

{ Customer Segmentation  
using RFM  
- hands on SQL -      dataset  
                         (BigQuery) ←

= class starts @ 9:03 PM =

Search the menus (Option+/)

Fit | Image options | Replace image

1 1 2 3 4 5 6 7

RFM

UK  
(DMA)

Customer Segment	Activity	Actionable Tip
Champions	Bought recently, buy often and spend the most!	Reward them. Can be early adopters for new products. Will promote your brand.
Loyal Customers	Spend good money with us often. Responsive to promotions.	Upsell higher value products. Ask for reviews. Engage them.
Potential Loyalist	Recent customers, but spent a good amount and bought more than once.	Offer membership / loyalty program, recommend other products.
Recent Customers	Bought most recently, but not often.	Provide on-boarding support, give them early success, start building relationship.
Promising	Recent shoppers, but haven't spent much.	Create brand awareness, offer free trials
Customers Needing Attention	Above average recency, frequency and monetary values. May not have bought very recently though.	Make limited time offers, Recommend based on past purchases. Reactivate them.
About To Sleep	Below average recency, frequency and monetary values. Will lose them if not reactivated.	Share valuable resources, recommend popular products / renewals at discount, reconnect with them.
At Risk	Spent big money and purchased often. But long time ago. Need to bring them back!	Send personalized emails to reconnect, offer renewals, provide helpful resources.
Can't Lose Them		

+    :    ☺    ↗

docs.google.com/spreadsheets/d/1DnYhSGAfRNFsSfR4S1y-o7ddasRmcKICD-Fjlvem1Lc/edit#gid=676991245

sales

File Edit View Insert Format Data Tools Extensions Help

1:1 *posted*

1	A	B	C	D	E	F	G	H	I	J
1	InvoiceNo	StockCode	Description	Quantity	InvoiceDate	UnitPrice	CustomerID	Country		
2	536365	85123A	WHITE HANGING HEART T-LIGHT HOLDER	6	2010-12-01 8:26:00	2.55	17850	United Kingdom		
3	536365	71053	WHITE METAL LANTERN	6	2010-12-01 8:26:00	3.39	17850	United Kingdom		
4	536365	84406B	CREAM CUPID HEARTS COAT HANGER	8	2010-12-01 8:26:00	2.75	17850	United Kingdom		
5	536365	84029G	KNITTED UNION FLAG HOT WATER BOTTLE	6	2010-12-01 8:26:00	3.39	17850	United Kingdom		
6	536365	84029E	RED WOOLLY HOTTIE WHITE HEART.	6	2010-12-01 8:26:00	3.39	17850	United Kingdom		
7	536365	22752	SET 7 BABUSHKA NESTING BOXES	2	2010-12-01 8:26:00	7.65	17850	United Kingdom		
8	536365	21730	GLASS STAR FROSTED T-LIGHT HOLDER	6	2010-12-01 8:26:00	4.25	17850	United Kingdom		
9	536366	22633	HAND WARMER UNION JACK	6	2010-12-01 8:28:00	1.85	17850	United Kingdom		
10	536366	22632	HAND WARMER RED POLKA DOT	6	2010-12-01 8:28:00	1.85	17850	United Kingdom		
11	536367	84879	ASSORTED COLOUR BIRD ORNAMENT	32	2010-12-01 8:34:00	1.69	13047	United Kingdom		
12	536367	22745	POPPY'S PLAYHOUSE BEDROOM	6	2010-12-01 8:34:00	2.1	13047	United Kingdom		
13	536367	22748	POPPY'S PLAYHOUSE KITCHEN	6	2010-12-01 8:34:00	2.1	13047	United Kingdom		
14	536367	22749	FELTCRAFT PRINCESS CHARLOTTE DOLL	8	2010-12-01 8:34:00	3.75	13047	United Kingdom		
15	536367	22310	IVORY KNITTED MUG COSY	6	2010-12-01 8:34:00	1.65	13047	United Kingdom		
16	536367	84969	BOX OF 6 ASSORTED COLOUR TEASPOONS	6	2010-12-01 8:34:00	4.25	13047	United Kingdom		
17	536367	22623	BOX OF VINTAGE JIGSAW BLOCKS	3	2010-12-01 8:34:00	4.95	13047	United Kingdom		
18	536367	21754	HOME BUILDING BLOCK WORD	3	2010-12-01 8:34:00	5.95	13047	United Kingdom		
19	536367	21755	LOVE BUILDING BLOCK WORD	3	2010-12-01 8:34:00	5.95	13047	United Kingdom		
20	536367	21777	RECIPE BOX WITH METAL HEART	4	2010-12-01 8:34:00	7.95	13047	United Kingdom		
21	536367	48187	DOORMAT NEW ENGLAND	4	2010-12-01 8:34:00	7.95	13047	United Kingdom		
22	536368	22960	JAM MAKING SET WITH JARS	6	2010-12-01 8:34:00	4.25	13047	United Kingdom		
23	536368	22913	RED COAT RACK PARIS FASHION	3	2010-12-01 8:34:00	4.95	13047	United Kingdom		
24	536368	22912	YELLOW COAT RACK PARIS FASHION	3	2010-12-01 8:34:00	4.95	13047	United Kingdom		
25	536368	22914	BLUE COAT RACK PARIS FASHION	3	2010-12-01 8:34:00	4.95	13047	United Kingdom		
26	536369	21756	BATH BUILDING BLOCK WORD	3	2010-12-01 8:35:00	5.95	13047	United Kingdom		
27	536370	22728	ALARM CLOCK BAKELIKE PINK	24	2010-12-01 8:45:00	3.75	12583	France		

Temp Pics - Google Docs | sales.csv - Google Drive | sales - Google Sheets | How to set up BigQuery.pdf | Approximate aggregate functions | Aggregate functions | BigQuery | Query results - BigQuery - cus | + | docs.google.com/spreadsheets/d/1DnYhSGAfRNFsSfR4S1y-o7ddasRmcKICD-Fjlvem1Lc/edit#gid=676991245

File Edit View Insert Format Data Tools Extensions Help

Share

1:1 InvoiceNo

	A	B	C	D	E	F	G	H	I	J
1	InvoiceNo	StockCode	Description	Quantity	InvoiceDate	UnitPrice	CustomerID	Country		
2	536365	85123A	WHITE HANGING HEART T-LIGHT HOLDER	6	2010-12-01 8:26:00	2.55	17850	United Kingdom	4	
3	536365	71053	WHITE METAL LANTERN	6	2010-12-01 8:26:00	3.39	17850	United Kingdom		
4	536365	84406B	CREAM CUPID HEARTS COAT HANGER	8	2010-12-01 8:26:00	2.75	17850	United Kingdom		
5	536365	84029G	KNITTED UNION FLAG HOT WATER BOTTLE	6	2010-12-01 8:26:00	3.39	17850	United Kingdom		
6	536365	84029E	RED WOOLLY HOTTIE WHITE HEART.	6	2010-12-01 8:26:00	3.39	17850	United Kingdom		
7	536365	22752	SET 7 BABUSHKA NESTING BOXES	2	2010-12-01 8:26:00	7.65	17850	United Kingdom		
8	536365	21730	GLASS STAR FROSTED T-LIGHT HOLDER	6	2010-12-01 8:26:00	4.25	17850	United Kingdom		
9	536366	22633	HAND WARMER UNION JACK	6	2010-12-01 8:28:00	1.85	17850	United Kingdom		
10	536366	22632	HAND WARMER RED POLKA DOT	6	2010-12-01 8:28:00	1.85	17850	United Kingdom		
11	536367	84879	ASSORTED COLOUR BIRD ORNAMENT	32	2010-12-01 8:34:00	1.69	13047	United Kingdom		
12	536367	22745	POPPY'S PLAYHOUSE BEDROOM	6	2010-12-01 8:34:00	2.1	13047	United Kingdom		
13	536367	22748	POPPY'S PLAYHOUSE KITCHEN	6	2010-12-01 8:34:00	2.1	13047	United Kingdom		
14	536367	22749	FELTCRAFT PRINCESS CHARLOTTE DOLL	8	2010-12-01 8:34:00	3.75	13047	United Kingdom		
15	536367	22310	IVORY KNITTED MUG COSY	6	2010-12-01 8:34:00	1.65	13047	United Kingdom		
16	536367	84969	BOX OF 6 ASSORTED COLOUR TEASPOONS	6	2010-12-01 8:34:00	4.25	13047	United Kingdom		
17	536367	22623	BOX OF VINTAGE JIGSAW BLOCKS	3	2010-12-01 8:34:00	4.95	13047	United Kingdom		
18	536367	21754	HOME BUILDING BLOCK WORD	3	2010-12-01 8:34:00	5.95	13047	United Kingdom		
19	536367	21755	LOVE BUILDING BLOCK WORD	3	2010-12-01 8:34:00	5.95	13047	United Kingdom		
20	536367	21777	RECIPE BOX WITH METAL HEART	4	2010-12-01 8:34:00	7.95	13047	United Kingdom		
21	536367	48187	DOORMAT NEW ENGLAND	4	2010-12-01 8:34:00	7.95	13047	United Kingdom		
22	536368	22960	JAM MAKING SET WITH JARS	6	2010-12-01 8:34:00	4.25	13047	United Kingdom		
23	536368	22913	RED COAT RACK PARIS FASHION	3	2010-12-01 8:34:00	4.95	13047	United Kingdom		
24	536368	22912	YELLOW COAT RACK PARIS FASHION	3	2010-12-01 8:34:00	4.95	13047	United Kingdom		
25	536368	22914	BLUE COAT RACK PARIS FASHION	3	2010-12-01 8:34:00	4.95	13047	United Kingdom		
26	536369	21756	BATH BUILDING BLOCK WORD	3	2010-12-01 8:35:00	5.95	13047	United Kingdom		
27	536370	22728	ALARM CLOCK BAKELIKE PINK	24	2010-12-01 8:45:00	3.75	12583	France		

Temp Pics - Google Docs | sales.csv - Google Drive | sales - Google Sheets | How to set up BigQuery.pdf | Approximate aggregate functions | Aggregate functions | Query results - BigQuery - cus

console.cloud.google.com/bigquery?project=concise-flame-386113&supportedpurview=project&ws=!1m4!1m4!4m3!1sconcise-flame-386113!2sretail!3ssales!1m3!8m2!1s905284958743!2sd74f896b75464c2fa8670... | Update

Start your Free Trial with \$300 in credit. Don't worry—you won't be charged if you run out of credits. [Learn more](#)

DISMISS ACTIVATE

Google Cloud customer-segmentation-373712 Search (/) for resources, docs, products, and more Search

BigQuery SANDBOX Set up billing to upgrade to the full BigQuery experience. [Learn more](#)

Analysis

SQL workspace

Data transfers

Scheduled queries

Analytics Hub

Dataform

Partner Center

Migration

Assessment

SQL translation

Administration

Monitoring

Capacity management

Release Notes

Untitled 2

RUN SAVE SHARE SCHEDULE MORE

select \* from `concise-flame-386113.retail.sales`

OBJ: Cust → RFM → Loy RPN  
1-5 1-5 1-5

Query completed.

