## **Exercise SQL**

Berikut dataset yang akan digunakan:

- 1. order\_detail
- 2. sku\_detail
- 3. customer detail
- 4. payment\_detail

Data yang digunakan adalah data yang berasal dari Kaggle: <u>Pakistan's Largest E-Commerce Dataset</u> dengan beberapa perubahan untuk dapat memudahkan dalam praktik dengan menggunakan sql. Harga yang tertera sudah dikonversi 1 Rupee sama dengan Rp 58. Mengenai penjelasan dataset adalah sebagai berikut:

#### order detail:

1. id → angka unik dari order / id\_order

2. customer\_id → angka unik dari pelanggan

3. order\_date → tanggal saat dilakukan transaksi

4. sku\_id → angka unik dari produk (sku adalah *stock keeping unit*)

7. before\_discount → nilai harga total dari produk (*price* \* *qty\_ordered*)

8. discount\_amount → nilai diskon product total

9. after\_discount → nilai harga total produk ketika sudah dikurangi dengan diskon

10. is\_gross → menunjukkan pelanggan belum membayar pesanan
 11. is\_valid → menunjukkan pelanggan sudah melakukan pembayaran

12. is\_net → menunjukkan transaksi sudah selesai
 13. payment\_id → angka unik dari metode pembayaran

#### sku detail:

1. id → angka unik dari produk (dapat digunakan untuk *key* saat join)

2. sku\_name → nama dari produk

3. base\_price 
 → harga barang yang tertera pada tagging harga / price
 4. cogs 
 → cost of goods sold / total biaya untuk menjual 1 produk

5. category → kategori produk

#### customer detail:

1. id → angka unik dari pelanggan

2. registered\_date → tanggal pelanggan mulai mendaftarkan diri sebagai anggota

## Payment\_detail:

1. id → angka unik dari metode pembayaran

payment\_method → metode pembayaran yang digunakan

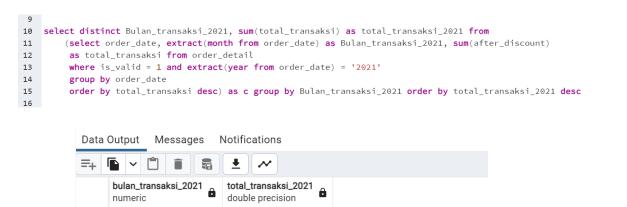
# Pertanyaan

## Nomor 1

Q: Selama transaksi yang terjadi selama 2021, pada bulan apa total nilai transaksi (after\_discount) paling besar? Gunakan **is\_valid = 1** untuk memfilter data transaksi.

Source table: order\_detail

## Jawab:



Jadi pada bulan **November** total nilai transaksi (after discount) paling besar

11

## Nomor 2

Q: Selama transaksi yang terjadi selama 2021, pada bulan apa total jumlah pelanggan (*unique*), total order (*unique*) dan total jumlah kuantitas produk paling banyak? Gunakan **is\_valid = 1** untuk memfilter data transaksi.

4783379762.460001

Source table: order\_detail

1

Jawab:

# • Total jumlah pelanggan (unique)

```
select distinct Bulan_transaksi_2021, sum(total_customer) as total_customer_2021 from

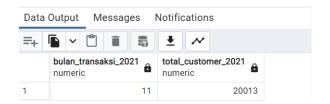
(select order_date, extract(month from order_date) as Bulan_transaksi_2021, count(distinct customer_id)

as total_customer from order_detail

where is_valid = 1 and extract(year from order_date) = '2021'

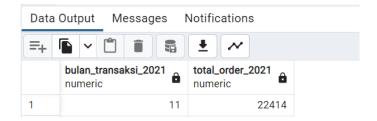
group by order_date

order by total_customer desc) as nt group by Bulan_transaksi_2021 order by total_customer_2021 desc
```



