LAPORAN PRAKTIKUM 3

Mata Kuliah: Sistem basis data

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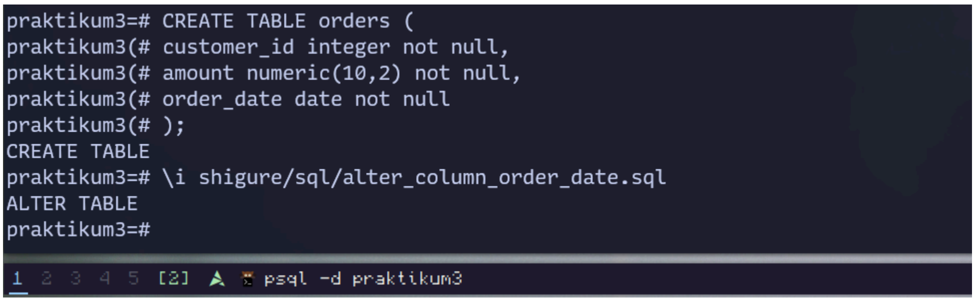
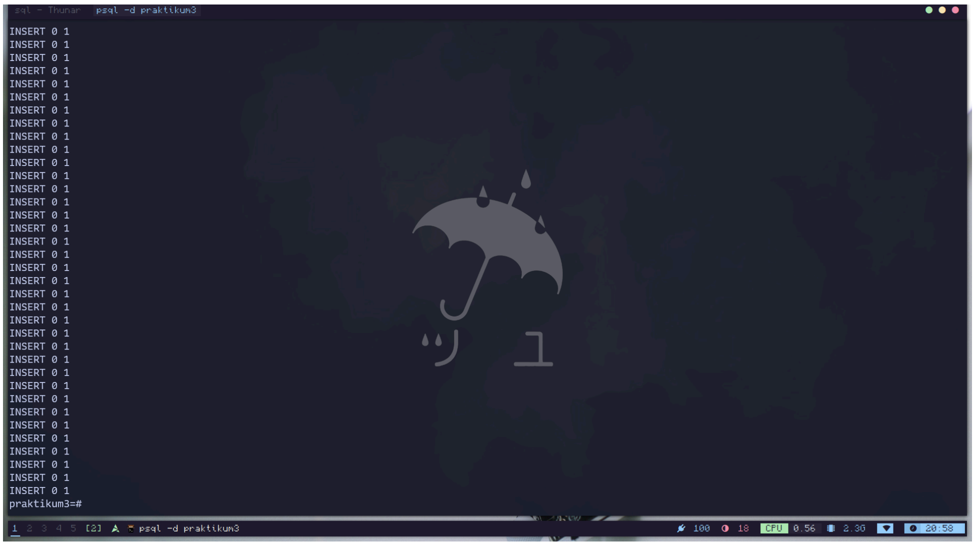
1) Import sql alter_column_order_date lalu jalankan



```
praktikum3=# CREATE TABLE orders (
praktikum3(# customer_id integer not null,
praktikum3(# amount numeric(10,2) not null,
praktikum3(# order_date date not null
praktikum3(# );
CREATE TABLE
praktikum3=# \i shigure/sql/alter_column_order_date.sql
ALTER TABLE
praktikum3=#
```

