Project : Data cleaning

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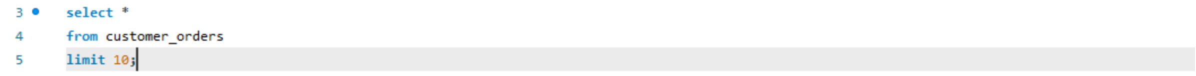
Batch: 6

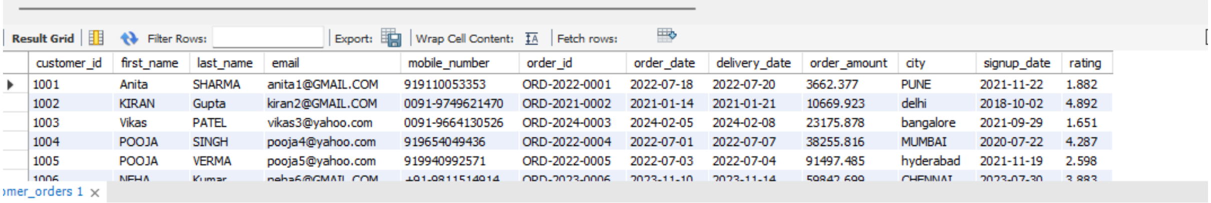
Phone: 9311211182

🔷 STEP 0: Inspect Raw Data

```
SELECT *
FROM customer_orders
LIMIT 10;
```



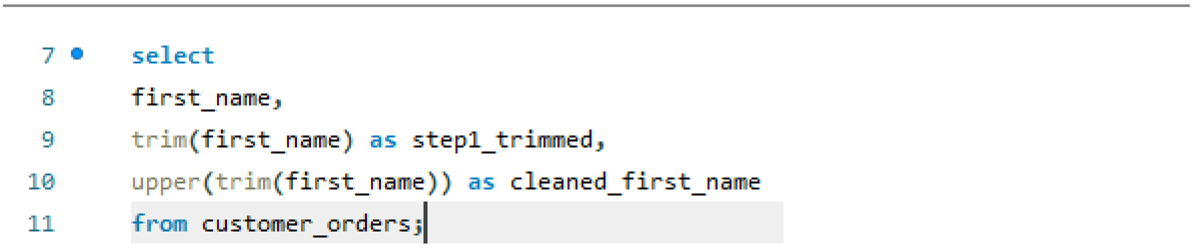
```
select *
from customer_orders
limit 10;
```



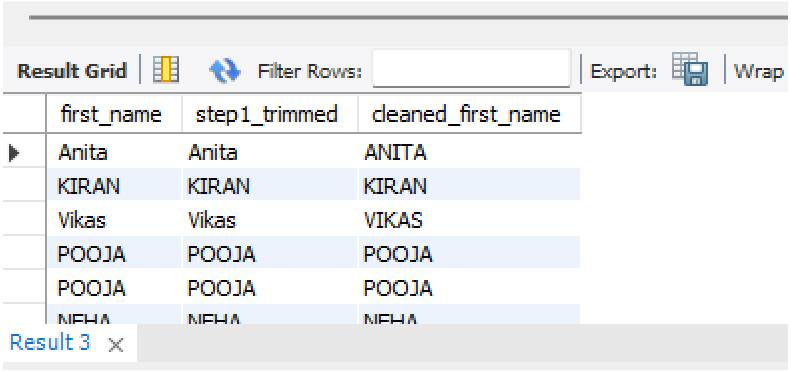
customer_id	first_name	last_name	email	mobile_number	order_id	order_date	delivery_date	order_amount	city	signup_date	rating
1001	Anita	SHARMA	anita1@GMAIL.COM	919110053353	ORD-2022-0001	2022-07-18	2022-07-20	3662.377	PUNE	2021-11-22	1.882
1002	KIRAN	Gupta	kiran2@GMAIL.COM	0091-9749621470	ORD-2021-0002	2021-01-14	2021-01-21	10669.923	delhi	2018-10-02	4.892
1003	Vikas	PATEL	vikas3@yahoo.com	0091-9664130526	ORD-2024-0003	2024-02-05	2024-02-08	23175.878	bangalore	2021-09-29	1.651
1004	POOJA	SINGH	pooja4@yahoo.com	919654049436	ORD-2022-0004	2022-07-01	2022-07-07	38255.816	MUMBAI	2020-07-22	4.287
1005	POOJA	VERMA	pooja5@yahoo.com	919940992571	ORD-2022-0005	2022-07-03	2022-07-04	91497.485	hyderabad	2021-11-19	2.598
1006	NEHA	Kumar	neha6@GMAIL.COM	+91-9811514914	ORD-2023-0006	2023-11-10	2023-11-14	59842.699	CHENNAI	2023-07-30	3.883

