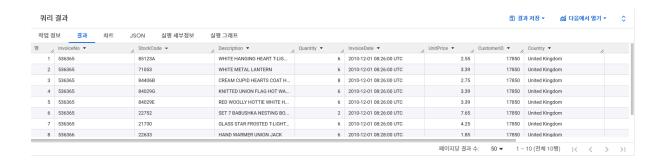
### RFM분석

- 1. 데이터 불러오기
- 데이터 불러오기(10개)

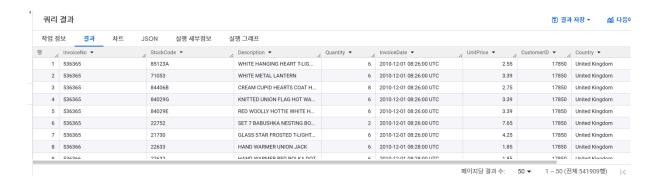
#### **SELECT** \*

FROM coral-mechanism-464902-i4.modulabs\_project.data LIMIT 10



#### **SELECT** \*

FROM coral-mechanism-464902-i4.modulabs\_project.data



• 데이터 수 세기

SELECT COUNT(InvoiceNo) AS COUNT\_InvoiceNo, COUNT(StockCode) AS C COUNT(Quantity) AS COUNT\_Quantity, COUNT(InvoiceDate) AS COUNT\_

### COUNT (CustomerID) AS COUNT\_CustomerID, COUNT (Country) AS COUNTROM coral-mechanism-464902-i4.modulabs\_project.data



- 2. 데이터 전처리-결측치
- 데이터 전처리-결측치 제거
  - 。 송장번호 결측치 비율 계산



。 전체 결측치 비율 계산

```
SELECT

'InvoiceNo' AS column_name,

ROUND(SUM(CASE WHEN InvoiceNo IS NULL THEN 1 ELSE 0 END) / CO
FROM coral-mechanism-464902-i4.modulabs_project.data

UNION ALL

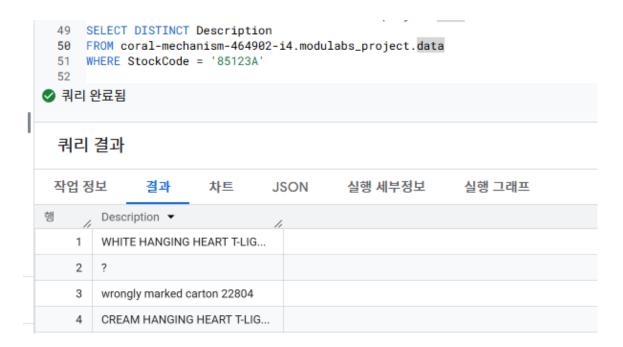
SELECT

'StockCode' AS column_name,
```

```
ROUND(SUM(CASE WHEN StockCode IS NULL THEN 1 ELSE 0 END) / C
FROM coral-mechanism-464902-i4 modulabs_project.data
UNION ALL
SELECT
  'Description' AS column_name,
  ROUND(SUM(CASE WHEN Description IS NULL THEN 1 ELSE 0 END) / (
FROM coral-mechanism-464902-i4 modulabs_project.data
UNION ALL
SELECT
  'Quantity' AS column_name,
  ROUND(SUM(CASE WHEN Quantity IS NULL THEN 1 ELSE 0 END) / COL
FROM coral-mechanism-464902-i4 modulabs_project.data
UNION ALL
SELECT
  'InvoiceDate' AS column_name,
  ROUND(SUM(CASE WHEN InvoiceDate IS NULL THEN 1 ELSE 0 END) / (
FROM coral-mechanism-464902-i4 modulabs_project.data
UNION ALL
SELECT
  'UnitPrice' AS column_name,
  ROUND(SUM(CASE WHEN UnitPrice IS NULL THEN 1 ELSE 0 END) / CO
FROM coral-mechanism-464902-i4 modulabs_project.data
UNION ALL
SELECT
  'CustomerID' AS column_name,
  ROUND(SUM(CASE WHEN CustomerID IS NULL THEN 1 ELSE 0 END) / (
FROM coral-mechanism-464902-i4 modulabs_project.data
UNION ALL
SELECT
  'Country' AS column_name,
  ROUND(SUM(CASE WHEN Country IS NULL THEN 1 ELSE 0 END) / COL
FROM coral-mechanism-464902-i4.modulabs_project.data
```