Figure 1: pembuatan tabel orders dan import alter_column_order_date

2) import sql orders.sql



```
INSERT 0 1
INSERT 0 1
INSERT 0 1
INSERT 0 1
INSERT 0 1
INSERT 0 1
INSERT 0 1
INSERT 0 1
INSERT 0 1
INSERT 0 1
INSERT 0 1
INSERT 0 1
INSERT 0 1
INSERT 0 1
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INSERT 0 1
INSERT 0 1
INSERT 0 1
INSERT 0 1
INSERT 0 1
INSERT 0 1
praktikum3=#
```
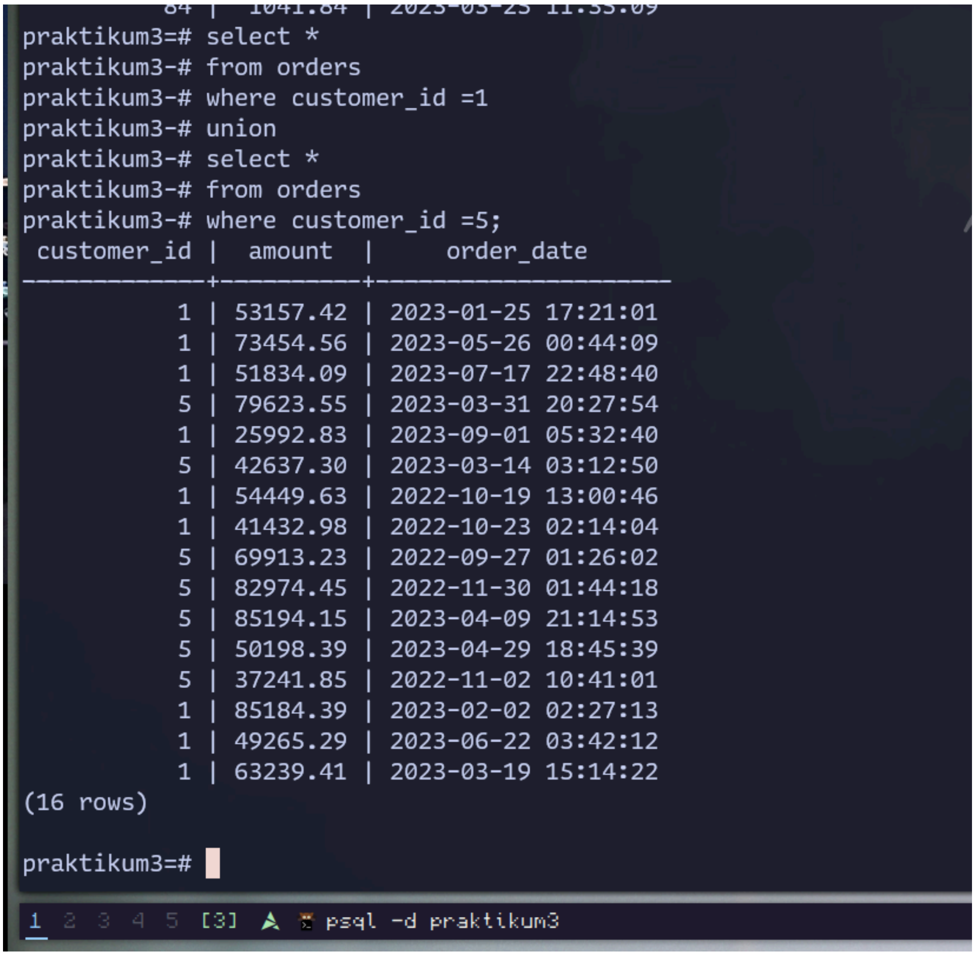

Figure 2: import orders.sql

3) jalankan perintah berikut

3.1) Temukan semua pesanan pelanggan yang memiliki ID pelanggan “1” dan “5”, gunakan operasi set menggunakan UNION

```
select * from orders
where customer_id =1
union
select *
from orders
where customer_id =5;
```

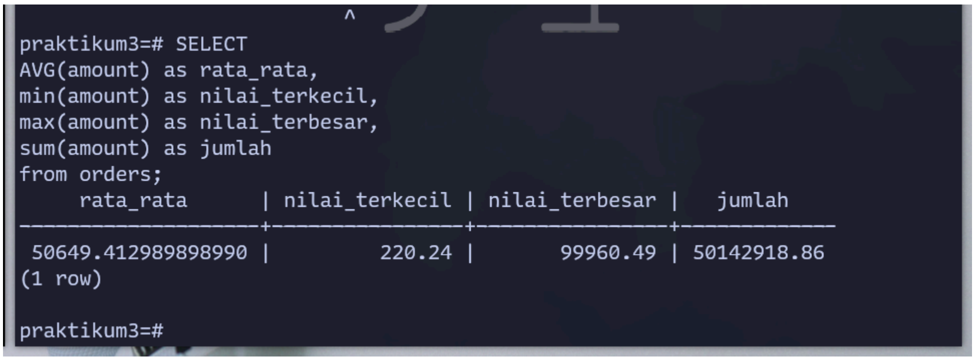


```
            84 |  1041.84 | 2023-03-25 11:33:09
praktikum3=# select *
praktikum3-# from orders
praktikum3-# where customer_id =1
praktikum3-# union
praktikum3-# select *
praktikum3-# from orders
praktikum3-# where customer_id =5;
 customer_id |  amount  |     order_date
-------------+----------+---------------------
           1 | 53157.42 | 2023-01-25 17:21:01
           1 | 73454.56 | 2023-05-26 00:44:09
           1 | 51834.09 | 2023-07-17 22:48:40
           5 | 79623.55 | 2023-03-31 20:27:54
           1 | 25992.83 | 2023-09-01 05:32:40
           5 | 42637.30 | 2023-03-14 03:12:50
           1 | 54449.63 | 2022-10-19 13:00:46
           1 | 41432.98 | 2022-10-23 02:14:04
           5 | 69913.23 | 2022-09-27 01:26:02
           5 | 82974.45 | 2022-11-30 01:44:18
           5 | 85194.15 | 2023-04-09 21:14:53
           5 | 50198.39 | 2023-04-29 18:45:39
           5 | 37241.85 | 2022-11-02 10:41:01
           1 | 85184.39 | 2023-02-02 02:27:13
           1 | 49265.29 | 2023-06-22 03:42:12
           1 | 63239.41 | 2023-03-19 15:14:22
(16 rows)

praktikum3=#
```