# • Total order (unique)

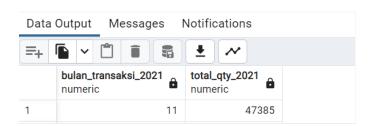
```
18
19 select distinct Bulan_transaksi_2021, sum(total_order) as total_order_2021 from
20 (select order_date, extract(month from order_date) as Bulan_transaksi_2021, count(distinct id)
21 as total_order from order_detail
22 where is_valid = 1 and extract(year from order_date) = '2021'
23 group by order_date
24 order by total_order desc) as nt group by Bulan_transaksi_2021 order by total_order_2021 desc
25
```



# Total jumlah kuantitas produk

```
select distinct Bulan_transaksi_2021, sum(total_qty) as total_qty_2021 from

(select order_date, extract(month from order_date) as Bulan_transaksi_2021, sum(qty_ordered)
as total_qty from order_detail
where is_valid = 1 and extract(year from order_date) = '2021'
group by order_date |
order by total_qty desc) as nt group by Bulan_transaksi_2021 order by total_qty_2021 desc
```



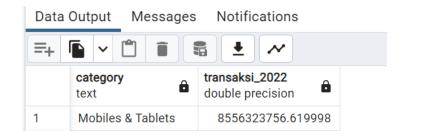
Untuk total jumlah pelanggan (unique), total order (unique), dan total jumlah kuantitas produk paling banyak terjadi pada bulan November

## Nomor 3

Q: Selama transaksi yang terjadi selama 2022, kategori apa yang menghasilkan nilai transaksi paling besar? Gunakan **is\_valid = 1** untuk memfilter data transaksi.

```
Source table: order_detail, sku_detail
```

#### Jawab:



#### Nomor 4

Q: Bandingkan nilai transaksi dari masing-masing kategori pada tahun 2021 dengan 2022. Sebutkan kategori apa saja yang mengalami peningkatan dan kategori apa yang mengalami penurunan nilai transaksi dari tahun 2021 ke 2022. Gunakan **is\_valid = 1** untuk memfilter data transaksi.

```
Source table: order_detail, sku_detail 
Jawab:
```

- Pada tahun 2021

```
select distinct category, sum(total_transaksi) as transaksi_2021

from (select category, sum(after_discount) as total_transaksi

from (select o.order_date, o.is_valid, o.after_discount, s.category from

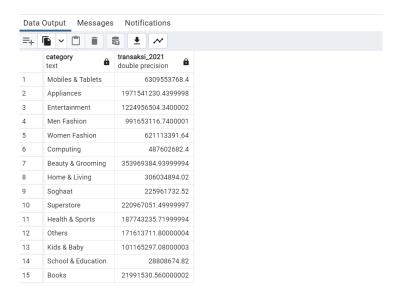
order_detail o

left join sku_detail s on o.sku_id = s.id) as nt

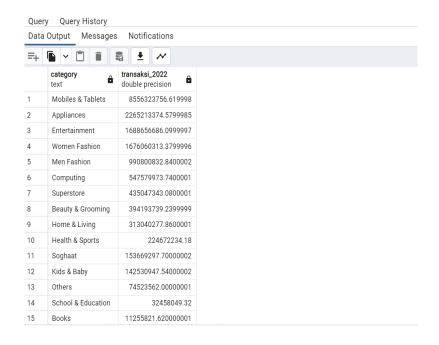
where is_valid = 1 and extract(year from order_date) = '2021' group by order_date,

category order by total_transaksi desc)

as a group by category order by transaksi_2021 desc
```



#### - Pada tahun 2022



Kategori yang mengalami peningkatan =

- Mobiles & Tablets
- Appliances
- Entertainment
- Women Fashion
- Computing
- Beauty & Grooming
- Home & Living
- Superstore
- Health & Sports
- Kids & Baby
- School & Education

Kategori yang mengalami penurunan =

- Men Fashion
- Soghaat
- Others
- Books

## Nomor 5

Q: Tampilkan Top 10 sku\_name (beserta kategorinya) berdasarkan nilai transaksi yang terjadi selama tahun 2022. Tampilkan juga total jumlah pelanggan (*unique*), total order (*unique*) dan total jumlah kuantitas. Gunakan **is\_valid = 1** untuk memfilter data transaksi.