쿼리	결과		
작업 정	병보 결과 차트 J	SON 실행 세부정보	실행 그래프
행 //	column_name ▼	missing_percenta	
1	CustomerID	24.93	
2	Country	0.0	
3	Quantity	0.0	
4	InvoiceNo	0.0	
5	StockCode	0.0	
6	Description	0.27	
7	InvoiceDate	0.0	
8	UnitPrice	0.0	

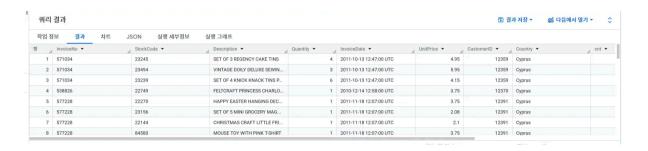
#### 。 결측치 처리 전략



#### 。 결측치 제거

- 3. 데이터 전처리-중복값
- 데이터 전처리-중복값 처리

SELECT InvoiceNo, StockCode, Description, Quantity, InvoiceDate, UnitPrice, FROM coral-mechanism-464902-i4.modulabs\_project.data
GROUP BY InvoiceNo, StockCode, Description, Quantity, InvoiceDate, UnitPric HAVING cnt > 1



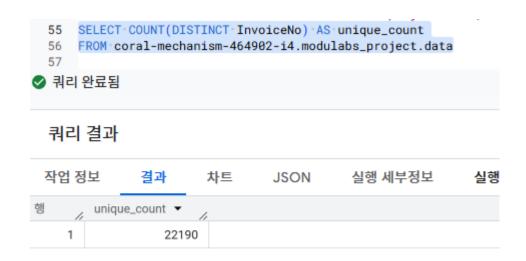
• 중복 제거한 값으로 대체하기

```
52 CREATE OR REPLACE TABLE coral-mechanism-464902-i4.modulabs_project.data AS
53 SELECT DISTINCT *
54 FROM coral-mechanism-464902-i4.modulabs_project.data;
55 ▷ 쿼리 완료됨
```



#### 4.데이터 전처리-오류값

• 데이터 전처리-오류값 처리



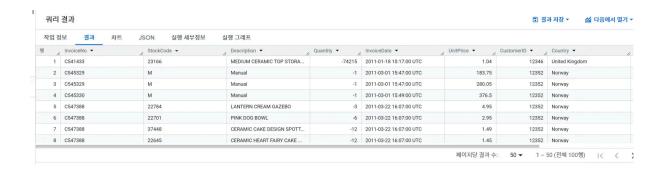
• 고유값 100개 출력

SELECT DISTINCT InvoiceNo AS unique\_value FROM coral-mechanism-464902-i4.modulabs\_project.data LIMIT 100

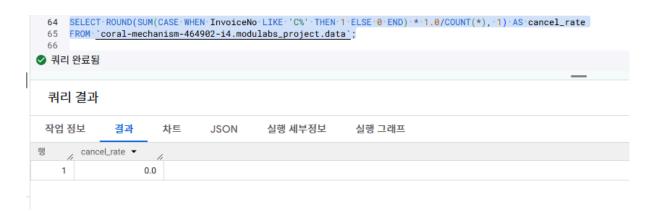


• C로 시작하는 행 필터링하고 100행 출력하기

# SELECT \* FROM coral-mechanism-464902-i4.modulabs\_project.data WHERE InvoiceNo LIKE 'C%' LIMIT 100

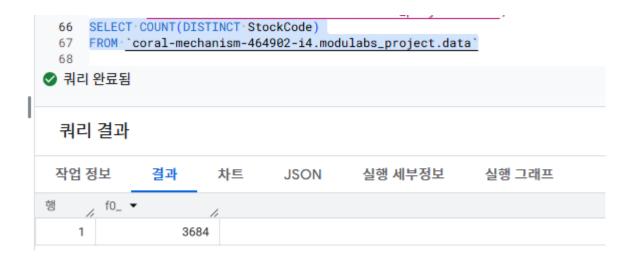


• 취소 비율 구하기



• StockCode 살펴보기

REM분석 7



#### • stockcode별 등장빈도

SELECT StockCode, COUNT(\*) AS sell\_cnt
FROM `coral-mechanism-464902-i4.modulabs\_project.data`
GROUP BY StockCode
ORDER BY sell\_cnt DESC
LIMIT 10

Тт	123
StockCod∈=	sell_cnt =
85123A	2065
22423	1894
85099B	1659
47566	1409
84879	1405
20725	1346
22720	1224
POST	1196
22197	1110
23203	1108