Figure 3: Hasil query

3.2) Temukan nilai rata-rata, nilai terkecil, nilai terbesar, dan jumlah amount dari pesanan pelanggan

```
SELECT
  avg(amount) as rata_rata,
  min(amount) as nilai_terkecil,
  max(amount) as nilai_terbesar,
  sum(amount) as jumlah
from orders;
```

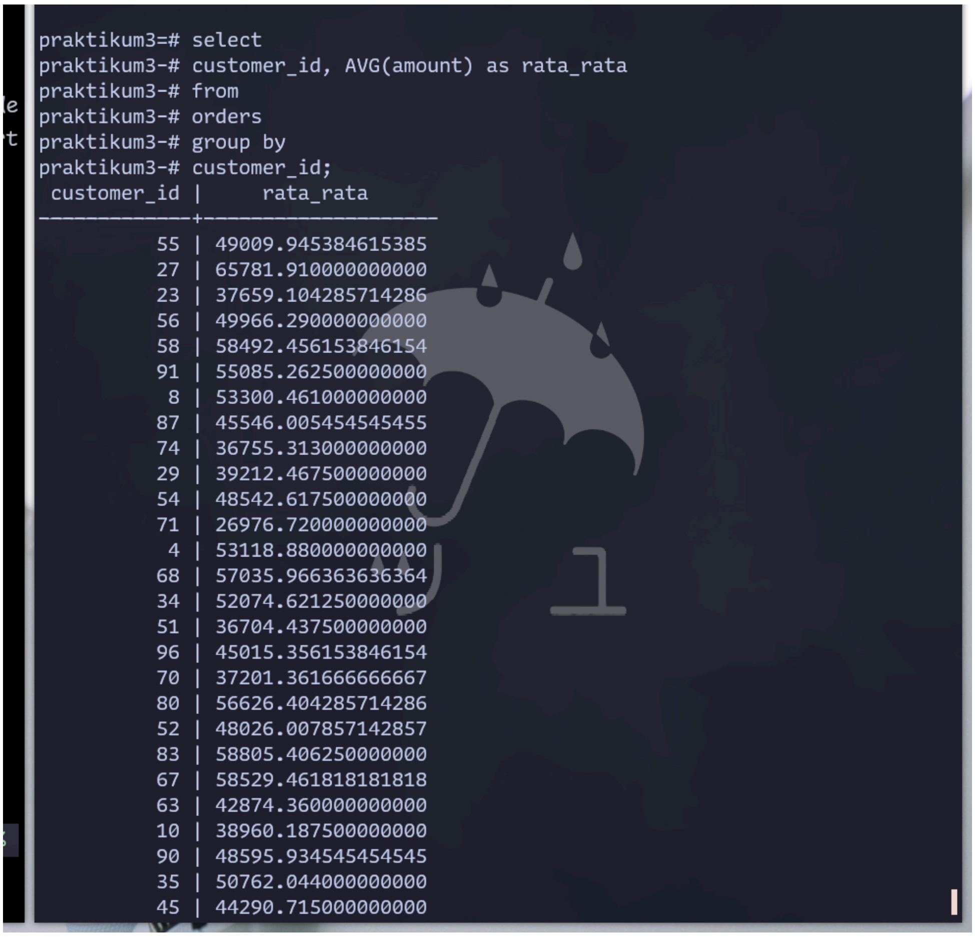


```
praktikum3=# SELECT
AVG(amount) as rata_rata,
min(amount) as nilai_terkecil,
max(amount) as nilai_terbesar,
sum(amount) as jumlah
from orders;
     rata_rata      | nilai_terkecil | nilai_terbesar |   jumlah
--------------------+----------------+----------------+-------------
 50649.412989898990 |         220.24 |       99960.49 | 50142918.86
(1 row)

praktikum3=#
```

Figure 4: Hasil query

3.3) Temukan customer_id dan nilai rata-rata amount dari masing-masing pelanggan

```
AVG(amount) as rata_rata
from
orders
group by
customer_id;
```