Source table: order\_detail, sku\_detail Jawab:

#### Versi 1

```
Query Query History

36

37 select distinct sku as Sku_name, ca as Category, sum(total_transaksi) as transaksi_2022,

38 sum(cust) as customer, sum(order_id) as id_order, sum(Kuantitas) as quantity

39 from (select distinct sku_name as sku, category as ca, sum(after_discount) as total_transaksi,

40 count(distinct customer_id) as cust, count(distinct id) as order_id, sum(qty_ordered) as Kuantitas

41 from (select o.order_date, o.customer_id, o.id, o.is_valid, o.after_discount, o.qty_ordered,

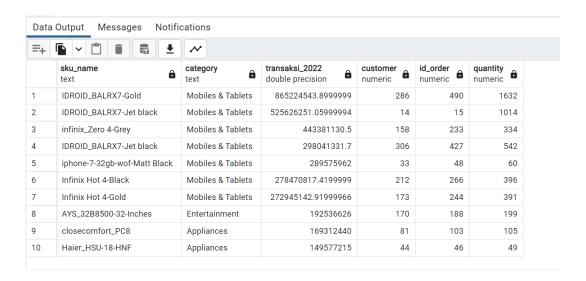
42 s.category, s.sku_name from order_detail o

43 left join sku_detail s on o.sku_id = s.id) as nt

44 where is_valid = 1 and extract(year from order_date) = '2022' group by

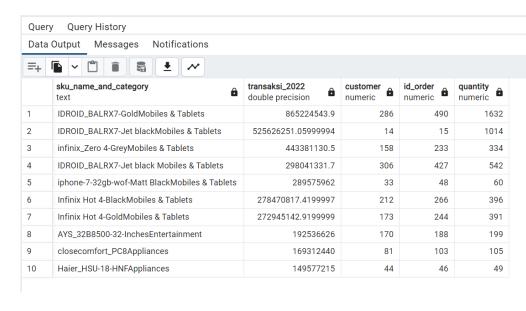
45 sku, ca order by total_transaksi desc) as nt2

46 group by Sku_name, Category order by transaksi_2022 desc limit 10
```



#### Versi 2

```
Query History
Query
24
25
    select distinct boths as Sku_name_and_Category, sum(total_transaksi) as transaksi_2022,
    sum(cust) as customer, sum(order_id) as id_order, sum(Kuantitas) as quantity
26
    from (select distinct concat(sku_name, category) as boths, sum(after_discount) as total_transaksi,
27
            \textbf{count}(\textbf{distinct} \ \texttt{customer\_id}) \ \textbf{as} \ \texttt{cust}, \ \textbf{count}(\textbf{distinct} \ \textbf{id}) \ \textbf{as} \ \texttt{order\_id}, \ \textbf{sum}(\texttt{qty\_ordered}) \ \textbf{as} \ \texttt{Kuantitas}
28
29
            from (select o.order_date, o.customer_id, o.id, o.is_valid, o.after_discount, o.qty_ordered,
                   s.category, s.sku_name from order_detail o
30
31
                   left join sku_detail s on o.sku_id = s.id) as nt
            where is_valid = 1 and extract(year from order_date) = '2022' group by
32
33
    boths order by total_transaksi desc) as nt2
34
    group by Sku_name_and_Category order by transaksi_2022 desc limit 10
35
```

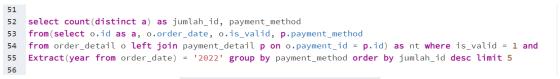


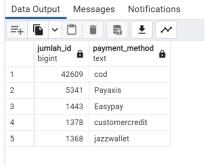
## Nomor 6

Q: Tampilkan top 5 metode pembayaran yang paling populer digunakan selama 2022 (berdasarkan total unique order). Gunakan **is\_valid = 1** untuk memfilter data transaksi.