• 주식 코드 내 문자열 숫자의 길이

```
WITH UniqueStockCodes AS (
SELECT DISTINCT StockCode
FROM `coral-mechanism-464902-i4.modulabs_project.data`
)
SELECT
LENGTH(StockCode) - LENGTH(REGEXP_REPLACE(StockCode, r'[0-9]', '')) /
COUNT(*) AS stock_cnt
FROM UniqueStockCodes
GROUP BY number_count
ORDER BY stock_cnt DESC;
```



• 숫자가 0~1개인 값

```
SELECT DISTINCT StockCode, number_count
FROM (
SELECT StockCode,
LENGTH(StockCode) - LENGTH(REGEXP_REPLACE(StockCode, r'[0-9]', ''))
FROM `coral-mechanism-464902-i4.modulabs_project.data`
)
WHERE number_count=0
OR number_count=1
```



자어 기로

• 숫자가 0~1개인 값 비율

```
SELECT
ROUND(
 (SUM(CASE WHEN number_count = 0 THEN 1 ELSE 0 END)
  + SUM(CASE WHEN number_count = 1 THEN 1 ELSE 0 END))
 * 1.0 / COUNT(*),
  2
) AS zero_or_one_ratio
FROM (
 SELECT
  StockCode,
 -- 숫자를 제거한 길이를 빼서 숫자 개수를 계산하고, 별칭 붙이기
 LENGTH(StockCode)
  - LENGTH(REGEXP_REPLACE(StockCode, r'[0-9]', ''))
 AS number_count
 FROM
  `coral-mechanism-464902-i4.modulabs_project.data`
```



• 제품과 관련없는 코드 삭제

```
DELETE FROM `coral-mechanism-464902-i4.modulabs_project.data`
WHERE StockCode IN (
SELECT DISTINCT StockCode
FROM ( SELECT StockCode,
    LENGTH(StockCode) - LENGTH(REGEXP_REPLACE(StockCode, r'[0-9]', ''))
FROM `coral-mechanism-464902-i4.modulabs_project.data`)
WHERE number_count IN (0, 1))
```

```
    쿼리 결과
    실행 세부정보
    실행 그래프

    ● 이 문으로 data의 행 1,915개가 삭제되었습니다.
```

- description 살펴보기
- description별 출현 빈도

```
106 SELECT DISTINCT Description, COUNT(*) AS description_cnt
107 FROM Coral-mechanism-464902-i4.modulabs_project.data
108 GROUP BY Description
109 LIMIT 30

☑ 쿼리 완료됨
```

Tr	123
Description =	description =
MEDIUM CERAMIC TOP STORAGE JAR	208
3D DOG PICTURE PLAYING CARDS	61
ALARM CLOCK BAKELIKE GREEN	819
LARGE HEART MEASURING SPOONS	226
BOX OF 6 ASSORTED COLOUR TEASPOONS	75
PINK 3 PIECE POLKADOT CUTLERY SET	103
SET OF 2 TINS VINTAGE BATHROOM	59
ALARM CLOCK BAKELIKE ORANGE	382
BOOM BOX SPEAKER BOYS	56
BATHROOM METAL SIGN	60
RED TOADSTOOL LED NIGHT LIGHT	539
FOUR HOOK WHITE LOVEBIRDS	265
BLUE DRAWER KNOB ACRYLIC EDWARDIAN	124
CLEAR DRAWER KNOB ACRYLIC EDWARDIAN	331
RED 3 PIECE RETROSPOT CUTLERY SET	100
ALARM CLOCK BAKELIKE CHOCOLATE	339
BLACK CANDELABRA T-LIGHT HOLDER	40
PURPLE DRAWERKNOB ACRYLIC EDWARDIAN	151
SET/3 DECOUPAGE STACKING TINS	54
BLACK EAR MUFF HEADPHONES	18
RED DRAWER KNOB ACRYLIC EDWARDIAN	101
BLACK GRAND BAROQUE PHOTO FRAME	7
MINI PAINT SET VINTAGE	335
ALARM CLOCK BAKELIKE PINK	636
EMERGENCY FIRST AID TIN	126
GREEN DRAWER KNOB ACRYLIC EDWARDIAN	149
BLUE 3 PIECE POLKADOT CUTLERY SET	97
ALARM CLOCK BAKELIKE RED	917
CAMOUFLAGE EAR MUFF HEADPHONES	17
COLOUR GLASS. STAR T-LIGHT HOLDER	247