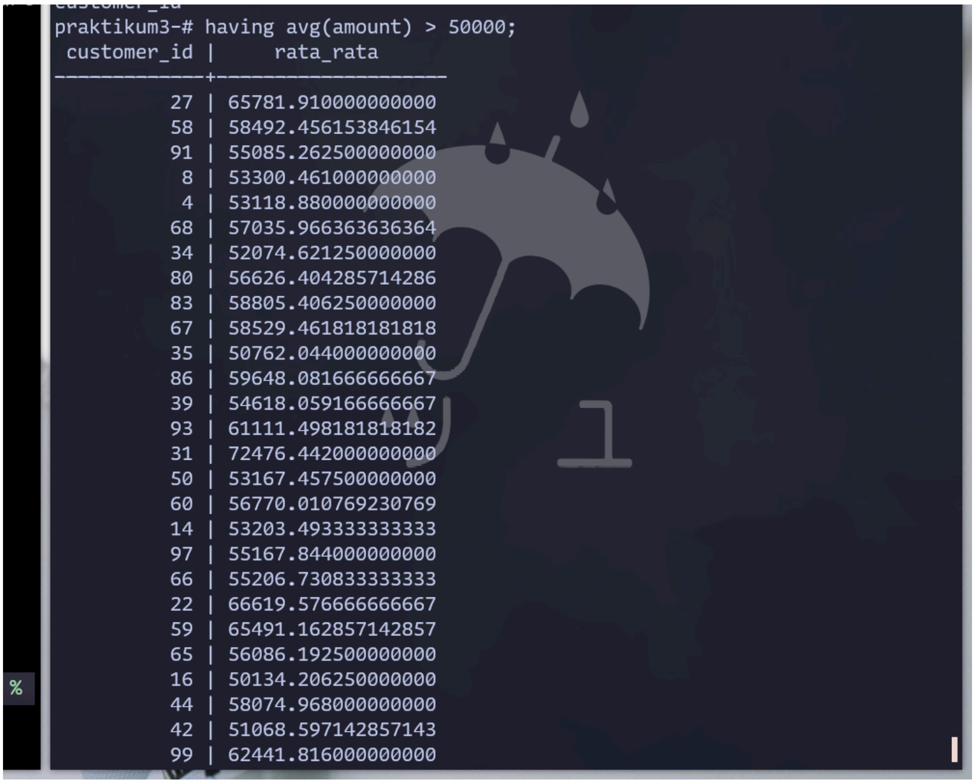


```
praktikum3=# select
praktikum3-# customer_id, AVG(amount) as rata_rata
praktikum3-# from
praktikum3-# orders
praktikum3-# group by
praktikum3-# customer_id;
 customer_id |     rata_rata
-------------+--------------------
          55 | 49009.945384615385
          27 | 65781.910000000000
          23 | 37659.104285714286
          56 | 49966.290000000000
          58 | 58492.456153846154
          91 | 55085.262500000000
           8 | 53300.461000000000
          87 | 45546.005454545455
          74 | 36755.313000000000
          29 | 39212.467500000000
          54 | 48542.617500000000
          71 | 26976.720000000000
           4 | 53118.880000000000
          68 | 57035.966363636364
          34 | 52074.621250000000
          51 | 36704.437500000000
          96 | 45015.356153846154
          70 | 37201.361666666667
          80 | 56626.404285714286
          52 | 48026.007857142857
          83 | 58805.406250000000
          67 | 58529.461818181818
          63 | 42874.360000000000
          10 | 38960.187500000000
          90 | 48595.934545454545
          35 | 50762.044000000000
          45 | 44290.715000000000
```

Figure 5: Hasil query

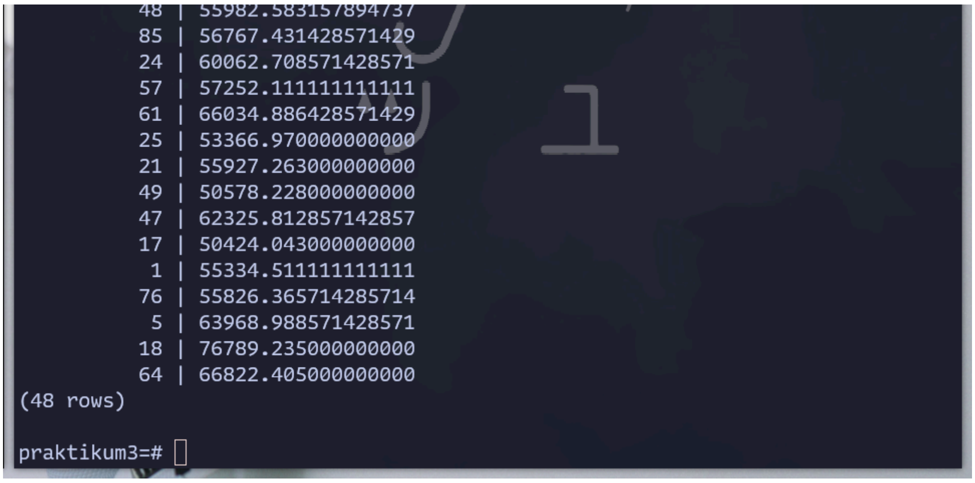
3.4) Dari query 3.3, temukan customer_id dan nilai rata-rata amount yang lebih besar dari 50000

```
select customer_id, rata_rata from (
select customer_id, avg(amount) as rata_rata
from orders
group by customer_id
) as customer_rata_rata
where rata_rata > 50000;
```



```
customer_id
praktikum3-# having avg(amount) > 50000;
 customer_id |      rata_rata
-------------+---------------------
          27 | 65781.910000000000
          58 | 58492.456153846154
          91 | 55085.262500000000
           8 | 53300.461000000000
           4 | 53118.880000000000
          68 | 57035.966363636364
          34 | 52074.621250000000
          80 | 56626.404285714286
          83 | 58805.406250000000
          67 | 58529.461818181818
          35 | 50762.044000000000
          86 | 59648.081666666667
          39 | 54618.059166666667
          93 | 61111.498181818182
          31 | 72476.442000000000
          50 | 53167.457500000000
          60 | 56770.010769230769
          14 | 53203.493333333333
          97 | 55167.844000000000
          66 | 55206.730833333333
          22 | 66619.576666666667
          59 | 65491.162857142857
          65 | 56086.192500000000
          16 | 50134.206250000000
          44 | 58074.968000000000
          42 | 51068.597142857143
          99 | 62441.816000000000
```

