Hands On Exercise

RFM model Classic but efficient

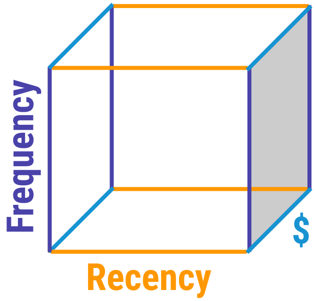
CRM extract example

Order date	Customer ID	Order Value
01-02-15	177237	$140
02-02-15	177323	$30
01-03-15	177237	$35

Recency and Frequency of purchases at user level

Monetary Value

Customers scored with a LTV (RFM) model



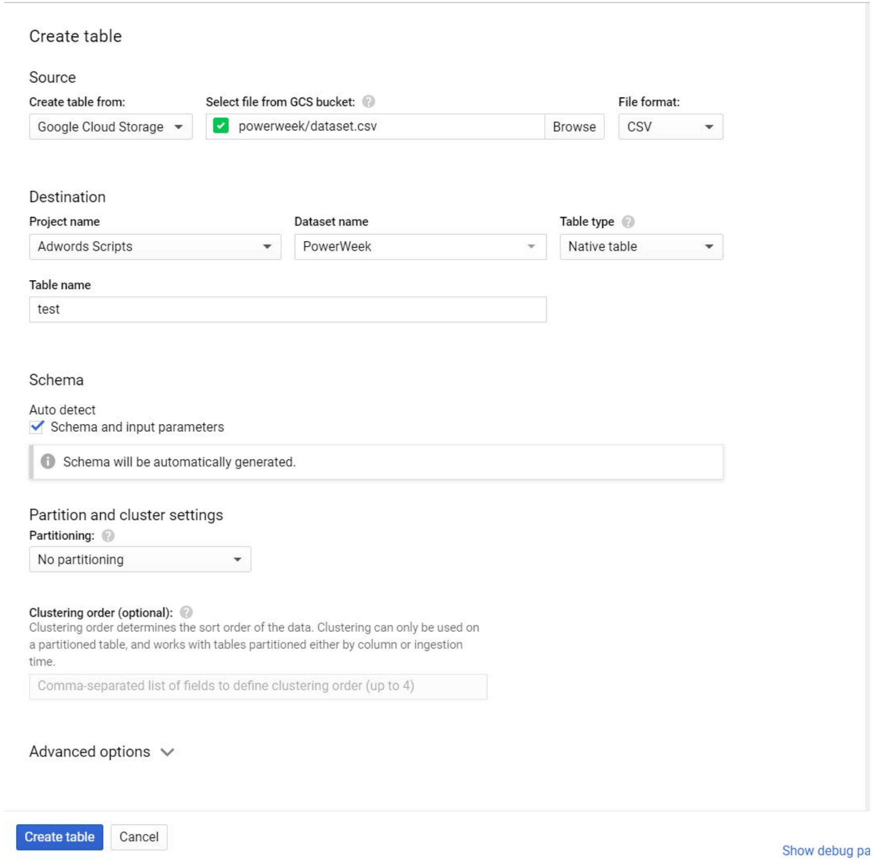
Instructions

1. Upload CSV File into BigQuery about customer orders

2. Calculate in SQL Frequency, Recency, Monetization, average basket, average items, average time between purchases (Excluding returns)

3. Create a clustering using BigQuery Kmeans and decide strategy per cluster

Hands on exercise - Upload CSV to BQ



Create table

Source

Create table from: Google Cloud Storage

Select file from GCS bucket: ✓ powerweek/dataset.csv

File format: CSV

Destination

Project name: Adwords Scripts

Dataset name: PowerWeek

Table type: Native table

Table name: test

Schema

Auto detect

☑ Schema and input parameters

Schema will be automatically generated.