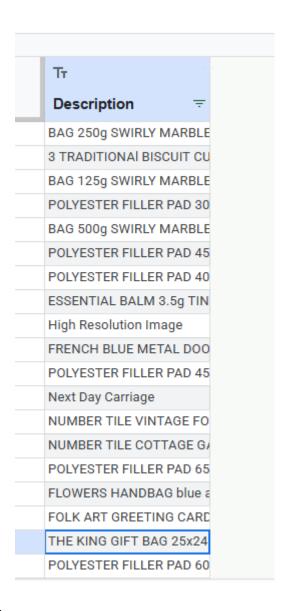
#### • 대소문자 혼합

- 111 SELECT DISTINCT Description
- FROM `coral-mechanism-464902-i4.modulabs\_project.data`

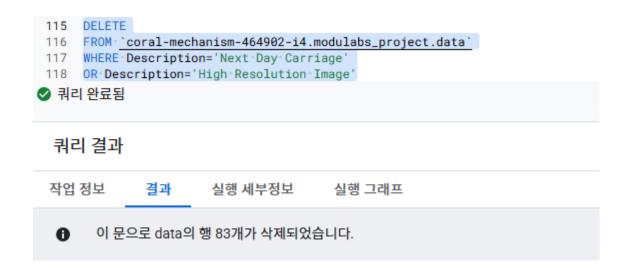
  WHERE REGEXP\_CONTAINS(Description, r'[a-z]');

#### 🄰 쿼리 완료됨





• 서비스 관련 행 제거



• 대소문자 혼합 데이터 대문자 전환

```
120 CREATE OR REPLACE TABLE 'coral-mechanism-464902-i4.modulabs_project.data' AS

121 SELECT
122 - ** EXCEPT (Description),
123 ** UPPER(Description) ** AS ** Description
124 FROM 'coral-mechanism-464902-i4.modulabs_project.data'

② 쿼리 완료됨
```

스키마	세부정보 미리보기	테이블 탐색기 프리뷰	통계 계보	데이터 프로	필 데이터	품질			
행 //	InvoiceNo	StockCode //	Description	//	Quantity //	InvoiceDate	UnitPrice //	CustomerID //	Country
1	541431	23166	MEDIUM CERAMIC	TOP STORA	74215	2011-01-18 10:01:00 UTC	1.04	12346	United Kingdom
2	C541433	23166	MEDIUM CERAMIC	TOP STORA	-74215	2011-01-18 10:17:00 UTC	1.04	12346	United Kingdom
3	537626	22195	LARGE HEART MEA	SURING SP	12	2010-12-07 14:57:00 UTC	1.65	12347	Iceland
4	537626	22497	SET OF 2 TINS VINT	AGE BATHR	4	2010-12-07 14:57:00 UTC	4.25	12347	Iceland
5	537626	20782	CAMOUFLAGE EAR	MUFF HEA	6	2010-12-07 14:57:00 UTC	5.49	12347	Iceland
6	537626	84558A	3D DOG PICTURE P	AYING CAR	24	2010-12-07 14:57:00 UTC	2.95	12347	Iceland
7	537626	84969	BOX OF 6 ASSORTE	D COLOUR T	6	2010-12-07 14:57:00 UTC	4.25	12347	Iceland
8	537626	22805	BLUE DRAWER KNO	B ACRYLIC	12	2010-12-07 14:57:00 UTC	1.25	12347	Iceland
9	537626	22492	MINI PAINT SET VIN	ITAGE	36	2010-12-07 14:57:00 UTC	0.65	12347	Iceland
10	537626	21064	BOOM BOX SPEAKE	R BOYS	6	2010-12-07 14:57:00 UTC	5.95	12347	Iceland
11	537626	22775	PURPLE DRAWERK	NOB ACRYLI	12	2010-12-07 14:57:00 UTC	1.25	12347	Iceland
12	537626	22725	ALARM CLOCK BAK	ELIKE CHO	4	2010-12-07 14:57:00 UTC	3.75	12347	Iceland
13	537626	84997C	BLUE 3 PIECE POLK	ADOT CUTL	6	2010-12-07 14:57:00 UTC	3.75	12347	Iceland
14	537626	22726	ALARM CLOCK BAK	ELIKE GREEN	4	2010-12-07 14:57:00 UTC	3.75	12347	Iceland
15	537626	71477	COLOUR GLASS. ST	AR T-LIGHT	12	2010-12-07 14:57:00 UTC	3.25	12347	Iceland
16	537626	22774	RED DRAWER KNOE	ACRYLIC E	12	2010-12-07 14:57:00 UTC	1.25	12347	Iceland
17	537626	21731	RED TOADSTOOL LI	D NIGHT LI	12	2010-12-07 14:57:00 UTC	1.65	12347	Iceland
18	537626	22773	GREEN DRAWER KN	IOB ACRYLI	12	2010-12-07 14:57:00 UTC	1.25	12347	Iceland
19	537626	22728	ALARM CLOCK BAK	ELIKE PINK	4	2010-12-07 14:57:00 UTC	3.75	12347	Iceland
20	537626	21171	BATHROOM METAL	SIGN	12	2010-12-07 14:57:00 UTC	1.45	12347	Iceland
21	537626	22212	FOUR HOOK WHITE	LOVEBIRDS	6	2010-12-07 14:57:00 UTC	2.1	12347	Iceland