Figure 6: Hasil query

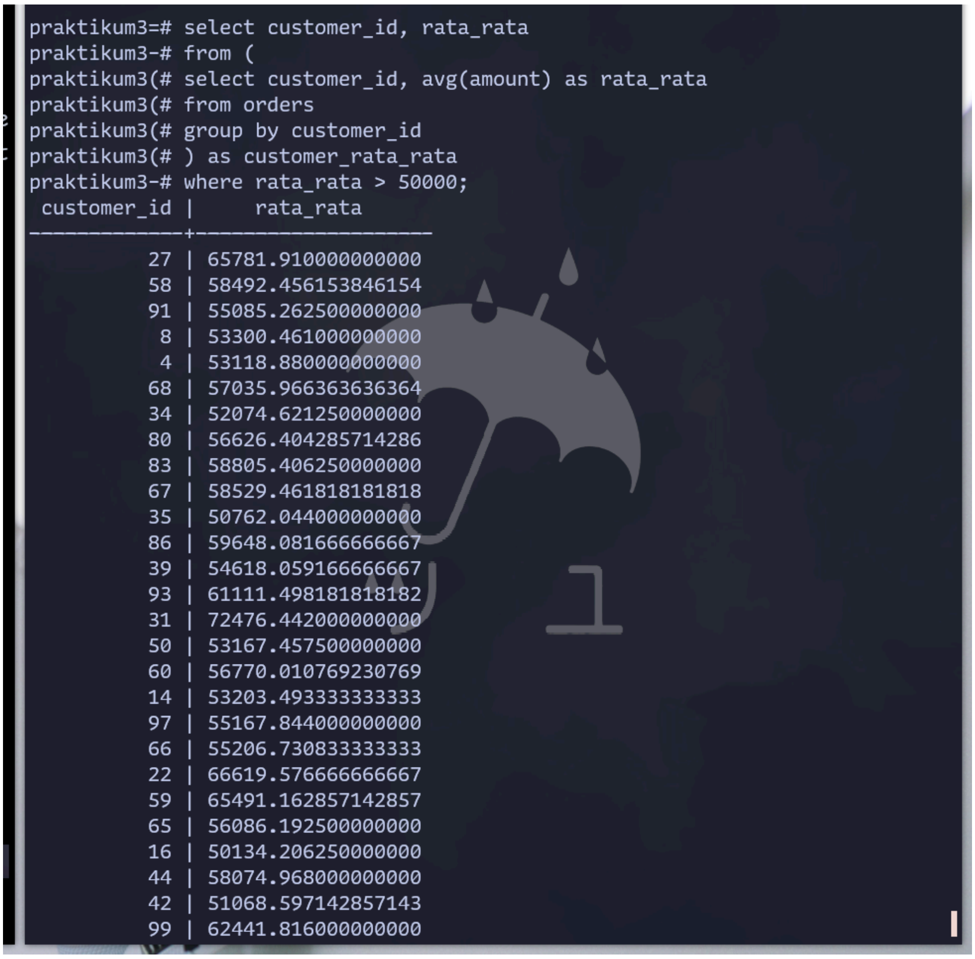


```
          48 | 55982.583157894737
          85 | 56767.431428571429
          24 | 60062.708571428571
          57 | 57252.111111111111
          61 | 66034.886428571429
          25 | 53366.970000000000
          21 | 55927.263000000000
          49 | 50578.228000000000
          47 | 62325.812857142857
          17 | 50424.043000000000
           1 | 55334.511111111111
          76 | 55826.365714285714
           5 | 63968.988571428571
          18 | 76789.235000000000
          64 | 66822.405000000000
(48 rows)

praktikum3=#
```