Source table: order\_detail, payment\_method

#### Jawab:





# Nomor 7

Q: Urutkan dari ke-5 produk ini berdasarkan nilai transaksinya.

- 1. Samsung
- 2. Apple
- 3. Sony
- 4. Huawei
- 5. Lenovo

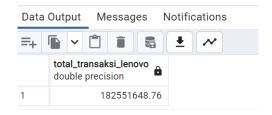
Gunakan is valid = 1 untuk memfilter data transaksi.

Source table: order\_detail, sku\_detail

#### Jawab:

```
3 select sum(jumlah_transaksi) as total_transaksi_samsung
4 from (select distinct id as order_id, sku_name, sum(after_discount) as jumlah_transaksi
         from(select o.order_date, o.customer_id, o.id, o.is_valid, o.after_discount, o.qty_ordered,
6 s.category, s.sku_name from order_detail o
7 left join sku_detail s on o.sku_id = s.id) as nt where sku_name like '%Samsung%'
         and category = 'Mobiles & Tablets' and is_valid = 1 group by sku_name, order_id
8
9 order by jumlah_transaksi desc) as nt2
10
11 select sum(jumlah_transaksi) as total_transaksi_apple
12 from (select distinct id as order_id, sku_name, sum(after_discount) as jumlah_transaksi
         from(select o.order_date, o.customer_id, o.id, o.is_valid, o.after_discount, o.qty_ordered,
13
14 s.category, s.sku_name from order_detail o
15 left join sku_detail s on o.sku_id = s.id) as nt where sku_name like '%Apple%' or sku_name like '%iphone%'
          and category = 'Mobiles & Tablets' and is_valid = 1 group by sku_name, order_id
17 order by jumlah_transaksi desc) as nt2
18
```

```
Query Query History
  17 select sum(jumlah_transaksi) as total_transaksi_sony
   18 from (select distinct id as order_id, sku_name, sum(after_discount) as jumlah_transaksi
            from(select o.order_date, o.customer_id, o.id, o.is_valid, o.after_discount, o.qty_ordered,
   20 s.category, s.sku_name from order_detail o
   21 left join sku_detail s on o.sku_id = s.id) as nt where sku_name like '%Sony%'
           and category = 'Mobiles & Tablets' and is_valid = 1 group by sku_name, order_id
   22
   23 order by jumlah_transaksi desc) as nt2
   24
   25 select sum(jumlah_transaksi) as total_transaksi_huawei
     from (select distinct id as order_id, sku_name, sum(after_discount) as jumlah_transaksi
   26
   27
            from(select o.order_date, o.customer_id, o.id, o.is_valid, o.after_discount, o.qty_ordered,
   28 s.category, s.sku_name from order_detail o
   29 left join sku_detail s on o.sku_id = s.id) as nt where sku_name like '%Huawei%'
            and category = 'Mobiles & Tablets' and is_valid = 1 group by sku_name, order_id
   30
   31 order by jumlah_transaksi desc) as nt2
  32
33
34
    select sum(jumlah_transaksi) as total_transaksi_lenovo
35
    from (select distinct id as order_id, sku_name, sum(after_discount) as jumlah_transaksi
36
           from(select o.order_date, o.customer_id, o.id, o.is_valid, o.after_discount, o.qty_ordered,
37
   s.category, s.sku name from order detail o
38 left join sku_detail s on o.sku_id = s.id) as nt where sku_name like '%Lenovo%'
           and category = 'Mobiles & Tablets' and is_valid = 1 group by sku_name, order_id
39
40
   order by jumlah_transaksi desc) as nt2
                                  Data Output
                                                 Messages
                                                               Notifications
                                  =+
                                        total_transaksi_samsung
                                        double precision
                                  1
                                              1715228695.3200002
                                                           Notifications
                                Data Output
                                              Messages
                                      total_transaksi_apple
                                      double precision
                                        3048031248.7799993
                                 Data Output
                                                              Notifications
                                                Messages
                                      total_transaksi_sony
                                        double precision
                                                      249400
                                Data Output
                                                Messages
                                                              Notifications
                                          ~ <u>"</u>
                                =+
                                       total_transaksi_huawei
                                       double precision
                                            665064080.6399992
```