🔷 STEP 1: Clean `first_name` (Spaces + Case)

```
SELECT
  first_name,
  TRIM(first_name) AS step1_trimmed,
  UPPER(TRIM(first_name)) AS cleaned_first_name
FROM customer_orders;
```



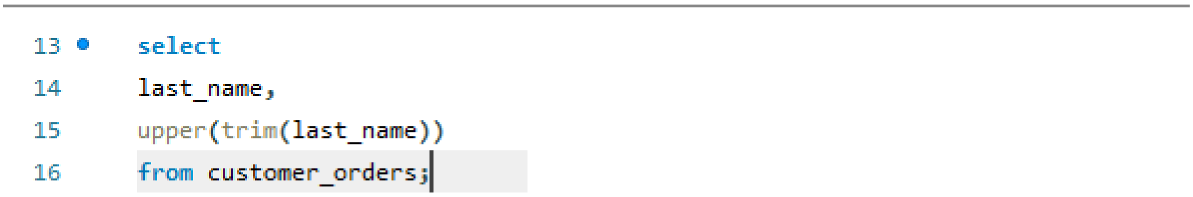
```
select
first_name,
trim(first_name) as step1_trimmed,
upper(trim(first_name)) as cleaned_first_name
from customer_orders;
```



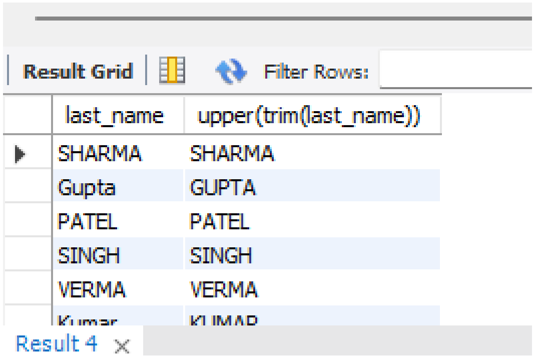
first_name	step1_trimmed	cleaned_first_name
Anita	Anita	ANITA
KIRAN	KIRAN	KIRAN
Vikas	Vikas	VIKAS
POOJA	POOJA	POOJA
POOJA	POOJA	POOJA
NEHA	NEHA	NEHA

🔹 STEP 2: Clean `last_name`

```
SELECT
  last_name,
  UPPER(TRIM(last_name)) AS cleaned_last_name
FROM customer_orders;
```



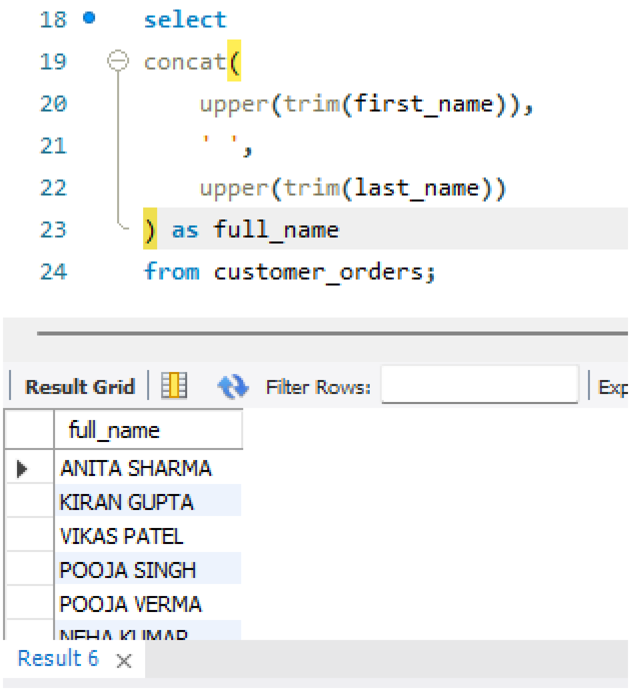
```
select
last_name,
upper(trim(last_name))
from customer_orders;
```



last_name	upper(trim(last_name))
SHARMA	SHARMA
Gupta	GUPTA
PATEL	PATEL
SINGH	SINGH
VERMA	VERMA
Kumar	KUMAR

🔹 STEP 3: Create `full_name` (CONCAT)

```
SELECT
  CONCAT(
    UPPER(TRIM(first_name)),
    ' ',
    UPPER(TRIM(last_name))
  ) AS full_name
FROM customer_orders;
```