SAVE RESULTS EXPLORE DATA

RESULTS

Row	InvoiceNo	StockCode	Description	Quantity	InvoiceDate	UnitPrice	CustomerID	Country
1	571035	21238	RED RETROSPOT CUP	8	2011-10-13 12:50:00 UTC	0.85	12446.0	RSA
2	571035	21243	PINK POLKADOT PLATE	8	2011-10-13 12:50:00 UTC	1.69	12446.0	RSA
3	571035	23240	SET OF 4 KNICK KNACK TINS ...	6	2011-10-13 12:50:00 UTC	4.15	12446.0	RSA
4	571035	23209	LUNCH BAG VINTAGE DOILY	10	2011-10-13 12:50:00 UTC	1.65	12446.0	RSA
5	571035	23201	JUMBO BAG ALPHABET	10	2011-10-13 12:50:00 UTC	2.08	12446.0	RSA
6	571035	23205	CHARLOTTE BAG VINTAGE AL...	10	2011-10-13 12:50:00 UTC	0.85	12446.0	RSA
7	571035	21936	RED RETROSPOT PICNIC BAG	5	2011-10-13 12:50:00 UTC	2.95	12446.0	RSA
8	571035	22620	4 TRADITIONAL SPINNING TOPS	12	2011-10-13 12:50:00 UTC	1.45	12446.0	RSA
9	571035	22619	SET OF 6 SOLDIER SKITTLES	4	2011-10-13 12:50:00 UTC	3.75	12446.0	RSA
10	571035	21889	WOODEN BOX OF DOMINOES	12	2011-10-13 12:50:00 UTC	1.25	12446.0	RSA
11	571035	22139	RETROSPOT TFA SFT CERAMI	3	2011-10-13 12:50:00 UTC	4.95	12446.0	RSA

Results per page: 50 1 – 50 of 375187

PERSONAL H REFRESH

Start your Free Trial with \$300 in credit. Don't worry—you won't be charged if you run out of credits. [Learn more](#)

[DISMISS](#)[ACTIVATE](#)

Google Cloud customer-segmentation-373712 Search (/) for resources, docs, products, and more [Search](#)

BigQuery SANDBOX Set up billing to upgrade to the full BigQuery experience. [Learn more](#)

[DISMISS](#)[UPGRADE](#)

Analysis

SQL workspace

Data transfers

Scheduled queries

Analytics Hub

Dataform

Partner Center

Migration

Assessment

SQL translation

Administration

Monitoring

Capacity management

Release Notes

Sales

Untitled 2

RUN SAVE SHARE SCHEDULE MORE

select \* from `concise-flame-386113.retail.sales`

RFM

Query completed.

Press Alt+F1 for Accessibility Options

Query results

SAVE RESULTS EXPLORE DATA

JOB INFORMATION RESULTS JSON EXECUTION DETAILS EXECUTION GRAPH PREVIEW

Row	InvoiceNo	StockCode	Description	Quantity	InvoiceDate	UnitPrice	CustomerID	Country
1	571035	21238	RED RETROSPOT CUP	8	2011-10-13 12:50:00 UTC	0.85	12446.0	RSA
2	571035	21243	PINK POLKADOT PLATE	8	2011-10-13 12:50:00 UTC	1.69	12446.0	RSA
3	571035	23240	SET OF 4 KNICK KNACK TINS ...	6	2011-10-13 12:50:00 UTC	4.15	12446.0	RSA
4	571035	23209	LUNCH BAG VINTAGE DOILY	10	2011-10-13 12:50:00 UTC	1.65	12446.0	RSA
5	571035	23201	JUMBO BAG ALPHABET	10	2011-10-13 12:50:00 UTC	2.08	12446.0	RSA
6	571035	23205	CHARLOTTE BAG VINTAGE AL...	10	2011-10-13 12:50:00 UTC	0.85	12446.0	RSA
7	571035	21936	RED RETROSPOT PICNIC BAG	5	2011-10-13 12:50:00 UTC	2.95	12446.0	RSA
8	571035	22620	4 TRADITIONAL SPINNING TOPS	12	2011-10-13 12:50:00 UTC	1.45	12446.0	RSA
9	571035	22619	SET OF 6 SOLDIER SKITTLES	4	2011-10-13 12:50:00 UTC	3.75	12446.0	RSA
10	571035	21889	WOODEN BOX OF DOMINOES	12	2011-10-13 12:50:00 UTC	1.25	12446.0	RSA
11	571035	22139	RETROSPOT TFA SFT CERAMI	3	2011-10-13 12:50:00 UTC	4.95	12446.0	RSA

Results per page: 50 1 – 50 of 375187

PERSONAL H REFRESH

6 / 6

Start your Free Trial with \$300 in credit. Don't worry—you won't be charged if you run out of credits. [Learn more](#)

[DISMISS](#)[ACTIVATE](#)

Google Cloud customer-segmentation-373712 Search (/) for resources, docs, products, and more [Search](#)

BigQuery SANDBOX Set up billing to upgrade to the full BigQuery experience. [Learn more](#)

[DISMISS](#)[UPGRADE](#)

Analysis

SQL workspace

Data transfers

Scheduled queries

Analytics Hub

Dataform

Partner Center

Migration

Assessment

SQL translation

Administration

Monitoring

Capacity management

Release Notes

sales 1 2 3 4 5 6 7 8 \*Untitled 2 +

1 SELECT  
2 InvoiceNo,  
3 StockCode,  
4 Quantity,  
5 UnitPrice,  
6 (Quantity\*UnitPrice) AS amount  
7 FROM  
8 `concise-flame-386113.retail.sales`

This query will process 11.12 MB when run.

Query results

Press Alt+F1 for Accessibility Options

SAVE RESULTS EXPLORE DATA

JOB INFORMATION RESULTS JSON EXECUTION DETAILS EXECUTION GRAPH PREVIEW

Row	InvoiceNo	StockCode	Quantity	UnitPrice	amount
1	571035	21238	8	0.85	6.8
2	571035	21243	8	1.69	13.52
3	571035	23240	6	4.15	24.900000...
4	571035	21936	5	2.95	14.75

Results per page: 50 1 – 50 of 375187

PERSONAL H REFRESH

Start your Free Trial with \$300 in credit. Don't worry—you won't be charged if you run out of credits. [Learn more](#)

[DISMISS](#)[ACTIVATE](#)

Google Cloud customer-segmentation-373712 Search (/) for resources, docs, products, and more [Search](#)

BigQuery SANDBOX Set up billing to upgrade to the full BigQuery experience. [Learn more](#)

[DISMISS](#)[UPGRADE](#)

Analysis

SQL workspace

Data transfers

Scheduled queries

Analytics Hub

Dataform

Partner Center

Migration

Assessment

SQL translation

Administration

Monitoring

Capacity management

Release Notes

SANDBOX Set up billing to upgrade to the full BigQuery experience. [Learn more](#)

This query will process 11.12 MB when run.

group by  
Invoice NO  
sum(amount)

Query results

JOBI INFORMATION RESULTS JSON EXECUTION DETAILS EXECUTION GRAPH PREVIEW

Row	InvoiceNo	StockCode	Quantity	UnitPrice	amount
1	571035	21238	8	0.85	6.8
2	571035	21243	8	1.69	13.52
3	571035	23240	6	4.15	24.900000...
4	571035	21936	5	2.95	14.75

Results per page: 50 1 – 50 of 375187

PERSONAL H REFRESH

Start your Free Trial with \$300 in credit. Don't worry—you won't be charged if you run out of credits. [Learn more](#)

**RFM✓**

Google Cloud customer-segmentation-373712 Search (/) for resources, docs, products, and more Search

BigQuery SANDBOX Set up billing to upgrade to the full BigQuery experience. [Learn more](#)

Analysis

SQL workspace

Data transfers

Scheduled queries

Analytics Hub

Dataform

Partner Center

Migration

Assessment

SQL translation

Administration

Monitoring

Capacity management

Release Notes

1 SELECT  
2 InvoiceNo,  
3 StockCode,  
4 Quantity,  
5 UnitPrice,  
6 (Quantity\*UnitPrice) AS amount  
7 FROM  
8 `concise-flame-386113.retail.sales`

This query will process 11.12 MB when run.

Query results

Press Alt+F1 for Accessibility Options

SAVE RESULTS EXPLORE DATA

Row	InvoiceNo	StockCode	Quantity	UnitPrice	amount
1	571035	21238	8	0.85	6.8
2	571035	21243	8	1.69	13.52
3	571035	23240	6	4.15	24.900000...
4	571035	21936	5	2.95	14.75

Results per page: 50 1 – 50 of 375187

PERSONAL H REFRESH

Start your Free Trial with \$300 in credit. Don't worry—you won't be charged if you run out of credits. [Learn more](#)

[DISMISS](#)[ACTIVATE](#)

Google Cloud customer-segmentation-373712 Search (/) for resources, docs, products, and more [Search](#)

BigQuery SANDBOX Set up billing to upgrade to the full BigQuery experience. [Learn more](#)

[DISMISS](#)[UPGRADE](#)

Analysis

SQL workspace

Data transfers

Scheduled queries

Analytics Hub

Dataform

Partner Center

Migration

Assessment

SQL translation

Administration

Monitoring

Capacity management

Release Notes

sales 1 2 3 4 5 6 7 8 \*Untitled 2 +

1 RUN SAVE SHARE SCHEDULE MORE

1 SELECT  
2 InvoiceNo,  
3 StockCode,  
4 Quantity,  
5 UnitPrice,  
6 (Quantity\*UnitPrice) AS amount  
7 FROM  
8 `concise-flame-386113.retail.sales`

This query will process 11.12 MB when run.

Inv No. total amount

Press Alt+F1 for Accessibility Options

Query results

SAVE RESULTS EXPLORE DATA

JOB INFORMATION RESULTS JSON EXECUTION DETAILS EXECUTION GRAPH PREVIEW

Row	InvoiceNo	StockCode	Quantity	UnitPrice	amount
1	571035	21238	8	0.85	6.8
2	571035	21243	8	1.69	13.52
3	571035	23240	6	4.15	24.9000000...
4	571035	21936	5	2.95	14.75

Results per page: 50 1 – 50 of 375187

PERSONAL H REFRESH

Start your Free Trial with \$300 in credit. Don't worry—you won't be charged if you run out of credits. [Learn more](#)

[DISMISS](#)[ACTIVATE](#)

Google Cloud customer-segmentation-373712 Search (/) for resources, docs, products, and more [Search](#)

BigQuery SANDBOX Set up billing to upgrade to the full BigQuery experience. [Learn more](#)

[DISMISS](#) [UPGRADE](#)

Analysis

SQL workspace

Data transfers

Scheduled queries

Analytics Hub

Dataform

Partner Center

Migration

Assessment

SQL translation

Administration

Monitoring

Capacity management

Release Notes

sales 1 2 3 4 5 6 7 8 \*Untitled 2 +

RUN SAVE SHARE SCHEDULE MORE

1 SELECT  
2 InvoiceNo,  
3 StockCode,  
4 Quantity,  
5 UnitPrice,  
6 (Quantity\*UnitPrice) AS amount  
7 FROM  
8 `concise-flame-386113.retail.sales`

This query will process 11.12 MB when run.

group by & SUM

Query results

Press Alt+F1 for Accessibility Options

SAVE RESULTS EXPLORE DATA

JOB INFORMATION RESULTS JSON EXECUTION DETAILS EXECUTION GRAPH PREVIEW

Row	InvoiceNo	StockCode	Quantity	UnitPrice	amount
1	571035	21238	8	0.85	6.8
2	571035	21243	8	1.69	13.52
3	571035	23240	6	4.15	24.9000000...
4	571035	21936	5	2.95	14.75

Results per page: 50 1 – 50 of 375187

PERSONAL H REFRESH

Start your Free Trial with \$300 in credit. Don't worry—you won't be charged if you run out of credits. [Learn more](#)

[DISMISS](#)[ACTIVATE](#)

Google Cloud customer-segmentation-373712 Search (/) for resources, docs, products, and more [Search](#)

BigQuery SANDBOX Set up billing to upgrade to the full BigQuery experience. [Learn more](#)

[DISMISS](#)[UPGRADE](#)

Analysis

SQL workspace

Data transfers

Scheduled queries

Analytics Hub

Dataform

Partner Center

Migration

Assessment

SQL translation

Administration

Monitoring

Capacity management

Release Notes

1 WITH  
2 bills AS (  
3 SELECT  
4 InvoiceNo,  
5 (Quantity\*UnitPrice) AS amount  
6 FROM  
7 `concise-flame-386113.retail.sales` )  
8  
9  
10 SELECT  
11 InvoiceNo,  
12 SUM(amount) AS total  
13 FROM  
14 bills  
15 GROUP BY  
16 InvoiceNo

This query will process 8.59 MB when run.