Urutan dari ke - 5 produk berdasarkan nilai transaksi yang diperoleh :

- 1. Apple
- 2. Samsung
- Huawei
- 4. Lenovo
- Sony

## Nomor 8

Q: Seperti pertanyaan no. 3, buatlah perbandingan dari nilai profit tahun 2021 dan 2022 pada tiap kategori. Kemudian buatlah selisih % perbedaan profit antara 2021 dengan 2022 (profit = after\_discount - (cogs\*qty\_ordered))

Gunakan **is\_valid = 1** untuk memfilter data transaksi.

Source table: order\_detail, sku\_detail

#### Jawab:

```
select ca as category, total_profit_2021, total_profit_2022, (total_profit_2022 - total_profit_2021)/total_profit_2021

as perbedaan_profit from(select category as ca, sum(profit) as total_profit_2021

from (select order_date, category, (after_discount - (cogs*qty_ordered)) as profit

from (select o.order_date, o.is_valid, o.after_discount, o.qty_ordered, s.category, s.cogs

from order_detail o left join sku_detail s on o.sku_id = s.id)

as nt where is_valid = 1 and extract(year from order_date) = '2021') as nt2 group by ca

order by total_profit_2021 desc ) as subquery1

from (select category, sum(profit) as total_profit_2022

from (select o.order_date, category, (after_discount - (cogs*qty_ordered)) as profit

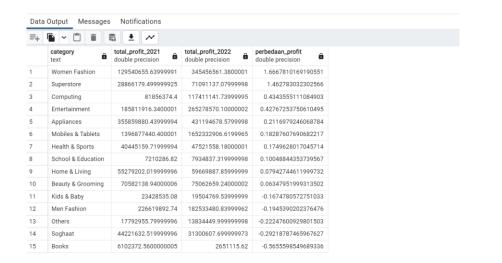
from (select o.order_date, o.is_valid, o.after_discount, o.qty_ordered, s.category, s.cogs

from order_detail o left join sku_detail s on o.sku_id = s.id)

as nt where is_valid = 1 and extract(year from order_date) = '2022') as nt2 group by category

order by total_profit_2022 desc) as subquery2 on subquery1.ca = subquery2.category

order by perbedaan_profit desc
```



## Nomor 9

Q: Tampilkan top 5 SKU dengan kontribusi profit paling tinggi di tahun 2022 berdasarkan kategori paling besar pertumbuhan profit dari 2021 ke 2022 (berdasarkan hasil no 8).

Gunakan is\_valid = 1 untuk memfilter data transaksi.

Source table: order\_detail, sku\_detail

## Jawab:

```
72
73 select sku_name, sum(profit) as total_profit from(
74 select Extract(year from order_date), sku_name, category, (after_discount - (cogs*qty_ordered)) as profit
75 from (select o.order_date, o.is_valid, o.after_discount, o.qty_ordered, s.category, s.cogs, s.sku_name
76 from order_detail o left join sku_detail s on o.sku_id = s.id) as nt where is_valid = 1
77 and extract(year from order_date) = '2022' and category = 'Women Fashion' order by profit desc) as nt group by sku_name
78 order by total_profit desc limit 5
```

Data	Output Messages	Notifications
=+		
	sku_name text	total_profit double precision
1	sanasafinaz_SS-3A	3498908
2	sanasafinaz_SS-9B	3153692
3	sanasafinaz_SS-13A	3013622
4	sanasafinaz_SS-5B	2902320
5	sanasafinaz_SS-10A	2871696

## Nomor 10

Q: Tampilkan jumlah unique order yang menggunakan top 5 metode pembayaran (soal no 6) berdasarkan kategori produk selama tahun 2022.