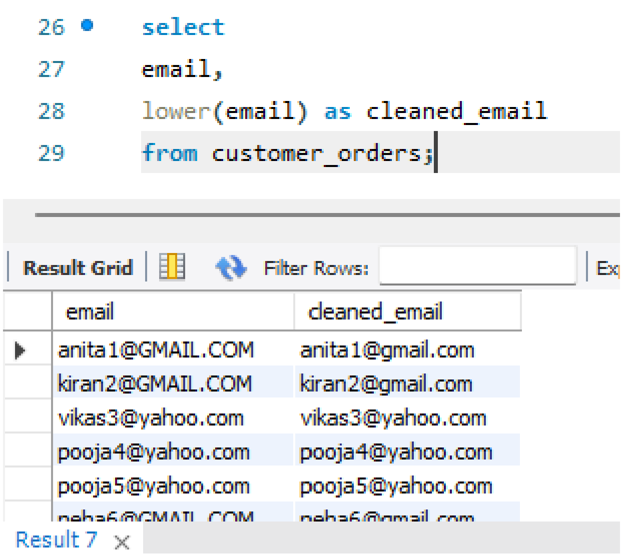


```
select
concat(
    upper(trim(first_name)),
    ' ',
    upper(trim(last_name))
) as full_name
from customer_orders;
```

```
full_name
ANITA SHARMA
KIRAN GUPTA
VIKAS PATEL
POOJA SINGH
POOJA VERMA
NEHA KUMAR
```

🔹 STEP 4: Clean `email` (Standardization)

```
SELECT
  email,
  LOWER(email) AS cleaned_email
FROM customer_orders;
```

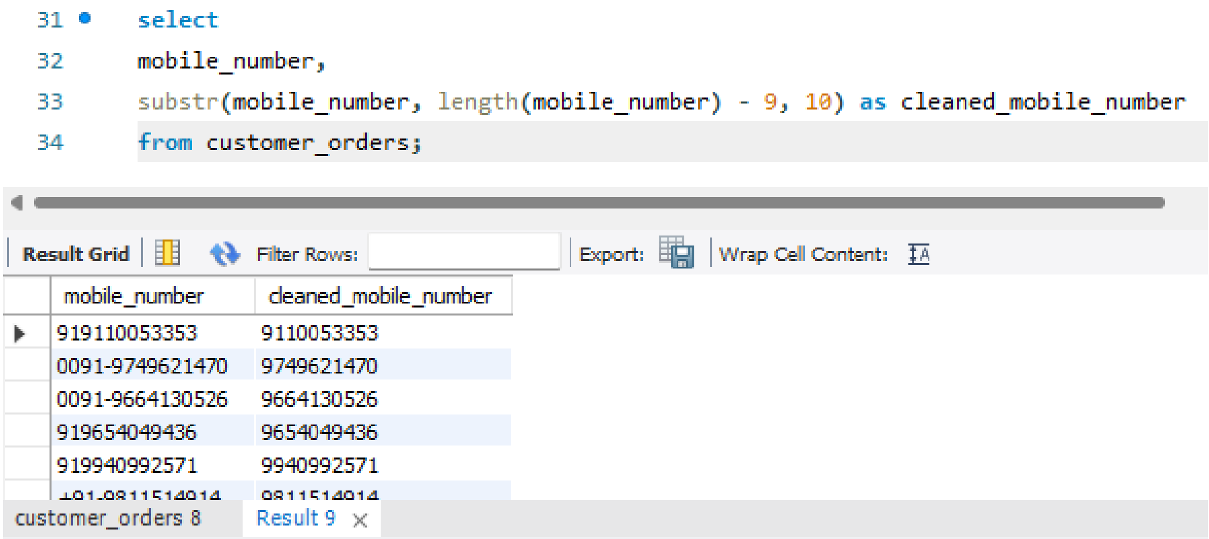


```
select
email,
lower(email) as cleaned_email
from customer_orders;
```

email	cleaned_email
anita1@GMAIL.COM	anita1@gmail.com
kiran2@GMAIL.COM	kiran2@gmail.com
vikas3@yahoo.com	vikas3@yahoo.com
pooja4@yahoo.com	pooja4@yahoo.com
pooja5@yahoo.com	pooja5@yahoo.com
neha6@GMAIL.COM	neha6@gmail.com

🔷 STEP 5: Clean `mobile_number` (Extract last 10 digits)

```
SELECT
  mobile_number,
  SUBSTR(mobile_number, LENGTH(mobile_number) - 9, 10) AS cleaned_mobile
FROM customer_orders;
```