Press Alt+F1 for Accessibility Options

Query results [SAVE RESULTS](#) [EXPLORE DATA](#)



PERSONAL H...

12 / 12

REFRESH

Start your Free Trial with \$300 in credit. Don't worry—you won't be charged if you run out of credits. [Learn more](#)

[DISMISS](#)[ACTIVATE](#)

Google Cloud customer-segmentation-373712 Search (/) for resources, docs, products, and more [Search](#)

BigQuery SANDBOX Set up billing to upgrade to the full BigQuery experience. [Learn more](#)

[DISMISS](#)[UPGRADE](#)

Analysis

SQL workspace

Data transfers

Scheduled queries

Analytics Hub

Dataform

Partner Center

Migration

Assessment

SQL translation

Administration

Monitoring

Capacity management

Release Notes

```
1 WITH
2   bills AS (
3     SELECT
4       InvoiceNo,
5       (Quantity*UnitPrice) AS amount
6     FROM
7       `concise-flame-386113.retail.sales` )
8
9
10  SELECT
11    InvoiceNo,
12    SUM(amount) AS total
13  FROM
14    bills
15  GROUP BY
16    InvoiceNo
```

mvNO amount

✓

Press Alt+F1 for Accessibility Options

## Query results

[SAVE RESULTS](#)[EXPLORE DATA](#)[REFRESH](#)

Start your Free Trial with \$300 in credit. Don't worry—you won't be charged if you run out of credits. [Learn more](#)

[DISMISS](#)[ACTIVATE](#)

Google Cloud customer-segmentation-373712 Search (/) for resources, docs, products, and more [Search](#)

BigQuery SANDBOX Set up billing to upgrade to the full BigQuery experience. [Learn more](#)

[DISMISS](#) [UPGRADE](#)

Analysis

SQL workspace

Data transfers

Scheduled queries

Analytics Hub

Dataform

Partner Center

Migration

Assessment

SQL translation

Administration

Monitoring

Capacity management

Release Notes

sales

InvoiceNo,  
(Quantity\*UnitPrice) AS amount  
FROM  
'concise-flame-386113.retail.sales' )  
  
SELECT  
InvoiceNo,  
SUM(amount) AS total  
FROM  
bills  
GROUP BY  
InvoiceNo

This query will process 8.59 MB when run.

Press Alt+F1 for Accessibility Options

Query results

[SAVE RESULTS](#) [EXPLORE DATA](#)

JOB INFORMATION RESULTS JSON EXECUTION DETAILS EXECUTION GRAPH PREVIEW

Row	InvoiceNo	total
1	571035	783.859999...
2	580158	269.960000...
3	572215	653.64
4	580553	615.279999...

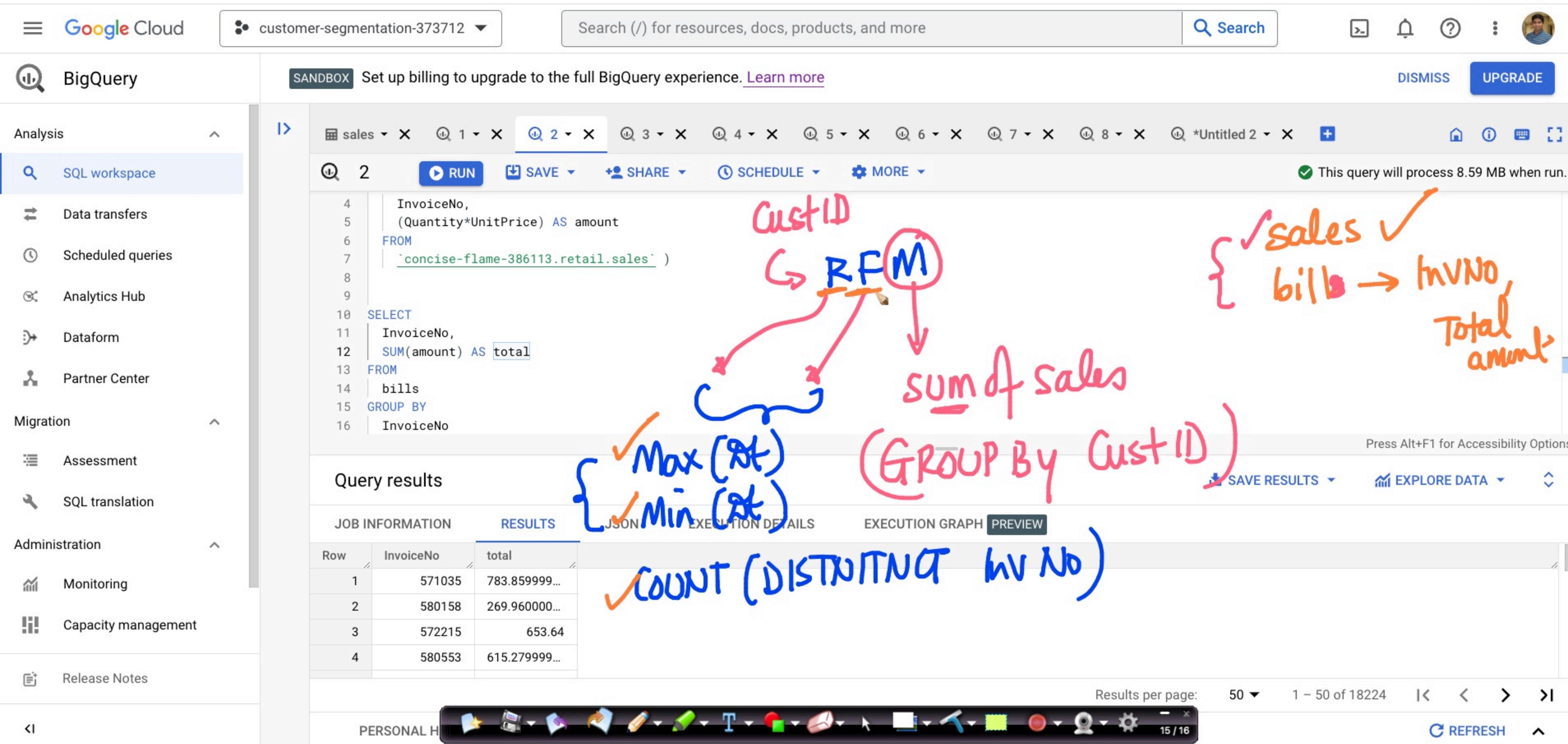
Results per page: 50 1 – 50 of 18224

PERSONAL H REFRESH

 Start your Free Trial with \$300 in credit. Don't worry—you won't be charged if you run out of credits. [Learn more](#)

DISMISS

**ACTIVATE**



Temp Pics - Google Docs | sales.csv - Google Drive | sales - Google Sheets | How to set up BigQuery.pdf | Approximate aggregate functions | Aggregate functions | Query results - BigQuery - cus

console.cloud.google.com/bigquery?project=concise-flame-386113&supportedpurview=project&ws=!1m4!1m4!4m3!1sconcise-flame-386113!2sretail!3ssales!1m3!8m2!1s905284958743!2sd74f896b75464c2fa8670... | Update

Start your Free Trial with \$300 in credit. Don't worry—you won't be charged if you run out of credits. [Learn more](#) DISMISS ACTIVATE

Google Cloud customer-segmentation-373712 Search (/) for resources, docs, products, and more Search

BigQuery SANDBOX Set up billing to upgrade to the full BigQuery experience. [Learn more](#) DISMISS UPGRADE

Analysis

SQL workspace

Data transfers

Scheduled queries

Analytics Hub

Dataform

Partner Center

Migration

Assessment

SQL translation

Administration

Monitoring

Capacity management

Release Notes

sales

2

RUN SAVE SHARE SCHEDULE MORE

This query will process 8.59 MB when run.

```
4 |   InvoiceNo,
5 |   (Quantity*UnitPrice) AS amount
6 | FROM
7 |   `concise-flame-386113.retail.sales` )
8 |
9 |
10 | SELECT
11 |   InvoiceNo,
12 |   SUM(amount) AS total
13 | FROM
14 |   bills
15 | GROUP BY
16 |   InvoiceNo
```

M: sum of sales

F: # purchases / # months

R: # days from last purchase

Query results

SAVE RESULTS EXPLORE DATA

JOB INFORMATION RESULTS JSON EXECUTION DETAILS EXECUTION GRAPH PREVIEW

Row	InvoiceNo	total
1	571035	783.859999...
2	580158	269.960000...
3	572215	653.64
4	580553	615.279999...

Results per page: 50 1 – 50 of 18224

PERSONAL H REFRESH

Start your Free Trial with \$300 in credit. Don't worry—you won't be charged if you run out of credits. [Learn more](#)

DISMISS

ACTIVATE

Google Cloud

customer-segmentation-373712

Search (/) for resources, docs, products, and more

Search



BigQuery

SANDBOX Set up billing to upgrade to the full BigQuery experience. [Learn more](#)

DISMISS

UPGRADE

Analysis

SQL workspace

Data transfers

Scheduled queries

Analytics Hub

Dataform

Partner Center

Migration

Assessment

SQL translation

Administration

Monitoring

Capacity management

Release Notes

3

1 SELECT  
2 s.CustomerID,  
3 DATE(MAX(s.InvoiceDate)) AS last\_purchase\_date,  
4 DATE(MIN(s.InvoiceDate)) AS first\_purchase\_date,  
5 COUNT(DISTINCT s.InvoiceNo) AS num\_purchases,  
6 SUM(b.total) AS monetary,  
7 FROM  
8 `concise-flame-386113.retail.sales` s  
9 LEFT JOIN  
10 `concise-flame-386113.retail.bill` b  
11 ON  
12 s.InvoiceNo=b.InvoiceNo  
13 GROUP BY  
14 CustomerID

This query will process 8.87 MB when run.

