing team wants to understand customer purchasing patterns. Their proposal is if they promote the products in their next campaign, which are bought a couple of times together, then this will increase the revenue for the company.  
  
Q1. Please identify the dates when the same customer has purchased some product from the company outlets.

**SELECT** C1.Cust\_Id, C1.PurchaseDate **AS** PurchaseDate1, C2.PurchaseDate **AS** PurchaseDate **FROM** CustomerTransactionData **AS** C1 **INNER** **JOIN** CustomerTransactionData **AS** C2 **ON** C1.Cust\_Id = C2.Cust\_Id **WHERE** C1.Trans\_Id != C2.Trans\_Id **AND** C1.OrderType = C2.OrderType **AND** C1.item\_id != C2.item\_id;

Out of the first query where you have captured a repeated set of customers, please identify the same combination of products coming at least thrice sorted in descending order of their appearance.

**SELECT** CONCAT\_WS(",", C1.item\_id, C2.item\_id) **AS** Item\_Combination,

**COUNT**(\*) **AS** TotalTransaction

**FROM** CustomerTransactionData **AS** C1

**INNER** **JOIN** CustomerTransactionData **AS** C2

**ON** C1.Cust\_Id = C2.Cust\_Id

**WHERE** C1.Trans\_Id != C2.Trans\_Id

**AND** C1.OrderType = C2.OrderType

**AND** C1.item\_id != C2.item\_id

**GROUP** **BY** CONCAT\_WS(",", C1.item\_id, C2.item\_id)

**HAVING** **COUNT**(\*) >= **3**

**ORDER** **BY** **COUNT**(\*) **DESC**;

Out of the above combinations that are coming thrice for repeated sets of customers, please check which of the combinations are popular in the household sector.

**SELECT** C1.OrderType, CONCAT\_WS(",", C1.item\_id, C2.item\_id) **AS** Item\_Combination,

**COUNT**(\*) **AS** TotalTransaction

**FROM** CustomerTransactionData **AS** C1

**INNER** **JOIN** CustomerTransactionData **AS** C2

**ON** C1.Cust\_Id = C2.Cust\_Id

**WHERE** C1.Trans\_Id != C2.Trans\_Id

**AND** C1.OrderType = C2.OrderType

**AND** C1.item\_id != C2.item\_id

**GROUP** **BY** C1.OrderType, CONCAT\_WS(",", C1.item\_id, C2.item\_id)

**HAVING** **COUNT**(\*) >= **3**

**ORDER** **BY** **COUNT**(\*) **DESC**;