#### • UnitPrice 살펴보기

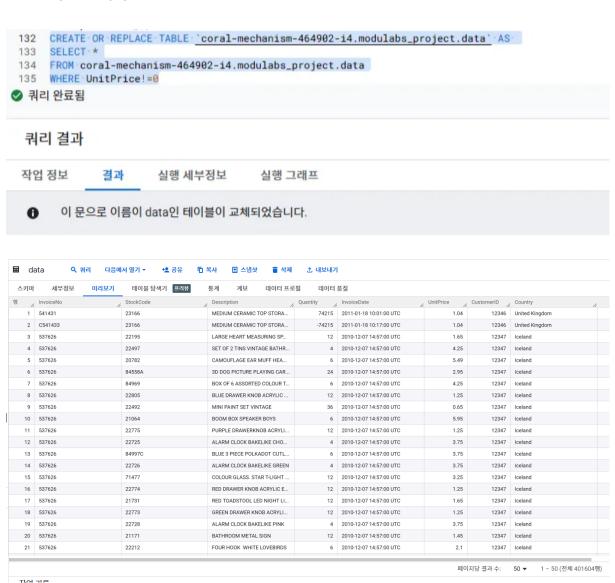
```
126 SELECT MIN(UnitPrice) AS min_price, MAX(UnitPrice) AS max_price, AVG(UnitPrice) AS avg_price
 127 FROM `coral-mechanism-464902-i4.modulabs_project.data`
128 -- SELECT COUNT(InvoiceNo) AS cnt_quantity, MIN(Quantity) AS min_quantity, MAX(Quantity) AS ma
129 -- FROM `coral-mechanism-464902-i4.modulabs_project.data`
130 -- WHERE UnitPrice=0:
☑ 쿼리 완료됨
  쿼리 결과
 작업 정보
              결과
                       차트
                                JSON
                                           실행 세부정보
                                                            실행 그래프
                      __ max_price ▼
    / min_price ▼
                                    ___avg_price ▼
    1
                    0.0
                                   649.5 2.904956757405...
```

• 단가가 0원인 거래 개수, 구매수량의 최소값, 최대값, 평균

SELECT COUNT(InvoiceNo) AS cnt\_quantity, MIN(Quantity) AS min\_quantity, FROM `coral-mechanism-464902-i4.modulabs\_project.data` WHERE UnitPrice=0;