Figure 7: Hasil query

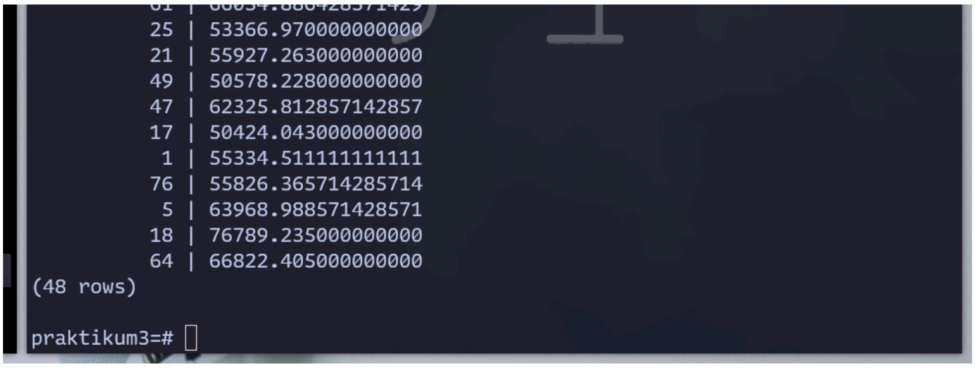
3.5) Dari query 3.4, gunakan ekspresi subquery di dalam klausa “from”

```
select customer_id, amount
from orders
where orders.amount >(select avg(amount)
from (select * from orders where customer_id > 10) as s);
```



```
praktikum3=# select customer_id, rata_rata
praktikum3-# from (
praktikum3(# select customer_id, avg(amount) as rata_rata
praktikum3(# from orders
praktikum3(# group by customer_id
praktikum3(# ) as customer_rata_rata
praktikum3-# where rata_rata > 50000;
 customer_id |      rata_rata
-------------+--------------------
          27 | 65781.910000000000
          58 | 58492.456153846154
          91 | 55085.262500000000
           8 | 53300.461000000000
           4 | 53118.880000000000
          68 | 57035.966363636364
          34 | 52074.621250000000
          80 | 56626.404285714286
          83 | 58805.406250000000
          67 | 58529.461818181818
          35 | 50762.044000000000
          86 | 59648.081666666667
          39 | 54618.059166666667
          93 | 61111.498181818182
          31 | 72476.442000000000
          50 | 53167.457500000000
          60 | 56770.010769230769
          14 | 53203.493333333333
          97 | 55167.844000000000
          66 | 55206.730833333333
          22 | 66619.576666666667
          59 | 65491.162857142857
          65 | 56086.192500000000
          16 | 50134.206250000000
          44 | 58074.968000000000
          42 | 51068.597142857143
          99 | 62441.816000000000
```

Figure 8: Hasil query

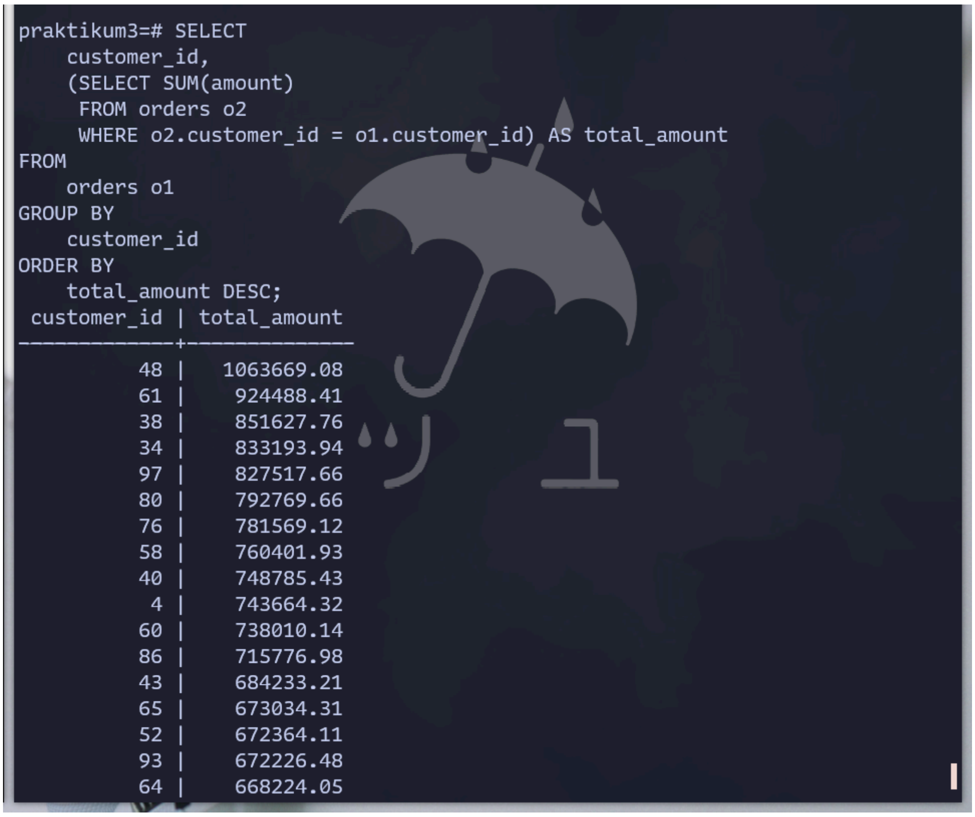


```
          61 | 66034.880428571429
          25 | 53366.970000000000
          21 | 55927.263000000000
          49 | 50578.228000000000
          47 | 62325.812857142857
          17 | 50424.043000000000
           1 | 55334.511111111111
          76 | 55826.365714285714
           5 | 63968.988571428571
          18 | 76789.235000000000
          64 | 66822.405000000000
(48 rows)

praktikum3=# 
```