Press Alt+F1 for Accessibility Options

Query results

SAVE RESULTS

EXPLORE DATA

REFRESH





Start your Free Trial with \$300 in credit. Don't worry—you won't be charged if you run out of credits. [Learn more](#)

[DISMISS](#)

[ACTIVATE](#)

Google Cloud

customer-segmentation-373712

Search (/) for resources, docs, products, and more

Search



BigQuery

SANDBOX

Set up billing to upgrade to the full BigQuery experience. [Learn more](#)

[DISMISS](#)

[UPGRADE](#)

Analysis



SQL workspace

Data transfers

Scheduled queries

Analytics Hub

Dataform

Partner Center

Migration



Assessment

SQL translation

Release Notes

1 SELECT  
2 s.CustomerID,  
3 DATE(MAX(s.InvoiceDate)) AS last\_purchase\_date,  
4 DATE(MIN(s.InvoiceDate)) AS first\_purchase\_date,  
5 COUNT(DISTINCT s.InvoiceNo) AS num\_purchases,  
6 SUM(b.total) AS monetary,  
7 FROM  
8 `concise-flame-386113.retail.sales` s  
9 LEFT JOIN  
10 `concise-flame-386113.retail.bill` b  
11 ON  
12 s.InvoiceNo=b.InvoiceNo  
13 GROUP BY  
14 CustomerID

Press Alt+F1 for Accessibility Options

Query results

SAVE RESULTS

EXPLORE DATA



REFRESH





Start your Free Trial with \$300 in credit. Don't worry—you won't be charged if you run out of credits. [Learn more](#)

[DISMISS](#)

[ACTIVATE](#)

Google Cloud

customer-segmentation-373712

Search (/) for resources, docs, products, and more

Search



BigQuery

SANDBOX

Set up billing to upgrade to the full BigQuery experience. [Learn more](#)

[DISMISS](#)

[UPGRADE](#)

Analysis



SQL workspace

Data transfers

Scheduled queries

Analytics Hub

Dataform

Partner Center

Migration



Assessment

SQL translation

Release Notes



sales



1



2



3



3

RUN

SAVE

SHARE

SCHEDULE

MORE

This query will process 8.87 MB when run.

```
1 SELECT
2   s.CustomerID,
3   DATE(MAX(s.InvoiceDate)) AS last_purchase_date,
4   DATE(MIN(s.InvoiceDate)) AS first_purchase_date,
5   COUNT(DISTINCT s.InvoiceNo) AS num_purchases,
6   SUM(b.total) AS monetary,
7   FROM
8   `concise-flame-386113.retail.sales` s
9   LEFT JOIN
10  `concise-flame-386113.retail.bill` b
11  ON
12  s.InvoiceNo=b.InvoiceNo
13 GROUP BY
14 CustomerID
```



Query results

SAVE RESULTS

EXPLORE DATA



REFRESH



Press Alt+F1 for Accessibility Options



Start your Free Trial with \$300 in credit. Don't worry—you won't be charged if you run out of credits. [Learn more](#)

[DISMISS](#)

[ACTIVATE](#)

Google Cloud

customer-segmentation-373712

Search (/) for resources, docs, products, and more

[Search](#)



BigQuery

SANDBOX

Set up billing to upgrade to the full BigQuery experience. [Learn more](#)

[DISMISS](#)

[UPGRADE](#)

Analysis

SQL workspace

Data transfers

Scheduled queries

Analytics Hub

Dataform

Partner Center

Migration

Assessment

SQL translation

Release Notes



sales



1



2



3



4



5



6



7



8



>



Q

3

[RUN](#)

[SAVE](#)

[SHARE](#)

[SCHEDULE](#)

[MORE](#)

```
1 SELECT
2   s.CustomerID,
3   DATE(MAX(s.InvoiceDate)) AS last_purchase_date,
4   DATE(MIN(s.InvoiceDate)) AS first_purchase_date,
5   COUNT(DISTINCT s.InvoiceNo) AS num_purchases,
6   SUM(b.total) AS monetary,
7   FROM
8   `concise-flame-386113.retail.sales` s
9   LEFT JOIN
10  `concise-flame-386113.retail.bill` b
11  ON
12  s.InvoiceNo=b.InvoiceNo
13 GROUP BY
14 CustomerID
```

R  
F  
M✓

Press Alt+F1 for Accessibility Options

Query results

[SAVE RESULTS](#)

[EXPLORE DATA](#)



[REFRESH](#)





Start your Free Trial with \$300 in credit. Don't worry—you won't be charged if you run out of credits. [Learn more](#)

DISMISS

ACTIVATE

Google Cloud

customer-segmentation-373712

Search (/) for resources, docs, products, and more

Search



BigQuery

SANDBOX

Set up billing to upgrade to the full BigQuery experience. [Learn more](#)

DISMISS

UPGRADE

Analysis

SQL workspace

Data transfers

Scheduled queries

Analytics Hub

Dataform

Partner Center

Migration

Assessment

SQL translation

Release Notes

11 LEFT JOIN  
12 `concise-flame-386113.retail.bill` b  
13 ON  
14 s.InvoiceNo=b.InvoiceNo  
15 GROUP BY  
16 CustomerID )  
17 SELECT  
18 \*,  
19 DATE\_DIFF(reference\_date, last\_purchase\_date, DAY) AS recency,  
20 num\_purchases/ (months\_cust) AS frequency,  
21 FROM (  
22 SELECT  
23 \*,  
24 MAX(last\_purchase\_date) OVER () + 1 AS reference\_date, # logic to obtain reference date  
25 DATE\_DIFF(cte.last\_purchase\_date, cte.first\_purchase\_date, month)+1 AS months\_cust  
26 FROM  
27 cte);

today

R F M ✓

Press Alt+F1 for Accessibility Options

Query results

SAVE RESULTS

EXPLORE DATA



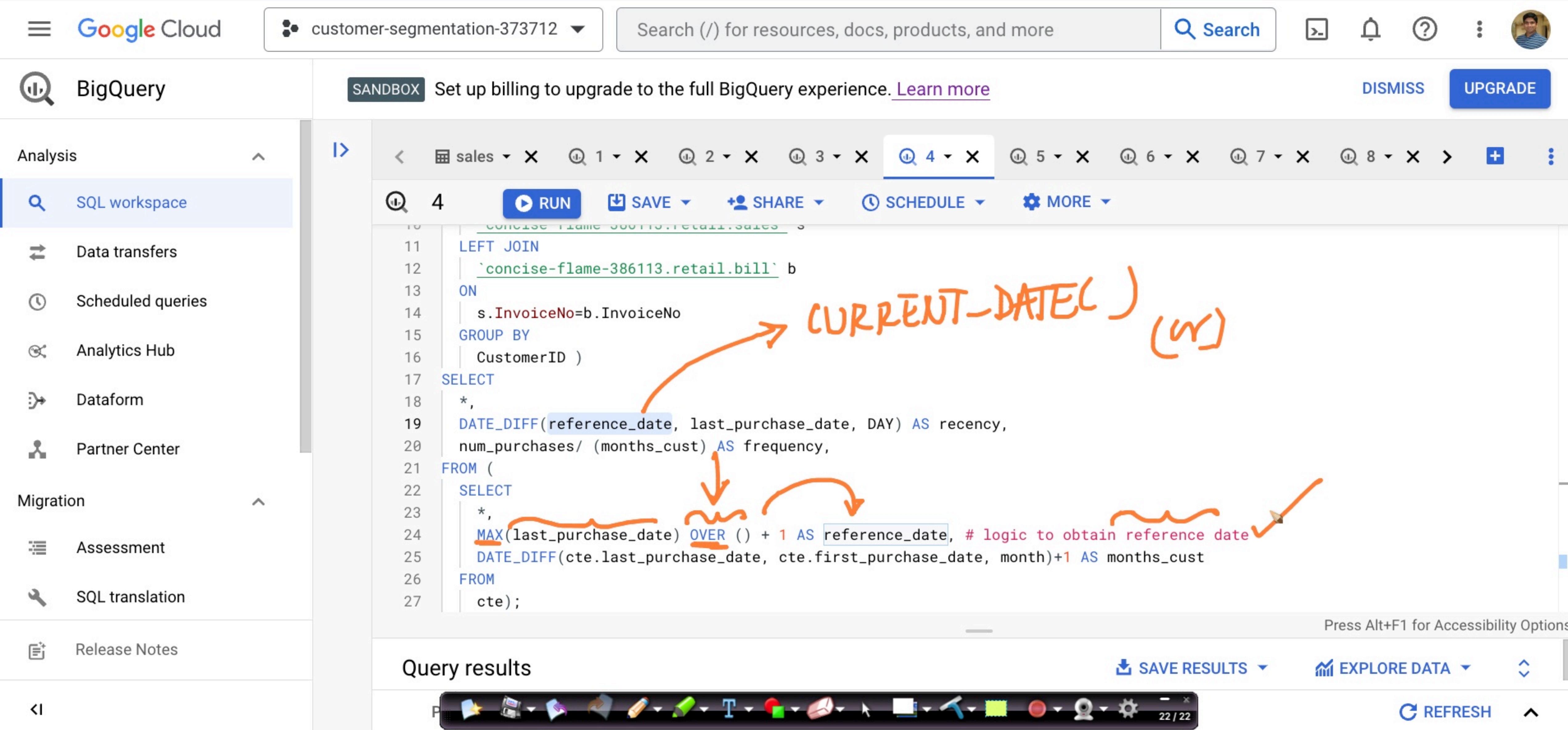
REFRESH



 Start your Free Trial with \$300 in credit. Don't worry—you won't be charged if you run out of credits. [Learn more](#)

DISMISS

## ACTIVATE





Start your Free Trial with \$300 in credit. Don't worry—you won't be charged if you run out of credits. [Learn more](#)

[DISMISS](#)

[ACTIVATE](#)

Google Cloud

customer-segmentation-373712

Search (/) for resources, docs, products, and more

Search



BigQuery

SANDBOX

Set up billing to upgrade to the full BigQuery experience. [Learn more](#)

[DISMISS](#)

[UPGRADE](#)

Analysis

SQL workspace

Data transfers

Scheduled queries

Analytics Hub

Dataform

Partner Center

Migration

Assessment

SQL translation

Release Notes



< sales × Q 1 × Q 2 × Q 3 × Q 4 × Q 5 × Q 6 × Q 7 × Q 8 × > + :



4

RUN

SAVE

SHARE

SCHEDULE

MORE

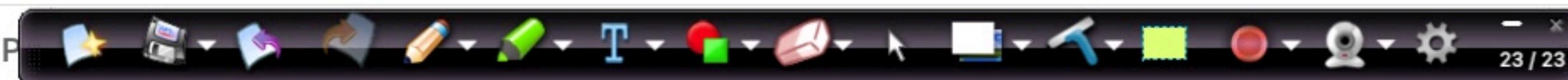
```
11 LEFT JOIN
12   `concise-flame-386113.retail.bill` b
13 ON
14   s.InvoiceNo=b.InvoiceNo
15 GROUP BY
16   CustomerID )
17 SELECT
18   *,
19   DATE_DIFF(reference_date, last_purchase_date, DAY) AS recency,
20   num_purchases/ (months_cust) AS frequency,
21 FROM (
22   SELECT
23     *,
24     MAX(last_purchase_date) OVER () + 1 AS reference_date, # logic to obtain reference date
25     DATE_DIFF(cte.last_purchase_date, cte.first_purchase_date, month)+1 AS months_cust
26   FROM
27   cte);
```

Press Alt+F1 for Accessibility Options

Query results

SAVE RESULTS

EXPLORE DATA



REFRESH





Start your Free Trial with \$300 in credit. Don't worry—you won't be charged if you run out of credits. [Learn more](#)

[DISMISS](#)

[ACTIVATE](#)

Google Cloud

customer-segmentation-373712

Search (/) for resources, docs, products, and more

[Search](#)



BigQuery

SANDBOX

Set up billing to upgrade to the full BigQuery experience. [Learn more](#)

[DISMISS](#)

[UPGRADE](#)

Analysis

SQL workspace

Data transfers

Scheduled queries

Analytics Hub

Dataform

Partner Center

Migration

Assessment

SQL translation

Release Notes

< sales × Q 1 × Q 2 × Q 3 × Q 4 × Q 5 × Q 6 × Q 7 × Q 8 × > + :

Q

4

[RUN](#)

[SAVE](#)

[SHARE](#)

[SCHEDULE](#)

[MORE](#)

```
10    LEFT JOIN
11      `concise-flame-386113.retail.bill` b
12    ON
13      s.InvoiceNo=b.InvoiceNo
14    GROUP BY
15      CustomerID )
16
17  SELECT
18    *,
19    DATE_DIFF(reference_date, last_purchase_date, DAY) AS recency,
20    num_purchases/ (months_cust) AS frequency,
21  FROM (
22    SELECT
23      *,
24      MAX(last_purchase_date) OVER () + 1 AS reference_date, # logic to obtain reference date
25      DATE_DIFF(cte.last_purchase_date, cte.first_purchase_date, month)+1 AS months_cust
26    FROM
27      cte);
```