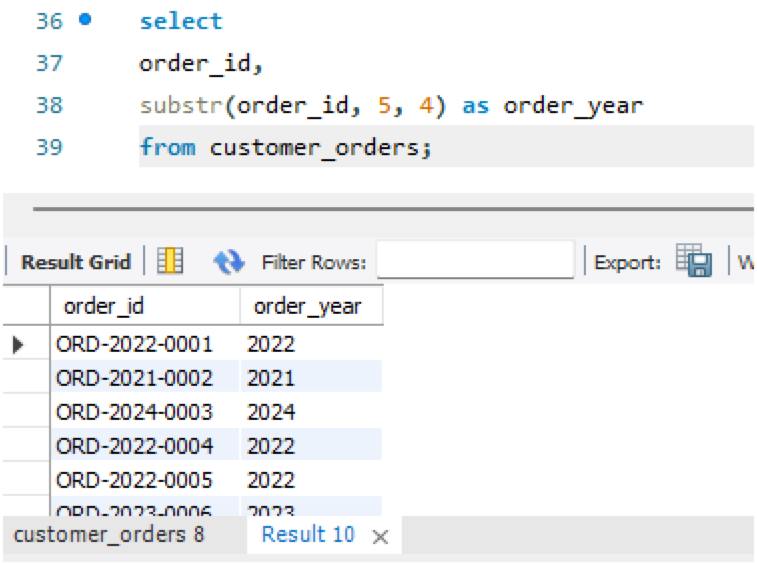
```
select
mobile_number,
substr(mobile_number, length(mobile_number) - 9, 10) as cleaned_mobile_number
from customer_orders;
```

mobile_number	cleaned_mobile_number
919110053353	9110053353
0091-9749621470	9749621470
0091-9664130526	9664130526
919654049436	9654049436
919940992571	9940992571
+91-9811514914	9811514914

🔷 STEP 6: Extract Year from `order_id`

```
SELECT
```

```
  order_id,
  SUBSTR(order_id, 5, 4) AS order_year
FROM customer_orders;
```

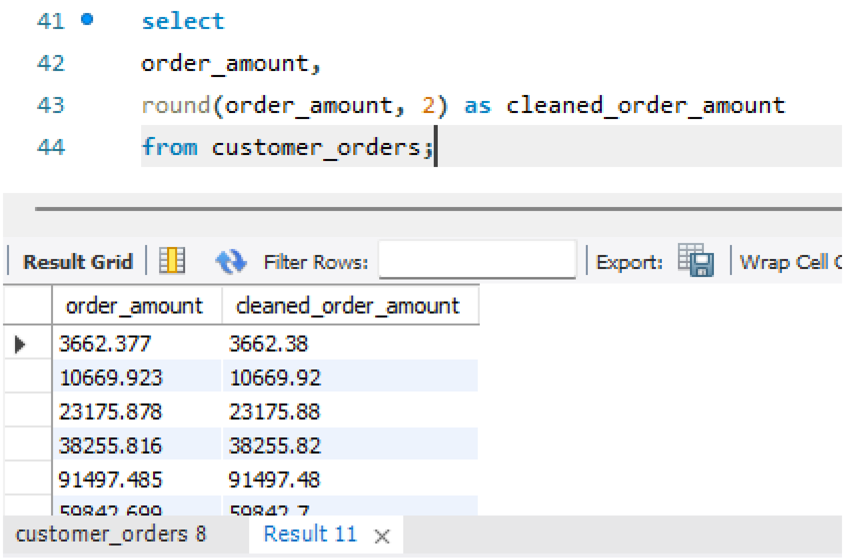


```
select
order_id,
substr(order_id, 5, 4) as order_year
from customer_orders;
```

	order_id	order_year
▶	ORD-2022-0001	2022
	ORD-2021-0002	2021
	ORD-2024-0003	2024
	ORD-2022-0004	2022
	ORD-2022-0005	2022
	ORD-2023-0006	2023

STEP 7: Round `order_amount`

```
SELECT
  order_amount,
  ROUND(order_amount, 2) AS cleaned_order_amount
FROM customer_orders;
```