Figure 9: Hasil query

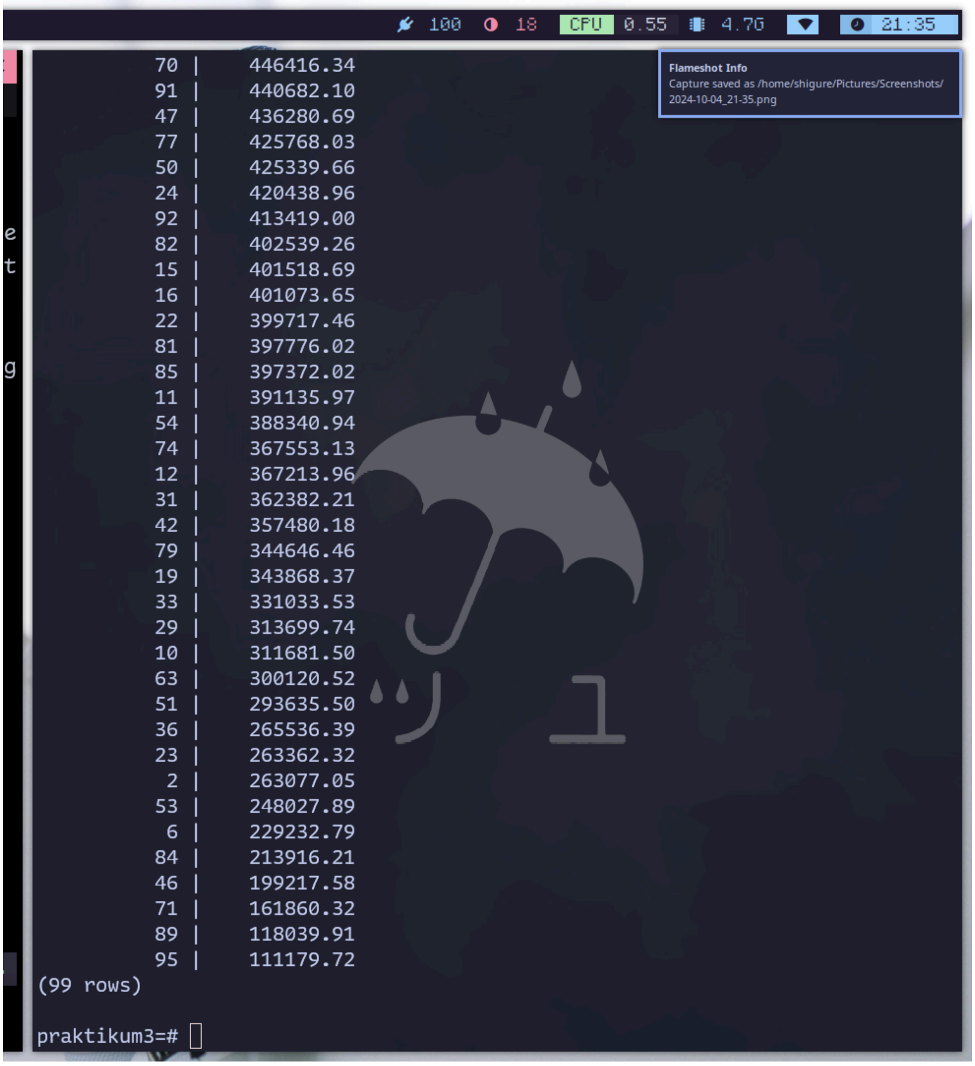
3.6) Temukan customer_id dan jumlah order masing-masing pelanggan menggunakan subquery skalar

```
select customer_id,
(select sum(amount) from orders o2 where o2.customer_id = 01.customer_id) as
total_amount
from orders o1
group by customer_id
order by total_amount desc;
```



```
praktikum3=# SELECT
    customer_id,
    (SELECT SUM(amount)
     FROM orders o2
     WHERE o2.customer_id = o1.customer_id) AS total_amount
FROM
    orders o1
GROUP BY
    customer_id
ORDER BY
    total_amount DESC;
 customer_id | total_amount
-------------+--------------
          48 |   1063669.08
          61 |    924488.41
          38 |    851627.76
          34 |    833193.94
          97 |    827517.66
          80 |    792769.66
          76 |    781569.12
          58 |    760401.93
          40 |    748785.43
           4 |    743664.32
          60 |    738010.14
          86 |    715776.98
          43 |    684233.21
          65 |    673034.31
          52 |    672364.11
          93 |    672226.48
          64 |    668224.05
```