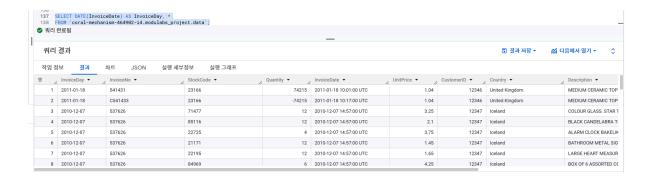


#### • 단가 0원 제거



#### 5.RFM 스코어

- RECENCY
  - 。 INVOICENO 연월일 자료형으로 변환



	Тт	Тт	123	Ü	123	123	Tr	Tī
InvoiceDa <sub>!</sub> =	InvoiceNo =	StockCode =	Quantity =	InvoiceDat <del>=</del>	UnitPrice =	Customerl =	Country =	Descriptio =
2011. 1. 18	541431	23166	74215	2011. 1. 18 오전	1.04	12346	United Kingdom	MEDIUM CERAN
2011. 1. 18	C541433	23166	-74215	2011. 1. 18 오전	1.04	12346	United Kingdom	MEDIUM CERAN
2010. 12. 7	537626	71477	12	2010. 12. 7 오후	3.25	12347	Iceland	COLOUR GLASS.
2010. 12. 7	537626	85116	12	2010. 12. 7 오후	2.1	12347	Iceland	BLACK CANDEL
2010. 12. 7	537626	22725	4	2010. 12. 7 오후	3.75	12347	Iceland	ALARM CLOCK E
2010. 12. 7	537626	21171	12	2010. 12. 7 오후	1.45	12347	Iceland	BATHROOM ME
2010. 12. 7	537626	22195	12	2010. 12. 7 오후	1.65	12347	Iceland	LARGE HEART N
2010. 12. 7	537626	84969	6	2010. 12. 7 오후	4.25	12347	Iceland	BOX OF 6 ASSOF
2010. 12. 7	537626	22727	4	2010. 12. 7 오후	3.75	12347	Iceland	ALARM CLOCK E
2010. 12. 7	537626	22805	12	2010. 12. 7 오후	1.25	12347	Iceland	BLUE DRAWER K
2010. 12. 7	537626	22726	4	2010. 12. 7 오후	3.75	12347	Iceland	ALARM CLOCK E
2010. 12. 7	537626	84997B	6	2010. 12. 7 오후	3.75	12347	Iceland	RED 3 PIECE RET
2010. 12. 7	537626	20780	12	2010. 12. 7 오후	4.65	12347	Iceland	BLACK EAR MUF
2010. 12. 7	537626	22773	12	2010. 12. 7 오후	1.25	12347	Iceland	GREEN DRAWER
2010. 12. 7	537626	22375	4	2010. 12. 7 오후	4.25	12347	Iceland	AIRLINE BAG VII
2010. 12. 7	537626	85232D	3	2010. 12. 7 오후	4.95	12347	Iceland	SET/3 DECOUPA
2010. 12. 7	537626	84997D	6	2010. 12. 7 오후	3.75	12347	Iceland	PINK 3 PIECE PO
2010. 12. 7	537626	22212	6	2010. 12. 7 오후	2.1	12347	Iceland	FOUR HOOK WE
2010. 12. 7	537626	22774	12	2010. 12. 7 오후	1.25	12347	Iceland	RED DRAWER KN
2010. 12. 7	537626	21731	12	2010. 12. 7 오후	1.65	12347	Iceland	RED TOADSTOO
<b>2</b> 7. 12. 7	537626	84997C	6	2010. 12. 7 오후	3.75	12347	Iceland	BLUE 3 PIECE PO
J. 12. 7	537626	22492	36	2010. 12. 7 오후	0.65	12347	Iceland	MINI PAINT SET
2010 12 7	537626	21064	6	2010 12 7 오흐	5 95	12347	Iceland	ROOM ROX SPE

#### • 최근 구매일자

```
WITH days AS (
SELECT
DATE(InvoiceDate) AS InvoiceDay
FROM
`coral-mechanism-464902-i4.modulabs_project.data`
)
SELECT
MAX(InvoiceDay) AS most_recent_date
FROM
days;
```



• 유저별 최근 구매일자

```
SELECT CustomerID,MAX(DATE(InvoiceDate)) AS InvoiceDay FROM `coral-mechanism-464902-i4.modulabs_project.data` GROUP BY CustomerID
```



• 가장 최근 구매일자와 유저별 최근 구매일자 차이

```
SELECT
CustomerID,
EXTRACT(DAY FROM MAX(InvoiceDay) OVER () - InvoiceDay) AS recency
FROM (
SELECT
CustomerID,
MAX(DATE(InvoiceDate)) AS InvoiceDay
FROM `coral-mechanism-464902-i4.modulabs_project.data`
GROUP BY CustomerID
);
```



• 최종 데이터셋에 필요한 데이터 이어붙이기, user\_r 생성

```
CREATE OR REPLACE TABLE coral-mechanism-464902-i4.modulabs_project.

SELECT
CustomerID,
EXTRACT(DAY FROM MAX(InvoiceDay) OVER () - InvoiceDay) AS recency

FROM (
SELECT
CustomerID,
MAX(DATE(InvoiceDate)) AS InvoiceDay

FROM coral-mechanism-464902-i4.modulabs_project.data

GROUP BY CustomerID
);
```



123	123
Customerl =	recency =
14441	0
17315	0
16626	0
14397	0
16446	0
15344	0
15311	0
12985	0
17490	0
13113	0
12433	0
12518	0
15910	0
17001	0
12526	0
13426	0
17754	0
17389	0
12680	0
17428	0
C 16705	0
16954	0
15804	n
+ ≡	⊜ user_r ▼

- Frequency
- 전체 거래건수 계산

#### **SELECT**

CustomerID,

COUNT(DISTINCT InvoiceNo) AS purchase\_cnt FROM coral-mechanism-464902-i4.modulabs\_project.data GROUP BY CustomerID