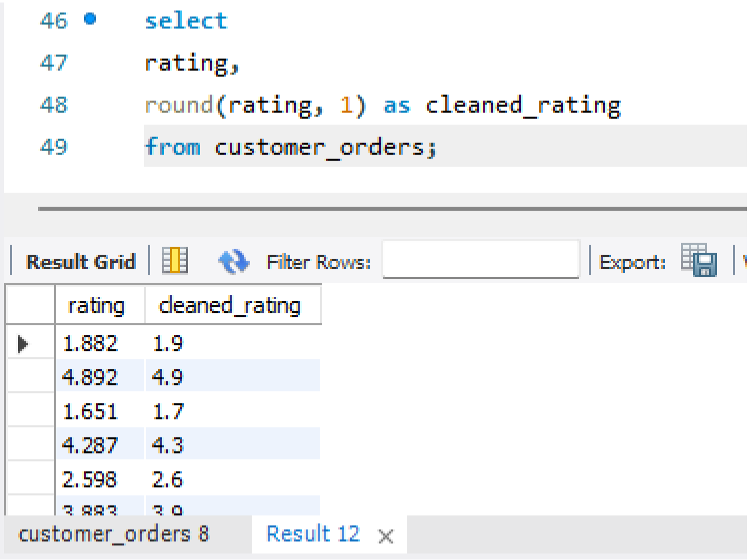


```
select
order_amount,
round(order_amount, 2) as cleaned_order_amount
from customer_orders;
```

	order_amount	cleaned_order_amount
▶	3662.377	3662.38
	10669.923	10669.92
	23175.878	23175.88
	38255.816	38255.82
	91497.485	91497.48
	59842.699	59842.7

🔹 STEP 8: Round `rating`

```
SELECT
  rating,
  ROUND(rating, 1) AS cleaned_rating
FROM customer_orders;
```

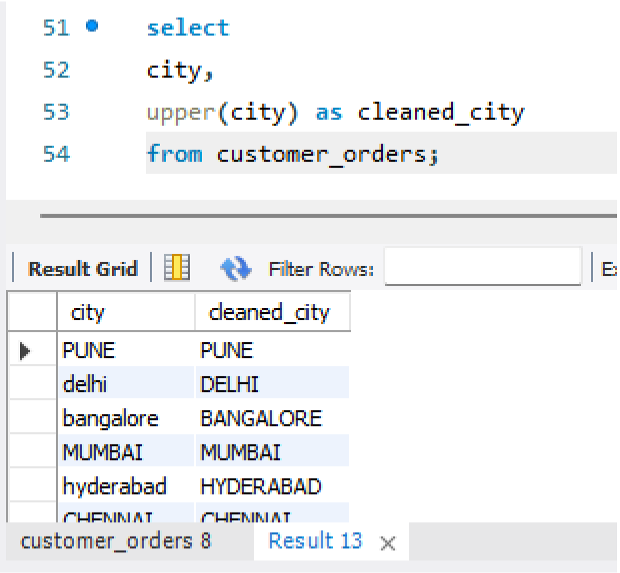


```
select
rating,
round(rating, 1) as cleaned_rating
from customer_orders;
```

rating	cleaned_rating
1.882	1.9
4.892	4.9
1.651	1.7
4.287	4.3
2.598	2.6
3.883	3.9

🔹 STEP 9: Standardize `city`

```
SELECT
  city,
  UPPER(city) AS cleaned_city
FROM customer_orders;
```

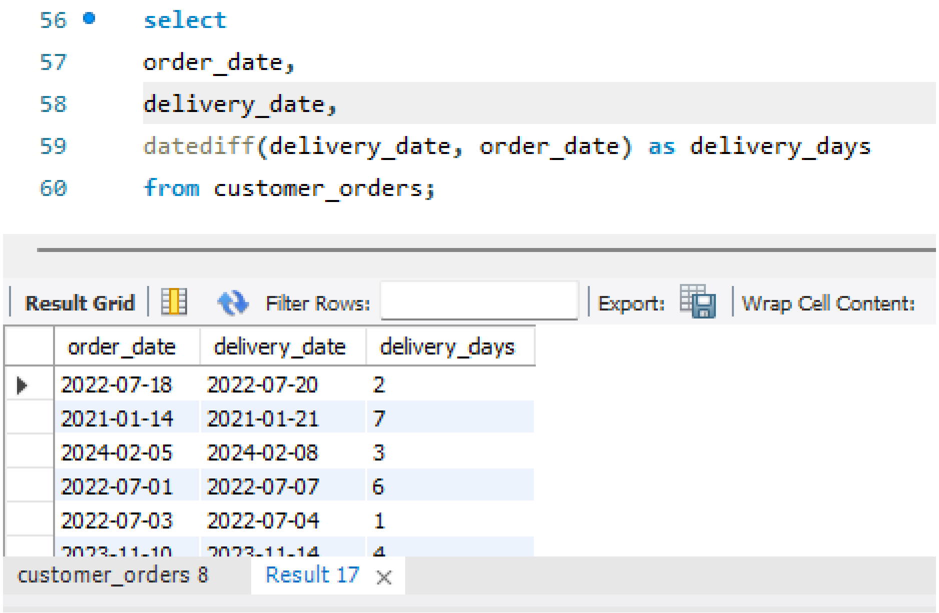


```
select
city,
upper(city) as cleaned_city
from customer_orders;
```