✓ Sat ✓  
→ Sun X  
Mon-Mon (JAM) ↗

Query results

[SAVE RESULTS](#)

[EXPLORE DATA](#)



[REFRESH](#)



Press Alt+F1 for Accessibility Options



Start your Free Trial with \$300 in credit. Don't worry—you won't be charged if you run out of credits. [Learn more](#)

[DISMISS](#)

[ACTIVATE](#)

Google Cloud

customer-segmentation-373712

Search (/) for resources, docs, products, and more

Search



BigQuery

SANDBOX

Set up billing to upgrade to the full BigQuery experience. [Learn more](#)

[DISMISS](#)

[UPGRADE](#)

Analysis



SQL workspace

Data transfers

Scheduled queries

Analytics Hub

Dataform

Partner Center

Migration



Assessment

SQL translation

Release Notes

< sales Q 1 Q 2 Q 3 Q 4 Q 5 Q 6 Q 7 Q 8 + :

Q

4

RUN

SAVE

SHARE

SCHEDULE

MORE

```
11 LEFT JOIN
12   `concise-flame-386113.retail.bill` b
13 ON
14   s.InvoiceNo=b.InvoiceNo
15 GROUP BY
16   CustomerID )
17 SELECT
18   *,
19   DATE_DIFF(reference_date, last_purchase_date, DAY) AS recency,
20   num_purchases/ (months_cust) AS frequency,
21 FROM (
22   SELECT
23     *,
24     MAX(last_purchase_date) OVER () + 1 AS reference_date, # logic to obtain reference date
25     DATE_DIFF(cte.last_purchase_date, cte.first_purchase_date, month)+1 AS months_cust
26   FROM
27   cte);
```

Press Alt+F1 for Accessibility Options

Query results

SAVE RESULTS

EXPLORE DATA



REFRESH





Start your Free Trial with \$300 in credit. Don't worry—you won't be charged if you run out of credits. [Learn more](#)

[DISMISS](#)

[ACTIVATE](#)

Google Cloud

customer-segmentation-373712

Search (/) for resources, docs, products, and more

Search



BigQuery

SANDBOX

Set up billing to upgrade to the full BigQuery experience. [Learn more](#)

[DISMISS](#)

[UPGRADE](#)

Analysis

SQL workspace

Data transfers

Scheduled queries

Analytics Hub

Dataform

Partner Center

Migration

Assessment

SQL translation

Release Notes



< sales × Q 1 × Q 2 × Q 3 × Q 4 × Q 5 × Q 6 × Q 7 × Q 8 × > + :



4

RUN

SAVE

SHARE

SCHEDULE

MORE

```
11 LEFT JOIN
12   `concise-flame-386113.retail.bill` b
13 ON
14   s.InvoiceNo=b.InvoiceNo
15 GROUP BY
16   CustomerID )
17 SELECT
18   *,
19   DATE_DIFF(reference_date, last_purchase_date, DAY) AS recency,
20   num_purchases/ (months_cust) AS frequency,
21 FROM (
22   SELECT
23     *,
24     MAX(last_purchase_date) OVER () + 1 AS reference_date, # logic to obtain reference date
25     DATE_DIFF(cte.last_purchase_date, cte.first_purchase_date, month)+1 AS months_cust
26   FROM
27   cte);
```

Press Alt+F1 for Accessibility Options

Query results

SAVE RESULTS

EXPLORE DATA



REFRESH





Start your Free Trial with \$300 in credit. Don't worry—you won't be charged if you run out of credits. [Learn more](#)

[DISMISS](#)

[ACTIVATE](#)

Google Cloud

customer-segmentation-373712

Search (/) for resources, docs, products, and more

Search



BigQuery

SANDBOX

Set up billing to upgrade to the full BigQuery experience. [Learn more](#)

[DISMISS](#)

[UPGRADE](#)

Analysis

SQL workspace

Data transfers

Scheduled queries

Analytics Hub

Dataform

Partner Center

Migration

Assessment

SQL translation

Release Notes



<

sales



Q

1



Q

2



Q

3



Q

4



Q

5



Q

6



Q

7



Q

8



>



4

RUN

SAVE

SHARE

SCHEDULE

MORE

```
11 LEFT JOIN
12   `concise-flame-386113.retail.bill` b
13 ON
14   s.InvoiceNo=b.InvoiceNo
15 GROUP BY
16   CustomerID )
17 SELECT
18   *,
19   DATE_DIFF(reference_date, last_purchase_date, DAY) AS recency,
20   num_purchases/ (months_cust) AS frequency,
21 FROM (
22   SELECT
23     *,
24     MAX(last_purchase_date) OVER () + 1 AS reference_date, # logic to obtain reference date
25     DATE_DIFF(cte.last_purchase_date, cte.first_purchase_date, month)+1 AS months_cust
26   FROM
27     cte);
```

Jan 1 May 5

Press Alt+F1 for Accessibility Options

Query results

SAVE RESULTS

EXPLORE DATA



REFRESH





Start your Free Trial with \$300 in credit. Don't worry—you won't be charged if you run out of credits. [Learn more](#)

[DISMISS](#)

[ACTIVATE](#)

Google Cloud

customer-segmentation-373712

Search (/) for resources, docs, products, and more

Search



BigQuery

SANDBOX

Set up billing to upgrade to the full BigQuery experience. [Learn more](#)

[DISMISS](#)

[UPGRADE](#)

Analysis



SQL workspace

Data transfers

Scheduled queries

Analytics Hub

Dataform

Partner Center

Migration

Assessment

SQL translation

Release Notes



< sales × Q 1 × Q 2 × Q 3 × Q 4 × Q 5 × Q 6 × Q 7 × Q 8 × > + :



4

RUN

SAVE

SHARE

SCHEDULE

MORE

```
11 LEFT JOIN
12   `concise-flame-386113.retail.bill` b
13 ON
14   s.InvoiceNo=b.InvoiceNo
15 GROUP BY
16   CustomerID )
17 SELECT
18   *,
19   DATE_DIFF(reference_date, last_purchase_date, DAY) AS recency,
20   num_purchases/ (months_cust) AS frequency,
21   FROM (
22     SELECT
23       *
24       MAX(last_purchase_date) OVER () + 1 AS reference_date, # logic to obtain reference date
25       DATE_DIFF(cte.last_purchase_date, cte.first_purchase_date, month)+1 AS months_cust
26     FROM
27       cte);
```

Query results

SAVE RESULTS

EXPLORE DATA



REFRESH



Press Alt+F1 for Accessibility Options



Start your Free Trial with \$300 in credit. Don't worry—you won't be charged if you run out of credits. [Learn more](#)

[DISMISS](#)

[ACTIVATE](#)

Google Cloud

customer-segmentation-373712

Search (/) for resources, docs, products, and more

Search



BigQuery

SANDBOX

Set up billing to upgrade to the full BigQuery experience. [Learn more](#)

[DISMISS](#)

[UPGRADE](#)

Analysis



SQL workspace

Data transfers

Scheduled queries

Analytics Hub

Dataform

Partner Center

Migration



Assessment

SQL translation

Release Notes



<

sales



Q

1



Q

2



Q

3



Q

4



Q

5



Q

6



Q

7



Q

8



&gt;



4

RUN

SAVE

SHARE

SCHEDULE

MORE

```
11 LEFT JOIN
12   `concise-flame-386113.retail.bill` b
13 ON
14   s.InvoiceNo=b.InvoiceNo
15 GROUP BY
16   CustomerID )
17 SELECT
18   *,
19   DATE_DIFF(reference_date, last_purchase_date, DAY) AS recency,
20   num_purchases/ (months_cust) AS frequency,
21 FROM (
22   SELECT
23     *,
24     MAX(last_purchase_date) OVER () + 1 AS reference_date, # logic to obtain reference date
25     DATE_DIFF(cte.last_purchase_date, cte.first_purchase_date, month)+1 AS months_cust
26   FROM
27   cte);
```

Press Alt+F1 for Accessibility Options

Query results

SAVE RESULTS

EXPLORE DATA



REFRESH





Start your Free Trial with \$300 in credit. Don't worry—you won't be charged if you run out of credits. [Learn more](#)

[DISMISS](#)

[ACTIVATE](#)

Google Cloud

customer-segmentation-373712

Search (/) for resources, docs, products, and more

Search



BigQuery

SANDBOX

Set up billing to upgrade to the full BigQuery experience. [Learn more](#)

[DISMISS](#)

[UPGRADE](#)

Analysis

SQL workspace

Data transfers

Scheduled queries

Analytics Hub

Dataform

Partner Center

Migration

Assessment

SQL translation

Release Notes



<

sales



Q

1



Q

2



Q

3



Q

4



Q

5



Q

6



Q

7



Q

8



Q

4

RUN

SAVE

SHARE

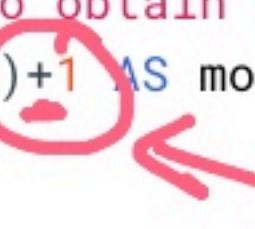
SCHEDULE

MORE

```
11 LEFT JOIN
12   `concise-flame-386113.retail.bill` b
13   ON
14     s.InvoiceNo=b.InvoiceNo
15   GROUP BY
16     CustomerID )
17 SELECT
18   *,
19   DATE_DIFF(reference_date, last_purchase_date, DAY) AS recency,
20   num_purchases/ (months_cust) AS frequency,
21 FROM (
22   SELECT
23     *,
24     MAX(last_purchase_date) OVER () + 1 AS reference_date, # logic to obtain reference date
25   → DATE_DIFF(cte.last_purchase_date, cte.first_purchase_date, month)+1 AS months_cust
26   FROM
27   cte);
```

1

5



Press Alt+F1 for Accessibility Options

Query results

SAVE RESULTS

EXPLORE DATA



REFRESH





Start your Free Trial with \$300 in credit. Don't worry—you won't be charged if you run out of credits. [Learn more](#)

[DISMISS](#)

[ACTIVATE](#)

Google Cloud

customer-segmentation-373712

Search (/) for resources, docs, products, and more

Search



BigQuery

SANDBOX

Set up billing to upgrade to the full BigQuery experience. [Learn more](#)

[DISMISS](#)

[UPGRADE](#)

Analysis

SQL workspace

Data transfers

Scheduled queries

Analytics Hub

Dataform

Partner Center

Migration

Assessment

SQL translation

Release Notes



<

sales



Q

1



Q

2



Q

3



Q

4



Q

5



Q

6



Q

7



Q

8



>



Q

4

RUN

SAVE

SHARE

SCHEDULE

MORE

```
11 LEFT JOIN
12   `concise-flame-386113.retail.bill` b
13 ON
14   s.InvoiceNo=b.InvoiceNo
15 GROUP BY
16   CustomerID )
17 SELECT
18   *,
19   DATE_DIFF(reference_date, last_purchase_date, DAY) AS recency,
20   num_purchases/ (months_cust) AS frequency,
21 FROM (
22   SELECT
23     *,
24     MAX(last_purchase_date) OVER () + 1 AS reference_date, # logic to obtain reference date
25     DATE_DIFF(cte.last_purchase_date, cte.first_purchase_date, month)+1 AS months_cust
26   FROM
27   cte);
```



Press Alt+F1 for Accessibility Options

Query results

SAVE RESULTS

EXPLORE DATA



REFRESH





Start your Free Trial with \$300 in credit. Don't worry—you won't be charged if you run out of credits. [Learn more](#)