Partition and cluster settings

Partitioning: No partitioning

Clustering order (optional):

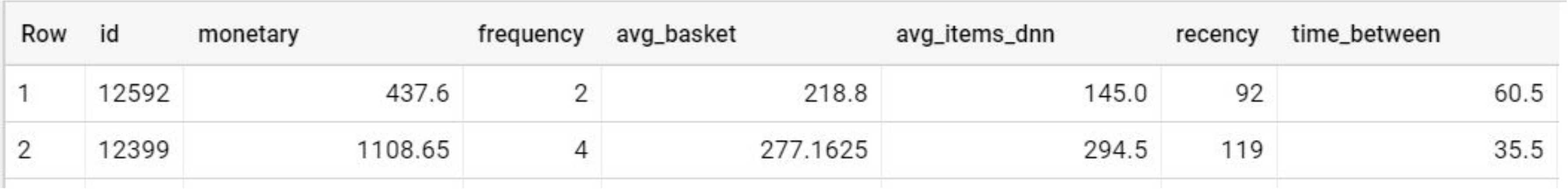
Clustering order determines the sort order of the data. Clustering can only be used on a partitioned table, and works with tables partitioned either by column or ingestion time.

Comma-separated list of fields to define clustering order (up to 4)

Advanced options

Hands on exercise - Transform Data to obtain RFM

```
SELECT

    cast(customer_id as string ) as id,
    sum(order_value) as monetary, count(distinct if(order_value >0,order_date,null)) as frequency,
    sum( order_value)/count(distinct if(order_value >0,order_date,null)) as avg_basket,
    sum(if( order_qty_articles>0,order_qty_articles,null) )/count(distinct if(order_value >0,order_date,null))  as avg_items_dnn,
    date_diff(DATE(2011,12,09),max(if(order_value>0,order_date,null)), DAY) as recency,
    date_diff(max(if(order_value>0,order_date,null)),min(if(order_value>0,order_date,null)),DAY) / count(distinct if(order_value
>0,order_date,null)) as time_between

from `KSCHOOL.orders_dataset`


group by 1
```

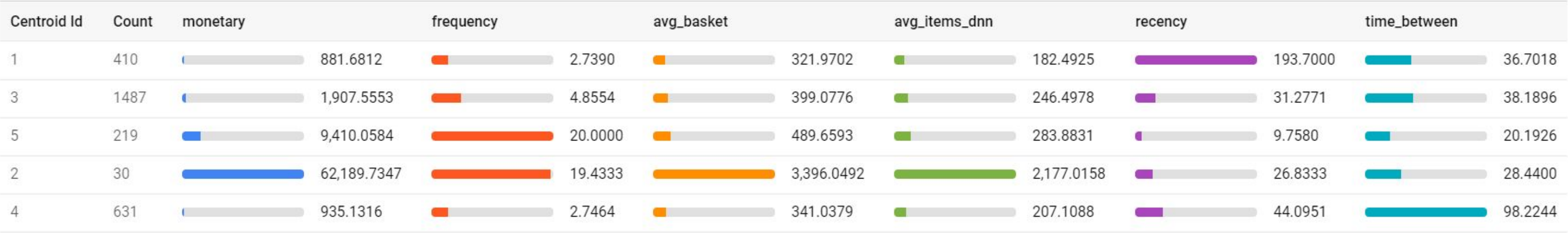


Row	id	monetary	frequency	avg_basket	avg_items_dnn	recency	time_between
1	12592	437.6	2	218.8	145.0	92	60.5
2	12399	1108.65	4	277.1625	294.5	119	35.5