• 구매한 아이템의 총 수량 계산

```
SELECT
CustomerID,
SUM(Quantity) AS item_cnt
FROM coral-mechanism-464902-i4.modulabs_project.data
GROUP BY CustomerID
```



• 전체 거래건수, 구매 아이템 총수량 합쳐 새 테이블 생성

```
CREATE OR REPLACE TABLE coral-mechanism-464902-i4.modulabs_project.

-- (1) 전체 거래 건수 계산
WITH purchase_cnt AS (
    SELECT
    CustomerID,
    COUNT(DISTINCT InvoiceNo) AS purchase_cnt
FROM coral-mechanism-464902-i4.modulabs_project.data
GROUP BY CustomerID
),

-- (2) 구매한 아이템 총 수량 계산
```

```
item_cnt AS (
 SELECT
 CustomerID,
 SUM(Quantity) AS item_cnt
FROM coral-mechanism-464902-i4.modulabs_project.data
GROUP BY CustomerID
-- 기존의 user_r에 (1)과 (2)를 통합
SELECT
 pc.CustomerID,
 pc.purchase_cnt,
 ic.item_cnt,
 ur.recency
FROM purchase_cnt AS pc
JOIN item_cnt AS ic
 ON pc.CustomerID = ic.CustomerID
JOIN coral-mechanism-464902-i4.modulabs_project.user_r AS ur
 ON pc.CustomerID = ur.CustomerID;
```

#### 쿼리 결과

작업 정보 결과 실행 세부정보 실행 그래프



- Monetary
- 고객별 총 지출액 계산

#### **SELECT**

CustomerID,

ROUND(SUM(UnitPrice),0) AS user\_total

FROM coral-mechanism-464902-i4.modulabs\_project.data

**GROUP BY CustomerID** 



- 고객별 평균 거래금액 계산
  - 고객별 평균 거래 금액을 구하기 위해 1) data 테이블을 user\_rf 테이블과 조인 (LEFT JOIN) 한 후, 2) purchase\_cnt 로 나누어서 3) user\_rfm 테이블로 저장해 봅시다.

```
CREATE OR REPLACE TABLE 'coral-mechanism-464902-i4.modulabs_pro
-- (1) 전체 거래 건수 계산
WITH purchase_cnt AS (
SELECT
  CustomerID,
  COUNT(DISTINCT InvoiceNo) AS purchase_cnt
  `coral-mechanism-464902-i4.modulabs_project.data`
 GROUP BY
  CustomerID
),
-- (2) 구매한 아이템 총 수량 계산
item cnt AS (
 SELECT
  CustomerID,
  SUM(Quantity) AS item_cnt
 FROM
  `coral-mechanism-464902-i4.modulabs_project.data`
GROUP BY
  CustomerID
-- (3) 기존 user_r 에 recency 컬럼을 JOIN
SELECT
 pc.CustomerID,
pc.purchase_cnt,
ic.item_cnt,
ur.recency
FROM
 purchase_cnt AS pc
JOIN item_cnt AS ic
  ON pc.CustomerID = ic.CustomerID
JOIN 'coral-mechanism-464902-i4.modulabs_project.user_r' AS ur
  ON pc.CustomerID = ur.CustomerID;
CREATE OR REPLACE TABLE 'coral-mechanism-464902-i4.modulabs_pro
```

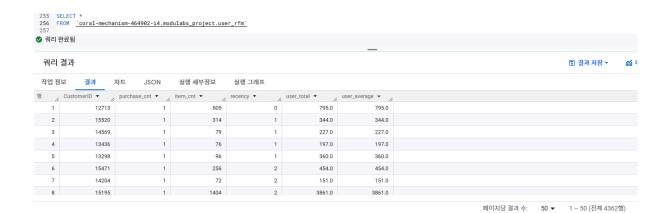
```
SELECT
rf.CustomerID
                     AS CustomerID,
rf.purchase_cnt,
rf.item_cnt,
rf.recency,
ROUND(ut.user_total, 0) AS user_total,
ROUND(ut.user_total / rf.purchase_cnt, 0) AS user_average
FROM
`coral-mechanism-464902-i4.modulabs_project.user_rf` AS rf
LEFT JOIN (
-- 고객 별 총 지출액 계산
SELECT
  CustomerID,
  SUM(Quantity * UnitPrice) AS user_total
  `coral-mechanism-464902-i4.modulabs_project.data`
GROUP BY
  CustomerID
) AS ut
 ON rf.CustomerID = ut.CustomerID;
```