[DISMISS](#)

[ACTIVATE](#)

Google Cloud

customer-segmentation-373712

Search (/) for resources, docs, products, and more

Search



BigQuery

SANDBOX

Set up billing to upgrade to the full BigQuery experience. [Learn more](#)

[DISMISS](#)

[UPGRADE](#)

Analysis

SQL workspace

Data transfers

Scheduled queries

Analytics Hub

Dataform

Partner Center

Migration

Assessment

SQL translation

Release Notes



< sales × Q 1 × Q 2 × Q 3 × Q 4 × Q 5 × Q 6 × Q 7 × Q 8 × > + :



4

RUN

SAVE

SHARE

SCHEDULE

MORE

```
11 LEFT JOIN
12   `concise-flame-386113.retail.bill` b
13 ON
14   s.InvoiceNo=b.InvoiceNo
15 GROUP BY
16   CustomerID )
17 SELECT
18   *,
19   DATE_DIFF(reference_date, last_purchase_date, DAY) AS recency,
20   num_purchases/ (months_cust) AS frequency,
21 FROM (
22   SELECT
23     *,
24     MAX(last_purchase_date) OVER () + 1 AS reference_date, # logic to obtain reference date
25     DATE_DIFF(cte.last_purchase_date, cte.first_purchase_date, month)+1 AS months_cust
26   FROM
27     cte);
```

Query results

SAVE RESULTS

EXPLORE DATA



REFRESH



Press Alt+F1 for Accessibility Options



Start your Free Trial with \$300 in credit. Don't worry—you won't be charged if you run out of credits. [Learn more](#)

[DISMISS](#)

[ACTIVATE](#)

Google Cloud

customer-segmentation-373712 ▾

Search (/) for resources, docs, products, and more

Search



BigQuery

SANDBOX

Set up billing to upgrade to the full BigQuery experience. [Learn more](#)

[DISMISS](#)

[UPGRADE](#)

Analysis



SQL workspace

Data transfers

Scheduled queries

Analytics Hub

Dataform

Partner Center

Migration



Assessment

SQL translation

Release Notes

◀ ⌂ sales × Q 1 × Q 2 × Q 3 × Q 4 × Q 5 × Q 6 × Q 7 × Q 8 × > + :

Q

4

RUN

SAVE

SHARE

SCHEDULE

MORE

```
1 WITH
2   cte AS (
3     SELECT
4       s.CustomerID,
5       DATE(MAX(s.InvoiceDate)) AS last_purchase_date,
6       DATE(MIN(s.InvoiceDate)) AS first_purchase_date,
7       COUNT(DISTINCT s.InvoiceNo) AS num_purchases,
8       SUM(b.total) AS monetary,
9     FROM
10    `concise-flame-386113.retail.sales` s
11    LEFT JOIN
12    `concise-flame-386113.retail.bill` b
13    ON
14      s.InvoiceNo=b.InvoiceNo
15    GROUP BY
16      CustomerID )
17 SELECT
```

R F M

Query results

SAVE RESULTS

EXPLORE DATA



REFRESH



Press Alt+F1 for Accessibility Options



Start your Free Trial with \$300 in credit. Don't worry—you won't be charged if you run out of credits. [Learn more](#)

[DISMISS](#)

[ACTIVATE](#)

Google Cloud

customer-segmentation-373712

Search (/) for resources, docs, products, and more

[Search](#)



BigQuery

SANDBOX

Set up billing to upgrade to the full BigQuery experience. [Learn more](#)

[DISMISS](#)

[UPGRADE](#)

Analysis

SQL workspace

Data transfers

Scheduled queries

Analytics Hub

Dataform

Partner Center

Migration

Assessment

SQL translation

Release Notes



< sales × Q 1 × Q 2 × Q 3 × Q 4 × Q 5 × Q 6 × Q 7 × Q 8 × > + :



4

[RUN](#)

[SAVE](#)

[SHARE](#)

[SCHEDULE](#)

[MORE](#)

```
1 WITH
2   cte AS (
3     SELECT
4       s.CustomerID,
5       DATE(MAX(s.InvoiceDate)) AS last_purchase_date,
6       DATE(MIN(s.InvoiceDate)) AS first_purchase_date,
7       COUNT(DISTINCT s.InvoiceNo) AS num_purchases,
8       SUM(b.total) AS monetary,
9     FROM
10    `concise-flame-386113.retail.sales` s
11   LEFT JOIN
12    `concise-flame-386113.retail.bill` b
13   ON
14     s.InvoiceNo=b.InvoiceNo
15   GROUP BY
16     CustomerID )
17 SELECT
```

R F M

{ 0-20 - 1  
21-40 - 2  
41-60 - 3  
61-80 - 4  
81-100 - 5

Press Alt+F1 for Accessibility Options

Query results

[SAVE RESULTS](#)

[EXPLORE DATA](#)



[REFRESH](#)





Start your Free Trial with \$300 in credit. Don't worry—you won't be charged if you run out of credits. [Learn more](#)

[DISMISS](#)

[ACTIVATE](#)

Google Cloud

customer-segmentation-373712

Search (/) for resources, docs, products, and more

Search



BigQuery

SANDBOX

Set up billing to upgrade to the full BigQuery experience. [Learn more](#)

[DISMISS](#)

[UPGRADE](#)

Analysis

SQL workspace

Data transfers

Scheduled queries

Analytics Hub

Dataform

Partner Center

Migration

Assessment

SQL translation

Release Notes



< sales × Q 1 × Q 2 × Q 3 × Q 4 × Q 5 × Q 6 × Q 7 × Q 8 × > + :



4

RUN

SAVE

SHARE

SCHEDULE

MORE

```
1 WITH
2   cte AS (
3     SELECT
4       s.CustomerID,
5       DATE(MAX(s.InvoiceDate)) AS last_purchase_date,
6       DATE(MIN(s.InvoiceDate)) AS first_purchase_date,
7       COUNT(DISTINCT s.InvoiceNo) AS num_purchases,
8       SUM(b.total) AS monetary,
9     FROM
10    `concise-flame-386113.retail.sales` s
11   LEFT JOIN
12    `concise-flame-386113.retail.bill` b
13   ON
14     s.InvoiceNo=b.InvoiceNo
15   GROUP BY
16     CustomerID )
17 SELECT
```



Press Alt+F1 for Accessibility Options

Query results

SAVE RESULTS

EXPLORE DATA



REFRESH



Temp Pics - Google Docs | sales.csv - Google Drive | sales - Google Sheets | How to set up BigQuery.p | Approximate aggregate fu | Aggregate functions | Big | Query results - BigQuery | Numbering functions | Big | + | console.cloud.google.com/bigquery?project=concise-flame-386113&supportedpurview=project&ws=!1m42!1m4!4m3!1sconcise-flame-386113!2sretail!3ssales!1m3!8m2!1s905284958743!2sd74f896b75464c2fa8670... | Update

Start your Free Trial with \$300 in credit. Don't worry—you won't be charged if you run out of credits. [Learn more](#)

DISMISS ACTIVATE

Google Cloud customer-segmentation-373712 Search (/) for resources, docs, products, and more Search

BigQuery SANDBOX Set up billing to upgrade to the full BigQuery experience. [Learn more](#)

Analysis SQL workspace Data transfers Scheduled queries Analytics Hub Dataform Partner Center

Migration Assessment SQL translation Release Notes

Untitled 2 RUN SAVE SHARE SCHEDULE MORE Query completed.

1 select \*, ntile(5) over(order by recency desc), ntile(5) over(order by frequency), ntile(5) over(order by monetary) from `retail.RFM`;

2

Press Alt+F1 for Accessibility Options

Query results

SAVE RESULTS EXPLORE DATA

JOB INFORMATION RESULTS JSON EXECUTION DETAILS EXECUTION GRAPH PREVIEW

Row	num_purchases	monetary	reference_date	months_cust	recency	frequency	f0_	f1_	f2_
1	1	155.000000...	2011-12-10	1	8	1.0	5	4	1
2	1	234.0	2011-12-10	1	129	1.0	2	3	1

Results per page: 50 | 1 – 50 of 4311 | < < > > | 36 / 36 | REFRESH

Temp Pics - Google Docs | sales.csv - Google Drive | sales - Google Sheets | How to set up BigQuery.p | Approximate aggregate fu | Aggregate functions | Big | Query results - BigQuery | Numbering functions | Big | + | console.cloud.google.com/bigquery?project=concise-flame-386113&supportedpurview=project&ws=!1m42!1m4!4m3!1sconcise-flame-386113!2sretail!3ssales!1m3!8m2!1s905284958743!2sd74f896b75464c2fa8670... | Update

Start your Free Trial with \$300 in credit. Don't worry—you won't be charged if you run out of credits. [Learn more](#)

DISMISS ACTIVATE

Google Cloud customer-segmentation-373712 Search (/) for resources, docs, products, and more Search

BigQuery SANDBOX Set up billing to upgrade to the full BigQuery experience. [Learn more](#)

Analysis SQL workspace Data transfers Scheduled queries Analytics Hub Dataform Partner Center

Migration Assessment SQL translation Release Notes

Untitled 2 RUN SAVE SHARE SCHEDULE MORE \*Untitled 2 X

1 select \*, ntile(5) over(order by recency desc), ntile(5) over(order by frequency), ntile(5) over(order by monetary) from `retail.RFM`;

2

Query results

Press Alt+F1 for Accessibility Options

SAVE RESULTS EXPLORE DATA

JOB INFORMATION RESULTS JSON EXECUTION DETAILS EXECUTION GRAPH PREVIEW

Row	num_purchases	monetary	reference_date	months_cust	recency	frequency	f0_	f1_	f2_
1	1	155.000000...	2011-12-10	1	8	1.0	5	4	1
2	1	234.0	2011-12-10	1	129	1.0	2	3	1

Results per page: 50 1 – 50 of 4311 < < > > |

P REFRESH



Start your Free Trial with \$300 in credit. Don't worry—you won't be charged if you run out of credits. [Learn more](#)

DISMISS

ACTIVATE

Google Cloud

customer-segmentation-373712

Search (/) for resources, docs, products, and more

Search



BigQuery

SANDBOX

Set up billing to upgrade to the full BigQuery experience. [Learn more](#)

DISMISS

UPGRADE

Analysis

SQL workspace

Data transfers

Scheduled queries

Analytics Hub

Dataform

Partner Center

Migration

Assessment

SQL translation

Release Notes

Untitled 2

RUN SAVE SHARE SCHEDULE MORE

Query completed.

```
1 select *, ntile(5) over(order by recency desc), ntile(5) over(order by frequency), ntile(5) over(order by monetary) from `retail.RFM`.
```

disadv? → Speed

Query results

SAVE RESULTS

EXPLORE DATA

JOB INFORMATION

RESULTS

JSON

EXECUTION DETAILS

EXECUTION GRAPH PREVIEW

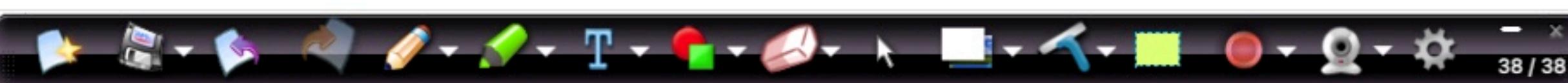
Row	num_purchases	monetary	reference_date	months_cust	recency	frequency	f0_	f1_	f2_
1	1	155.000000...	2011-12-10	1	8	1.0	5	4	1
2	1	234.0	2011-12-10	1	129	1.0	2	3	1

Results per page:

50

1 – 50 of 4311

< < > >



REFRESH

Temp Pics - Google Docs | sales.csv - Google Drive | sales - Google Sheets | How to set up BigQuery.pptx | Approximate aggregate functions | Aggregate functions | Query results - BigQuery | Numbering functions | + | cloud.google.com/bigquery/docs/reference/standard-sql/approximate\_aggregate\_functions

Google Cloud Overview Solutions Products Pricing Resources Search Docs Support English Console Update

BigQuery Overview Guides Reference Samples Support Resources Contact Us Start free

Filter

BigQuery command-line tool  
bq command-line tool reference

SQL in BigQuery

GoogleSQL reference

- Query syntax
- General reference
- Expressions
- Functions
  - All functions and operators
  - AEAD encryption functions
  - Aggregate functions
  - Approximate aggregate functions
  - Array functions
  - Bit functions
  - Built-in table functions
  - Conversion functions
  - Date functions
  - Datetime functions
  - Debugging functions
  - Federated query functions
  - Geography functions

APPROX\_QUANTILES

```
APPROX_QUANTILES(  
    [ DISTINCT ]  
    expression, number  
    [ { IGNORE | RESPECT } NULLS ]  
)
```

Description

Returns the approximate boundaries for a group of `expression` values, where `number` represents the number of quantiles to create. This function returns an array of `number` + 1 elements, where the first element is the approximate minimum and the last element is the approximate maximum.