city	cleaned_city
PUNE	PUNE
delhi	DELHI
bangalore	BANGALORE
MUMBAI	MUMBAI
hyderabad	HYDERABAD
CHENNAI	CHENNAI

🔷 STEP 10: Delivery Time Calculation (DATEDIFF)

```
SELECT
  order_date,
  delivery_date,
  DATEDIFF(delivery_date, order_date) AS delivery_days
FROM customer_orders;
```

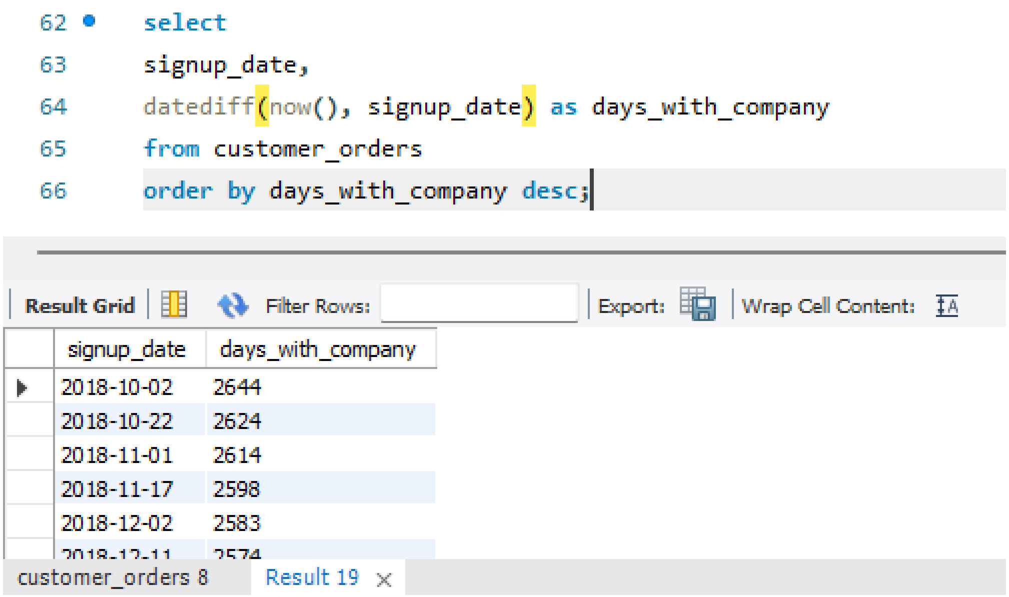


```
select
order_date,
delivery_date,
datediff(delivery_date, order_date) as delivery_days
from customer_orders;
```

order_date	delivery_date	delivery_days
2022-07-18	2022-07-20	2
2021-01-14	2021-01-21	7
2024-02-05	2024-02-08	3
2022-07-01	2022-07-07	6
2022-07-03	2022-07-04	1
2023-11-10	2023-11-14	4

🔹 STEP 11: Customer Tenure Calculation

```
SELECT
  signup_date,
  DATEDIFF(NOW(), signup_date) AS days_with_company
FROM customer_orders;
```