Hands on exercise - Kmeans Clustering

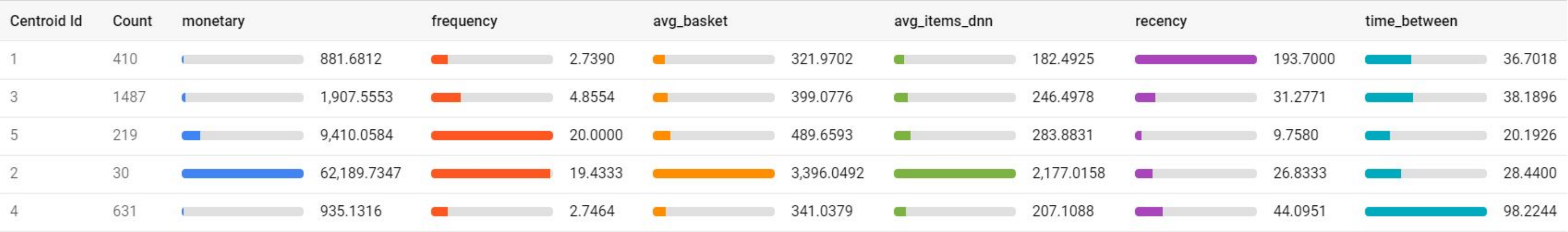
```
CREATE MODEL PowerWeek.kmeans_model_5clusters OPTIONS(
  model_type='kmeans', num_clusters=5, distance_type='euclidean') AS

SELECT

   cast(customer_id as string ) as id,
   sum(order_value) as monetary, count(distinct if(order_value >0,order_date,null)) as frequency,
   sum( order_value)/count(distinct if(order_value >0,order_date,null)) as avg_basket,
   sum(if( order_qty_articles>0,order_qty_articles,null) )/count(distinct if(order_value >0,order_date,null))  as avg_items_dnn,
   date_diff(DATE(2011,12,09),max(if(order_value>0,order_date,null)), DAY) as recency,
   date_diff(max(if(order_value>0,order_date,null)),min(if(order_value>0,order_date,null)),DAY) / count(distinct if(order_value
>0,order_date,null)) as time_between

from `KSCHOOL.orders_dataset`


group by 1
```

Hands on exercise - Define Strategy Per Cluster



Centroid Id	Count	monetary	frequency	avg_basket	avg_items_dnn	recency	time_between
1	410	881.6812	2.7390	321.9702	182.4925	193.7000	36.7018
3	1487	1,907.5553	4.8554	399.0776	246.4978	31.2771	38.1896
5	219	9,410.0584	20.0000	489.6593	283.8831	9.7580	20.1926
2	30	62,189.7347	19.4333	3,396.0492	2,177.0158	26.8333	28.4400
4	631	935.1316	2.7464	341.0379	207.1088	44.0951	98.2244

Hands on exercise - Define Strategy Per Cluster



Centroid Id	Count	monetary	frequency	avg_basket	avg_items_dnn	recency	time_between
1	410	881.6812	2.7390	321.9702	182.4925	193.7000	36.7018
3	1487	1,907.5553	4.8554	399.0776	246.4978	31.2771	38.1896
5	219	9,410.0584	20.0000	489.6593	283.8831	9.7580	20.1926
2	30	62,189.7347	19.4333	3,396.0492	2,177.0158	26.8333	28.4400
4	631	935.1316	2.7464	341.0379	207.1088	44.0951	98.2244

2 **Top Customers (B2B) - Ad hoc offers and proactive approach**

5 **Top B2C Customers - Retain and Similar Audiences**

3 **New Potential Customers - Boost through coupons**

4 **Occasional Customers - Increase frecuency**

1 **Old Customers - Get them back**

Hands on exercise - Create Buckets to Activate GA

```
SELECT CENTROID_ID,id


FROM ML.PREDICT(MODEL `PowerWeek.kmeans_model_5clusters`, (select
 cast(customer_id as string ) as id,
  sum(order_value) as monetary, count(distinct if(order_value >0,order_date,null)) as frequency,
  sum( order_value)/count(distinct if(order_value >0,order_date,null)) as avg_basket,
  sum(if( order_qty_articles>0,order_qty_articles,null) )/count(distinct if(order_value >0,order_date,null))  as avg_items_dnn,
  date_diff(DATE(2011,12,09),max(if(order_value>0,order_date,null)), DAY) as recency,
  date_diff(max(if(order_value>0,order_date,null)),min(if(order_value>0,order_date,null)),DAY) / count(distinct if(order_value >0,order_date,null)) as time_between



 FROM `KSCHOOL.orders_dataset`
 group by 1
 ))
```