Returns `NULL` if there are zero input rows or `expression` evaluates to `NULL` for all rows.

To learn more about the optional aggregate clauses that you can pass into this function, see [Aggregate function calls](#).

Supported Argument Types

- `expression`: Any supported data type **except**:
  - ARRAY
  - STRUCT
  - IN

On this page

APPROX\_COUNT\_DISTINCT  
APPROX\_QUANTILES  
APPROX\_TOP\_COUNT  
APPROX\_TOP\_SUM

Start your Free Trial with \$300 in credit. Don't worry—you won't be charged if you run out of credits. [Learn more](#)

DISMISS

ACTIVATE

Google Cloud

customer-segmentation-373712

Search (/) for resources, docs, products, and more

Search



BigQuery

SANDBOX

Set up billing to upgrade to the full BigQuery experience. [Learn more](#)

DISMISS

UPGRADE

Analysis

SQL workspace

Data transfers

Scheduled queries

Analytics Hub

Dataform

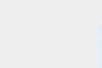
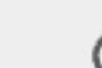
Partner Center

Migration

Assessment

SQL translation

Release Notes



Untitled 2

RUN

SAVE

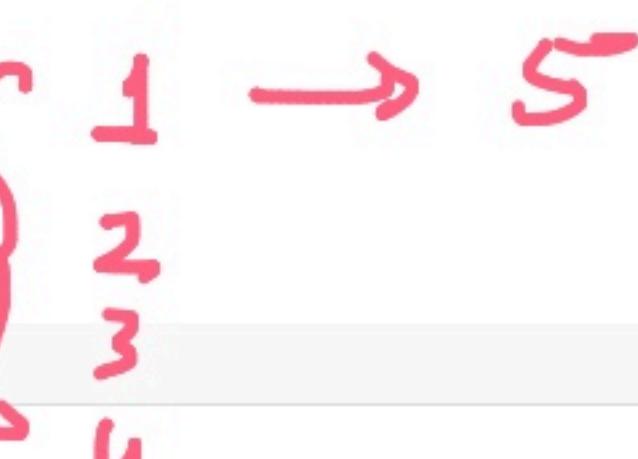
SHARE

SCHEDULE

MORE

```
1 select *, ntile(5) over(order by recency desc), ntile(5) over(order by frequency), ntile(5) over(order by monetary) from  
`retail.RFM`
```

2



Query results

JOB INFORMATION

RESULTS

JSON

EXECUTION DETAILS

EXECUTION GRAPH PREVIEW

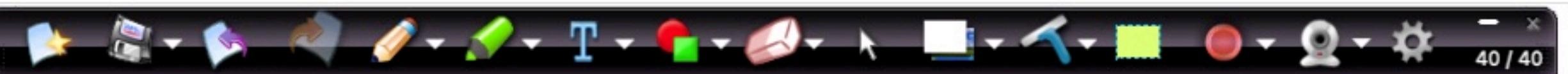
Row	num_purchases	monetary	reference_date	months_cust	recency	frequency	f0_	f1_	f2_
1	1	155.000000...	2011-12-10	1	8	1.0	5	4	1
2	1	234.0	2011-12-10	1	129	1.0	2	3	1

Results per page:

50

1 – 50 of 4311

< < > >



REFRESH



Temp Pics - Google Docs | sales.csv - Google Drive | sales - Google Sheets | How to set up BigQuery.p | Approximate aggregate fu | Aggregate functions | Big | Query results - BigQuery | Numbering functions | Big | + | console.cloud.google.com/bigquery?project=concise-flame-386113&supportedpurview=project&ws=!1m42!1m4!4m3!1sconcise-flame-386113!2sretail!3ssales!1m3!8m2!1s905284958743!2sd74f896b75464c2fa8670... | Update

Start your Free Trial with \$300 in credit. Don't worry—you won't be charged if you run out of credits. [Learn more](#)

DISMISS ACTIVATE

Google Cloud customer-segmentation-373712 Search (/) for resources, docs, products, and more Search

BigQuery SANDBOX Set up billing to upgrade to the full BigQuery experience. [Learn more](#)

Analysis SQL workspace Data transfers Scheduled queries Analytics Hub Dataform Partner Center

Migration Assessment SQL translation Release Notes

Analysis

SQL workspace

6

RUN SAVE SHARE SCHEDULE MORE

This query will process 303.12 KB when run.

```
11   c.percentiles[offset(0)] AS f0,
12   c.percentiles[offset(60)] AS f60,
13   c.percentiles[offset(80)] AS f80,
14   c.percentiles[offset(100)] AS f100,
--All percentiles for RECENTY
16   d.percentiles[offset(20)] AS r20,
17   d.percentiles[offset(40)] AS r40,
18   d.percentiles[offset(60)] AS r60,
19   d.percentiles[offset(80)] AS r80,
20   d.percentiles[offset(100)] AS r100
21 FROM
22   `concise-flame-386113.retail.RFM` a,
23   (SELECT APPROX_QUANTILES(monetary, 100) percentiles FROM
24   `concise-flame-386113.retail.RFM`) b,
25   (SELECT APPROX_QUANTILES(frequency, 100) percentiles FROM
26   `concise-flame-386113.retail.RFM`) c,
27   (SELECT APPROX_QUANTILES(recency, 100) percentiles FROM
28   `concise-flame-386113.retail.RFM`) d
```

Press Alt+F1 for Accessibility Options

Query results

SAVE RESULTS EXPLORE DATA REFRESH

P

41/41

Temp Pics - Google Docs | sales.csv - Google Drive | sales - Google Sheets | How to set up BigQuery.p | Approximate aggregate fu | Aggregate functions | Big | Query results - BigQuery | Numbering functions | Big | + | console.cloud.google.com/bigquery?project=concise-flame-386113&supportedpurview=project&ws=!1m42!1m4!4m3!1sconcise-flame-386113!2sretail!3ssales!1m3!8m2!1s905284958743!2sd74f896b75464c2fa8670... | Update

Start your Free Trial with \$300 in credit. Don't worry—you won't be charged if you run out of credits. [Learn more](#)

DISMISS ACTIVATE

Google Cloud customer-segmentation-373712 Search (/) for resources, docs, products, and more Search

BigQuery SANDBOX Set up billing to upgrade to the full BigQuery experience. [Learn more](#)

Analysis SQL workspace Data transfers Scheduled queries Analytics Hub Dataform Partner Center

Migration Assessment SQL translation Release Notes

Analysis

SQL workspace

6

RUN SAVE SHARE SCHEDULE MORE

This query will process 303.12 KB when run.

```
11   c.percentiles[offset(0)] AS f0,
12   c.percentiles[offset(60)] AS f60,
13   c.percentiles[offset(80)] AS f80,
14   c.percentiles[offset(100)] AS f100,
--All percentiles for RECENTY
16   d.percentiles[offset(20)] AS r20,
17   d.percentiles[offset(40)] AS r40,
18   d.percentiles[offset(60)] AS r60,
19   d.percentiles[offset(80)] AS r80,
20   d.percentiles[offset(100)] AS r100
21 FROM
22   `concise-flame-386113.retail.RFM` a,
23   (SELECT APPROX_QUANTILES(monetary, 100) percentiles FROM
24   `concise-flame-386113.retail.RFM` ) b,
25   (SELECT APPROX_QUANTILES(frequency, 100) percentiles FROM
26   `concise-flame-386113.retail.RFM` ) c,
27   (SELECT APPROX_QUANTILES(recency, 100) percentiles FROM
28   `concise-flame-386113.retail.RFM` ) d
```

Press Alt+F1 for Accessibility Options

Query results

SAVE RESULTS EXPLORE DATA REFRESH

P

42 / 42

Temp Pics - Google Docs | sales.csv - Google Drive | sales - Google Sheets | How to set up BigQuery.p | Approximate aggregate fu | Aggregate functions | Big | Query results - BigQuery | Numbering functions | Big | + | console.cloud.google.com/bigquery?project=concise-flame-386113&supportedpurview=project&ws=!1m42!1m4!4m3!1sconcise-flame-386113!2sretail!3ssales!1m3!8m2!1s905284958743!2sd74f896b75464c2fa8670... | Update

Start your Free Trial with \$300 in credit. Don't worry—you won't be charged if you run out of credits. [Learn more](#)

DISMISS ACTIVATE

Google Cloud customer-segmentation-373712 Search (/) for resources, docs, products, and more Search

BigQuery SANDBOX Set up billing to upgrade to the full BigQuery experience. [Learn more](#)

Analysis SQL workspace Data transfers Scheduled queries Analytics Hub Dataform Partner Center

Migration Assessment SQL translation Release Notes

Analysis

SQL workspace

6

SELECT  
--All percentiles for MONETARY  
b.percentiles[offset(20)] AS m20,  
b.percentiles[offset(40)] AS m40,  
b.percentiles[offset(60)] AS m60,  
b.percentiles[offset(80)] AS m80,  
b.percentiles[offset(100)] AS m100,  
--All percentiles for FREQUENCY  
c.percentiles[offset(20)] AS f20,  
c.percentiles[offset(40)] AS f40,  
c.percentiles[offset(60)] AS f60,  
c.percentiles[offset(80)] AS f80,  
c.percentiles[offset(100)] AS f100,  
--All percentiles for RECENCY  
d.percentiles[offset(20)] AS r20,  
d.percentiles[offset(40)] AS r40,  
d.percentiles[offset(60)] AS r60

This query will process 303.12 KB when run.