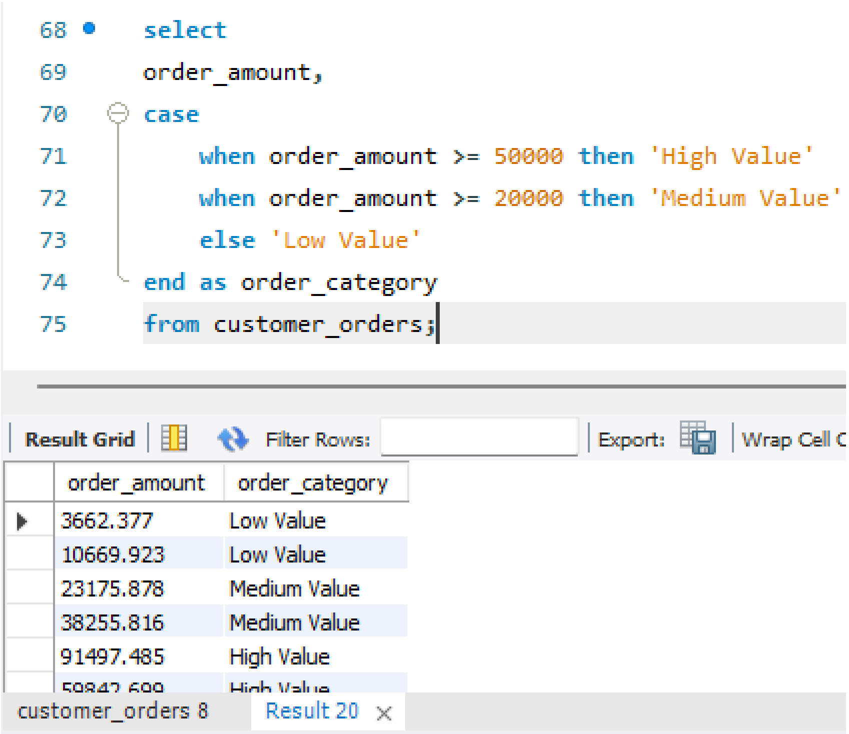


```
select
signup_date,
datediff(now(), signup_date) as days_with_company
from customer_orders
order by days_with_company desc;
```

signup_date	days_with_company
2018-10-02	2644
2018-10-22	2624
2018-11-01	2614
2018-11-17	2598
2018-12-02	2583
2018-12-11	2574

🔹 STEP 12: CASE WHEN – Order Value Category

```
SELECT
  order_amount,
  CASE
    WHEN order_amount >= 50000 THEN 'High Value'
    WHEN order_amount >= 20000 THEN 'Medium Value'
    ELSE 'Low Value'
  END AS order_category
FROM customer_orders;
```

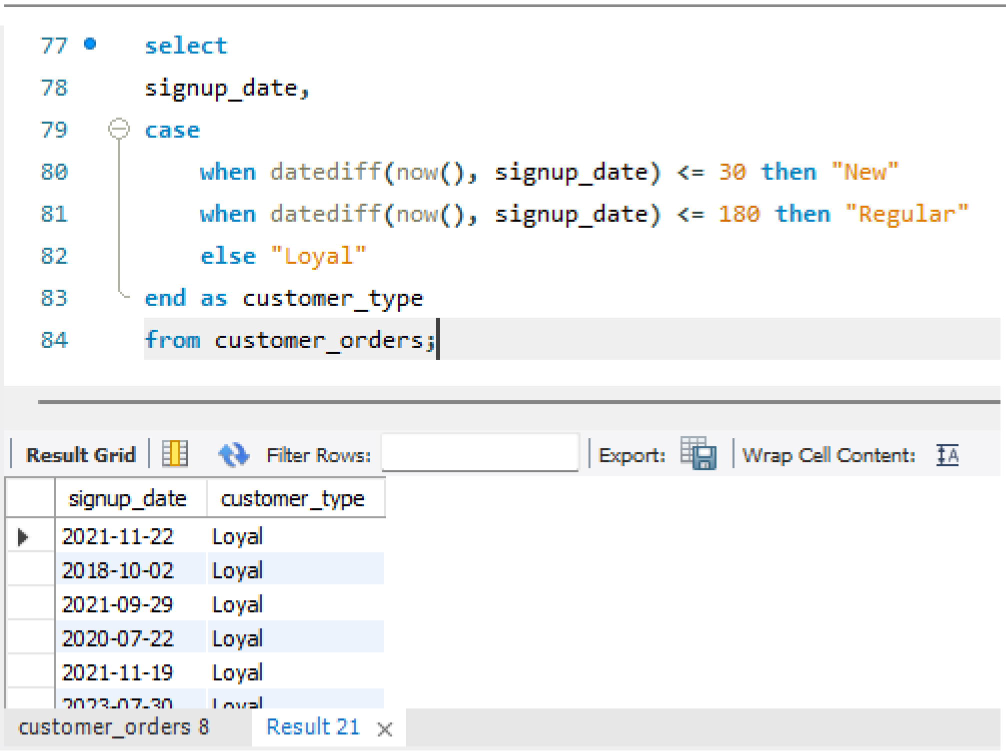


```
select
order_amount,
case
    when order_amount >= 50000 then 'High Value'
    when order_amount >= 20000 then 'Medium Value'
    else 'Low Value'
end as order_category
from customer_orders;
```

order_amount	order_category
3662.377	Low Value
10669.923	Low Value
23175.878	Medium Value
38255.816	Medium Value
91497.485	High Value
59842.699	High Value