#### • rfm 통합테이블 출력



#### 6. 추가 feature 출력

• 구매하는 제품 다양성

```
CREATE OR REPLACE TABLE coral-mechanism-464902-i4.modulabs_project
WITH unique_products AS (
    SELECT
    CustomerID,
    COUNT(DISTINCT StockCode) AS unique_products
    FROM coral-mechanism-464902-i4.modulabs_project.data
    GROUP BY CustomerID
)
SELECT ur.*, up.* EXCEPT (CustomerID)
FROM coral-mechanism-464902-i4.modulabs_project.user_rfm AS ur
JOIN unique_products AS up
ON ur.CustomerID = up.CustomerID;
```

걱정!	보 결과	실행 세	부정보 실	행 그래프								
	이 무으로 이름	Oluser data	a인 테이블이 교	체되었습니다								
	12-2 10	1 400441		1 1 1 1 1 1								
us	er_data	Q 쿼리	다음에서 열기 🕶	🔩 공유	□ 복사	필 스냅샷 🝵 색	∤제 仚 내	보내기				
키마	세부정보	미리보기	테이블 탐색기	프리뷰	통계 계보	데이터 프로필	데이터	푹질				
//	CustomerID	purchase_cnt	item_cnt	recency	user_total //	user_average / u	nique_prod	average_inter	total_transac	cancel_frequ	cancel_rate //	
30	15562	1	39	351	135.0	135.0	1	0.0	1	0.0	0.0	
31	17986	1	10	56	21.0	21.0	1	0.0	1	0.0	0.0	
32	16257	1	1	176	22.0	22.0	1	0.0	1	0.0	0.0	
33	17347	1	216	86	229.0	229.0	1	0.0	1	0.0	0.0	
34	17752	1	192	359	81.0	81.0	1	0.0	1	0.0	0.0	
35	16138	1	-1	368	-8.0	-8.0	1	0.0	1	1.0	1.0	
36	13099	1	288	99	207.0	207.0	1	0.0	1	0.0	0.0	
37	13841	1	100	252	85.0	85.0	1	0.0	1	0.0	0.0	
38	14679	1	-1	371	-3.0	-3.0	1	0.0	1	1.0	1.0	
39	18068	1	6	289	102.0	102.0	1	0.0	1	0.0	0.0	
40	13270	1	200	366	590.0	590.0	1	0.0	1	0.0	0.0	
41	15657	1	24	22	30.0	30.0	1	0.0	1	0.0	0.0	
42	16881	1	600	66	432.0	432.0	1	0.0	1	0.0	0.0	
43	12791	1	96	373	178.0	178.0	1	0.0	1	0.0	0.0	
44	17925	1	72	372	244.0	244.0	1	0.0	1	0.0	0.0	
45	16995	1	-1	372	-1.0	-1.0	1	0.0	1	1.0	1.0	
46	13747	1	8	373	80.0	80.0	1	0.0	1	0.0	0.0	
47	15510	1	2	330	250.0	250.0	1	0.0	1	0.0	0.0	
48	15488	1	72	92	76.0	76.0	1	0.0	1	0.0	0.0	
49	17331	1	16	123	175.0	175.0	1	0.0	1	0.0	0.0	
50	17948	1	144	147	359.0	359.0	1	0.0	1	0.0	0.0	

• 평균 구매주기

```
CREATE OR REPLACE TABLE coral-mechanism-464902-i4.modulabs_project.
WITH purchase_intervals AS (
 -- (2) 고객 별 구매와 구매 사이의 평균 소요 일수
 SELECT
  CustomerID,
  CASE WHEN ROUND(AVG(interval_), 2) IS NULL THEN 0 ELSE ROUND(AVG
 FROM (
  -- (1) 구매와 구매 사이에 소요된 일수
  SELECT
   CustomerID,
   DATE_DIFF(InvoiceDate, LAG(InvoiceDate) OVER (PARTITION BY Custome
  FROM
   coral-mechanism-464902-i4.modulabs_project.data
  WHERE CustomerID IS NOT NULL
 GROUP BY CustomerID
SELECT u.*, pi.* EXCEPT (CustomerID)
FROM coral-mechanism-464902-i4.modulabs_project.user_data AS u
LEFT JOIN purchase_intervals AS pi
ON u.CustomerID = pi.CustomerID;
```

# 쿼리 결과 작업 정보 결과 실행 세부정보 실행 그래프 ① 이 문으로 이름이 user\_data인 테이블이 교체되었습니다.



• 취소비율, 취소빈도 구하고 user\_data 통합





#### • user\_data 출력