RUN SAVE SHARE SCHEDULE MORE

Press Alt+F1 for Accessibility Options

Query results

SAVE RESULTS EXPLORE DATA REFRESH

P

43 / 43

Temp Pics - Google Docs | sales.csv - Google Drive | sales - Google Sheets | How to set up BigQuery.p | Approximate aggregate fu | Aggregate functions | Big | Query results - BigQuery | Numbering functions | Big | + | console.cloud.google.com/bigquery?project=concise-flame-386113&supportedpurview=project&ws=!1m42!1m4!4m3!1sconcise-flame-386113!2sretail!3ssales!1m3!8m2!1s905284958743!2sd74f896b75464c2fa8670... | Update

Start your Free Trial with \$300 in credit. Don't worry—you won't be charged if you run out of credits. [Learn more](#)

DISMISS ACTIVATE

Google Cloud customer-segmentation-373712 Search (/) for resources, docs, products, and more Search

BigQuery SANDBOX Set up billing to upgrade to the full BigQuery experience. [Learn more](#)

DISMISS UPGRADE

Analysis SQL workspace Data transfers Scheduled queries Analytics Hub Dataform Partner Center

Migration Assessment SQL translation Release Notes

Analysis

SQL workspace

7 RUN SAVE SHARE SCHEDULE MORE

```
1 SELECT CustomerID,
2 m_score,r_score,
3 recency, frequency,monetary,
4 CAST(ROUND((f_score + m_score) / 2, 0) AS INT64) AS fm_score
5 FROM (
6     SELECT *,
7         CASE WHEN monetary <= m20 THEN 1
8             WHEN monetary <= m40 AND monetary > m20 THEN 2
9             WHEN monetary <= m60 AND monetary > m40 THEN 3
10            WHEN monetary <= m80 AND monetary > m60 THEN 4
11            WHEN monetary <= m100 AND monetary > m80 THEN 5
12        END AS m_score,
13        CASE WHEN frequency <= f20 THEN 1
14            WHEN frequency <= f40 AND frequency > f20 THEN 2
15            WHEN frequency <= f60 AND frequency > f40 THEN 3
16            WHEN frequency <= f80 AND frequency > f60 THEN 4
17            WHEN frequency <= f100 AND frequency > f80 THEN 5
18        END AS f_score
19    )
```

Press Alt+F1 for Accessibility Options

Query results

SAVE RESULTS EXPLORE DATA REFRESH

P 44 / 44



Start your Free Trial with \$300 in credit. Don't worry—you won't be charged if you run out of credits. [Learn more](#)

[DISMISS](#)

[ACTIVATE](#)

Google Cloud

customer-segmentation-373712 ▾

Search (/) for resources, docs, products, and more

Search



BigQuery

SANDBOX

Set up billing to upgrade to the full BigQuery experience. [Learn more](#)

FM

[DISMISS](#)

[UPGRADE](#)

Analysis



< ▶ X Q 2 X Q 3 X Q 4 X Q 5 X Q 6 X Q 7 X Q 8 X Q \*Untitled 2 X > + :

SQL workspace

Q 7 RUN SAVE SHARE SCHEDULE MORE

```
1 SELECT CustomerID,  
2 m_score,f_score,r_score,
```

Press Alt+F1 for Accessibility Options

Data transfers

Scheduled queries

Analytics Hub

Dataform

Partner Center

Migration

Assessment

SQL translation

Release Notes

Query results

SAVE RESULTS

EXPLORE DATA

JOB INFORMATION

RESULTS

JSON

EXECUTION DETAILS

EXECUTION GRAPH PREVIEW

Row	CustomerID	m_score	f_score	r_score	recency	frequency	monetary	fm_score
1	14920.0	4	5	1	213	2.0	24022.1800...	5
2	18048.0	1	5	1	204	2.0	1014.74	3
3	16832.0	1	5	1	204	2.0	339.900000...	3
4	14009.0	3	5	1	199	2.0	14202.7400...	4
5	15897.0	2	5	1	195	2.0	2560.38	4
6	17900.0	1	5	1	191	2.0	259.2	3
7	15508.0	3	5	1	190	2.0	14416.9800...	4

Results per page:

50

1 – 50 of 4311

< < > >



REFRESH

Temp Pics - Google Docs | sales.csv - Google Drive | sales - Google Sheets | How to set up BigQuery.p | Approximate aggregate fu | Aggregate functions | Big | Query results - BigQuery | Numbering functions | Big | + | console.cloud.google.com/bigquery?project=concise-flame-386113&supportedpurview=project&ws=!1m42!1m4!4m3!1sconcise-flame-386113!2sretail!3ssales!1m3!8m2!1s905284958743!2sd74f896b75464c2fa8670... | Update

Start your Free Trial with \$300 in credit. Don't worry—you won't be charged if you run out of credits. [Learn more](#)

DISMISS ACTIVATE

Google Cloud customer-segmentation-373712 Search (/) for resources, docs, products, and more Search

BigQuery SANDBOX Set up billing to upgrade to the full BigQuery experience. [Learn more](#)

DISMISS UPGRADE

Analysis

SQL workspace

Data transfers

Scheduled queries

Analytics Hub

Dataform

Partner Center

Migration

Assessment

SQL translation

Release Notes

Analysis

SQL workspace

7

RUN SAVE SHARE SCHEDULE MORE

1 SELECT CustomerID,  
2 m\_score, f\_score, r\_score,

Press Alt+F1 for Accessibility Options

Query results

SAVE RESULTS EXPLORE DATA

JOB INFORMATION RESULTS JSON EXECUTION DETAILS EXECUTION GRAPH PREVIEW

Row	CustomerID	m_score	f_score	r_score	recency	frequency	monetary	fm_score
1	14920.0	4	5	1	213	2.0	24022.1800...	5
2	18048.0	1	5	1	204	2.0	1014.74	3
3	16832.0	1	5	1	204	2.0	339.900000...	3
4	14009.0	3	5	1	199	2.0	14202.7400...	4
5	15897.0	2	5	1	195	2.0	2560.38	4
6	17900.0	1	5	1	191	2.0	259.2	3
7	15508.0	3	5	1	190	2.0	14416.9800...	4

Results per page: 50 1 – 50 of 4311

P REFRESH

(Q) do we need to remove outliers before RFM analysis



Yes

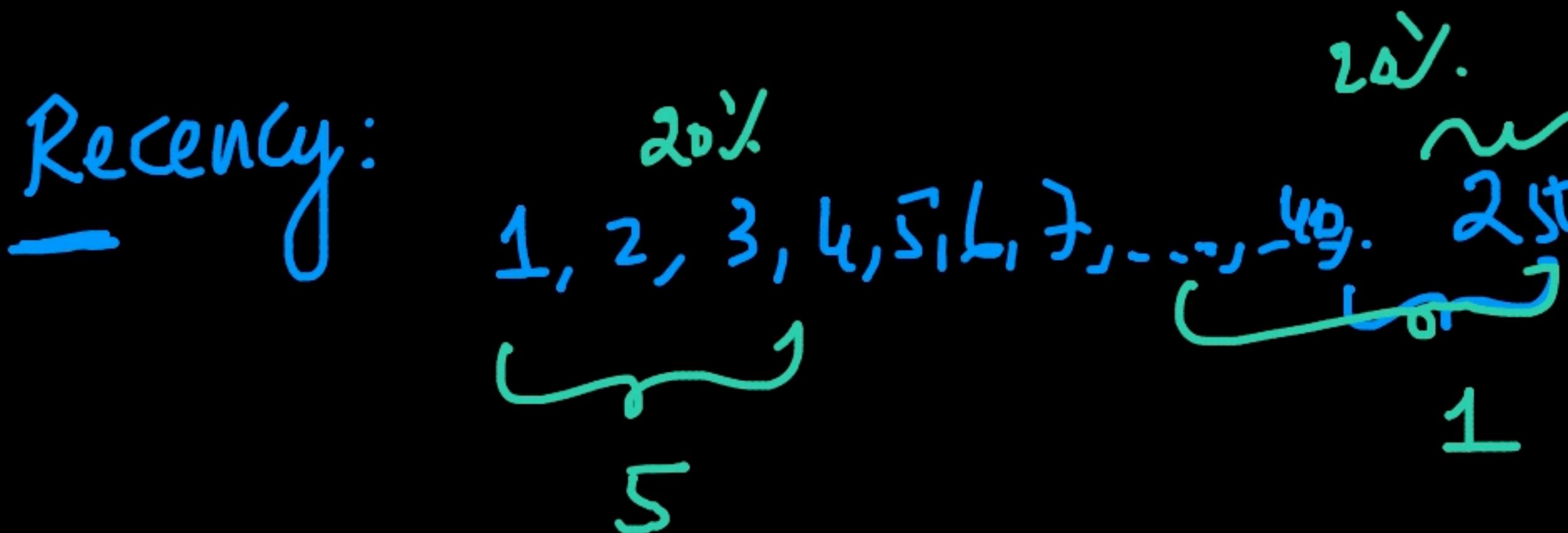
;

No



-if 20-30% data  
is outliers

-if the %age of outliers  
is small







Start your Free Trial with \$300 in credit. Don't worry—you won't be charged if you run out of credits. [Learn more](#)

[DISMISS](#)

[ACTIVATE](#)

Google Cloud

customer-segmentation-373712

Search (/) for resources, docs, products, and more

Search



BigQuery

SANDBOX

Set up billing to upgrade to the full BigQuery experience. [Learn more](#)

[DISMISS](#)

[UPGRADE](#)

Analysis

SQL workspace

Data transfers

Scheduled queries

Analytics Hub

Dataform

Partner Center

Migration

Assessment

SQL translation

Release Notes

1 SELECT CustomerID,  
2 m\_score,f\_score,r\_score,  
3 recency,frequency,monetary,  
4 CAST(ROUND((f\_score + m\_score) / 2, 0) AS INT64) AS fm\_score  
5 FROM (  
6 SELECT \*,  
7 CASE WHEN monetary <= m20 THEN 1  
8 WHEN monetary <= m40 AND monetary > m20 THEN 2  
9 WHEN monetary <= m60 AND monetary > m40 THEN 3  
10 WHEN monetary <= m80 AND monetary > m60 THEN 4  
11 WHEN monetary <= m100 AND monetary > m80 THEN 5  
12 END AS m\_score,  
13 CASE WHEN frequency <= f20 THEN 1  
14 WHEN frequency <= f40 AND frequency > f20 THEN 2  
15 WHEN frequency <= f60 AND frequency > f40 THEN 3  
16 WHEN frequency <= f80 AND frequency > f60 THEN 4

$$(4+5)/2 = 4.5$$

5.0  
CAST  
5

Press Alt+F1 for Accessibility Options

Query results

SAVE RESULTS

EXPLORE DATA

JOB INFORMATION

RESULTS

JSON

EXECUTION DETAILS

EXECUTION GRAPH PREVIEW



REFRESH



Start your Free Trial with \$300 in credit. Don't worry—you won't be charged if you run out of credits. [Learn more](#)

[DISMISS](#)

[ACTIVATE](#)

Google Cloud

customer-segmentation-373712 ▾

Search (/) for resources, docs, products, and more

Search



BigQuery

SANDBOX

Set up billing to upgrade to the full BigQuery experience. [Learn more](#)

[DISMISS](#)

[UPGRADE](#)

Analysis



SQL workspace

Data transfers

Scheduled queries

Analytics Hub

Dataform

Partner Center

Migration



Assessment

SQL translation

Release Notes



7

RUN

SAVE

SHARE

SCHEDULE

MORE

13

```
CASE WHEN frequency <= f20 THEN 1
      WHEN frequency <= f40 AND frequency > f20 THEN 2
      WHEN frequency <= f60 AND frequency > f40 THEN 3
      WHEN frequency <= f80 AND frequency > f60 THEN 4
      WHEN frequency <= f100 AND frequency > f80 THEN 5
END AS f_score,
--Recency scoring is reversed
CASE WHEN recency <= r20 THEN 5
      WHEN recency <= r40 AND recency > r20 THEN 4
      WHEN recency <= r60 AND recency > r40 THEN 3
      WHEN recency <= r80 AND recency > r60 THEN 2
      WHEN recency <= r100 AND recency > r80 THEN 1
END AS r_score,
FROM `concise-flame-386113.retail.Quintiles`
```

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

Press Alt+F1 for Accessibility Options

Query results

SAVE RESULTS

EXPLORE DATA



JOB INFORMATION

RESULTS

JSON

EXECUTION DETAILS

EXECUTION GRAPH PREVIEW



REFRESH