🔹 STEP 13: CASE WHEN – Customer Type

```
SELECT
  signup_date,
  CASE
    WHEN DATEDIFF(NOW(), signup_date) <= 30 THEN 'New'
    WHEN DATEDIFF(NOW(), signup_date) <= 180 THEN 'Regular'
    ELSE 'Loyal'
  END AS customer_type
FROM customer_orders;
```



```sql
select
signup_date,
case
    when datediff(now(), signup_date) <= 30 then "New"
    when datediff(now(), signup_date) <= 180 then "Regular"
    else "Loyal"
end as customer_type
from customer_orders;
```

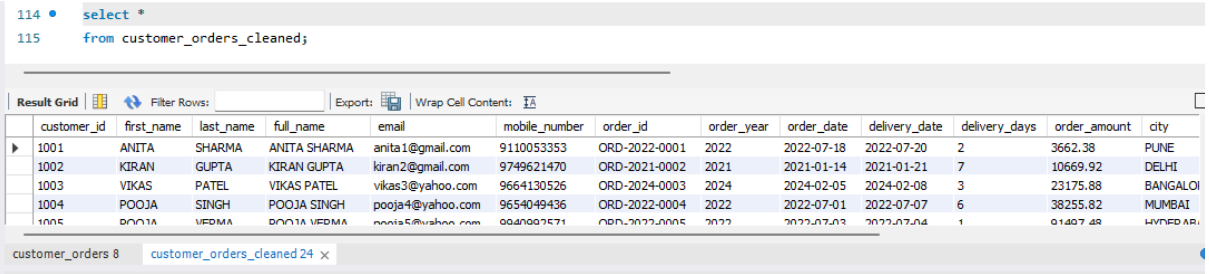
signup_date	customer_type
2021-11-22	Loyal
2018-10-02	Loyal
2021-09-29	Loyal
2020-07-22	Loyal
2021-11-19	Loyal
2023-07-30	Loyal

◆ STEP 14: FINAL CLEANED VIEW (Industry Practice)

```sql
CREATE VIEW customer_orders_cleaned AS
SELECT
  customer_id,
  UPPER(TRIM(first_name)) AS first_name,
  UPPER(TRIM(last_name)) AS last_name,
  CONCAT(
    UPPER(TRIM(first_name)), ' ',
    UPPER(TRIM(last_name))
  ) AS full_name,
  LOWER(email) AS email,
  SUBSTR(mobile_number, LENGTH(mobile_number) - 9, 10) AS mobile_number,
  order_id,
  SUBSTR(order_id, 5, 4) AS order_year,
  order_date,
  delivery_date,
  DATEDIFF(delivery_date, order_date) AS delivery_days,
  ROUND(order_amount, 2) AS order_amount,
  UPPER(city) AS city,
  signup_date,
  DATEDIFF(NOW(), signup_date) AS customer_tenure_days,
  CASE
    WHEN order_amount >= 50000 THEN 'High Value'
    WHEN order_amount >= 20000 THEN 'Medium Value'
    ELSE 'Low Value'
  END AS order_category,
  ROUND(rating, 1) AS rating
FROM customer_orders;
```

🔷 STEP 15: Validate Cleaned Data

```
SELECT *
FROM customer_orders_cleaned
LIMIT 10;
```



```
select *
from customer_orders_cleaned;
```

	customer_id	first_name	last_name	full_name	email	mobile_number	order_id	order_year	order_date	delivery_date	delivery_days	order_amount	city
▶	1001	ANITA	SHARMA	ANITA SHARMA	anita1@gmail.com	9110053353	ORD-2022-0001	2022	2022-07-18	2022-07-20	2	3662.38	PUNE
	1002	KIRAN	GUPTA	KIRAN GUPTA	kiran2@gmail.com	9749621470	ORD-2021-0002	2021	2021-01-14	2021-01-21	7	10669.92	DELHI
	1003	VIKAS	PATEL	VIKAS PATEL	vikas3@yahoo.com	9664130526	ORD-2024-0003	2024	2024-02-05	2024-02-08	3	23175.88	BANGALOI
	1004	POOJA	SINGH	POOJA SINGH	pooja4@yahoo.com	9654049436	ORD-2022-0004	2022	2022-07-01	2022-07-07	6	38255.82	MUMBAI
	1005	POOJA	VERMA	POOJA VERMA	pooja5@yahoo.com	9940992571	ORD-2022-0005	2022	2022-07-03	2022-07-04	1	91497.48	HYDERAB