Figure 10: Hasil query



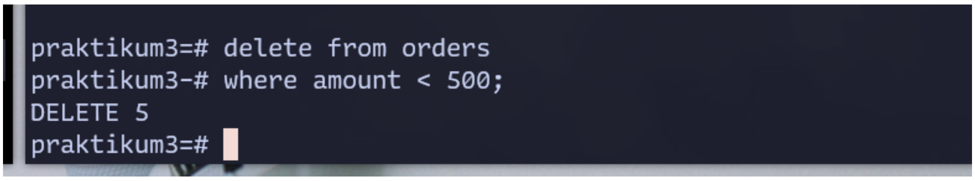
Flameshot Info
Capture saved as /home/shigure/Pictures/Screenshots/2024-10-04_21-35.png

```
      70 |     446416.34
      91 |     440682.10
      47 |     436280.69
      77 |     425768.03
      50 |     425339.66
      24 |     420438.96
      92 |     413419.00
      82 |     402539.26
      15 |     401518.69
      16 |     401073.65
      22 |     399717.46
      81 |     397776.02
      85 |     397372.02
      11 |     391135.97
      54 |     388340.94
      74 |     367553.13
      12 |     367213.96
      31 |     362382.21
      42 |     357480.18
      79 |     344646.46
      19 |     343868.37
      33 |     331033.53
      29 |     313699.74
      10 |     311681.50
      63 |     300120.52
      51 |     293635.50
      36 |     265536.39
      23 |     263362.32
       2 |     263077.05
      53 |     248027.89
       6 |     229232.79
      84 |     213916.21
      46 |     199217.58
      71 |     161860.32
      89 |     118039.91
      95 |     111179.72
(99 rows)

praktikum3=# 
```

Figure 11: Hasil query

3.7) Hapus semua transaksi yang nominalnya dibawah 500

```
delete from orders
where amount < 500;
```



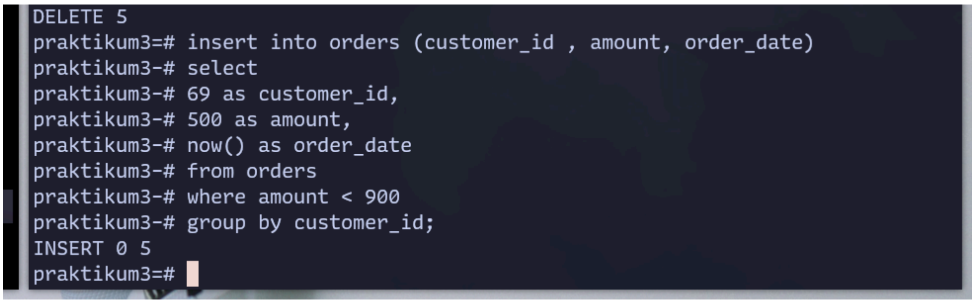
```
praktikum3=# delete from orders
praktikum3-# where amount < 500;
DELETE 5
praktikum3=# 
```

Figure 12: Hasil query

3.8) Masukkan beberapa tuple ke dalam order dengan amount berisi 500, order_date berisi waktu saat ini dan customer_id dimana pelanggan tersebut pernah melakukan transaksi dibawah 900, selesaikan menggunakan subquery insert

```
insert into orders (customer_id , amount, order_date)
select
69 as customer_id,
500 as amount,
now() as order_date
```

```
from orders
where amount < 900
group by customer_id;
```



```
DELETE 5
praktikum3=# insert into orders (customer_id , amount, order_date)
praktikum3-# select
praktikum3-# 69 as customer_id,
praktikum3-# 500 as amount,
praktikum3-# now() as order_date
praktikum3-# from orders
praktikum3-# where amount < 900
praktikum3-# group by customer_id;
INSERT 0 5
praktikum3=#
```

Figure 13: Hasil query

4) Komentar mengenai PRAKTIKUM

MANTAP PYUSINGGGG

tapi lumayan banget buat pengalaman buat memakai SQL langsung yang mana pada sistem aplikasi saat ini sudah di abstraksi dalam framework yang digunakan, dan juga susah banget kalau pake CLI langsung, GUI di linux jelek jelek