Gunakan is\_valid = 1 untuk memfilter data transaksi.

Source table: order detail, sku detail

#### Jawab:

```
81 select category, sum(jumlah) as jumlah_order_COD from(
82 select category, count(distinct id) as jumlah, payment_method
83 from(select o.order_date, o.is_valid, o.id, o.after_discount, o.qty_ordered, s.category, s.cogs, s.sku_name,
p.payment_method from order_detail o
85 left join sku_detail s on o.sku_id = s.id
86 left join payment_detail p on o.payment_id = p.id) as nt where is_valid = 1 and
87 Extract(year from order_date) = '2022' group by category, payment_method) as nt2 where payment_method = 'cod'
88 group by category order by jumlah_order_COD desc
89
90 select category, sum(jumlah) as jumlah_order_payaxis from(
91 select category, count(distinct id) as jumlah, payment_method
92 from(select o.order_date, o.is_valid, o.id, o.after_discount, o.qty_ordered, s.category, s.cogs, s.sku_name,
93 p.payment_method from order_detail o
94 left join sku_detail s on o.sku_id = s.id
95 left join payment_detail p on o.payment_id = p.id) as nt where is_valid = 1 and
96 Extract(year from order_date) = '2022' group by category, payment_method) as nt2 where payment_method = 'Payaxis'
97 group by category order by jumlah_order_payaxis desc
```

```
99 select category, sum(jumlah) as jumlah_order_Easypay from(
select category, count(distinct id) as jumlah, payment_method
101 from(select o.order_date, o.is_valid, o.id, o.after_discount, o.qty_ordered, s.category, s.cogs, s.sku_name,
p.payment_method from order_detail o
103 left join sku_detail s on o.sku_id = s.id
left join payment_detail p on o.payment_id = p.id) as nt where is_valid = 1 and
105 Extract(year from order_date) = '2022' group by category, payment_method) as nt2 where payment_method = 'Easypay'
106 group by category order by jumlah_order_Easypay desc
107
select category, sum(jumlah) as jumlah_order_Customercredit from(
109 select category, count(distinct id) as jumlah, payment_method
110 from(select o.order_date, o.is_valid, o.id, o.after_discount, o.qty_ordered, s.category, s.cogs, s.sku_name,
p.payment_method from order_detail o
112 left join sku_detail s on o.sku_id = s.id
left join payment_detail p on o.payment_id = p.id) as nt where is_valid = 1 and
114 Extract(year from order_date) = '2022' group by category, payment_method) as nt2 where payment_method = 'customercredit'
group by category order by jumlah_order_Customercredit desc
116
```

```
select category, sum(jumlah) as jumlah_order_jazzwallet from(
select category, count(distinct id) as jumlah, payment_method

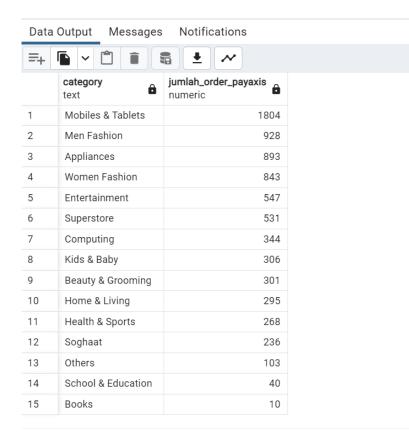
from(select o.order_date, o.is_valid, o.id, o.after_discount, o.qty_ordered, s.category, s.cogs, s.sku_name,
p.payment_method from order_detail o

left join sku_detail s on o.sku_id = s.id

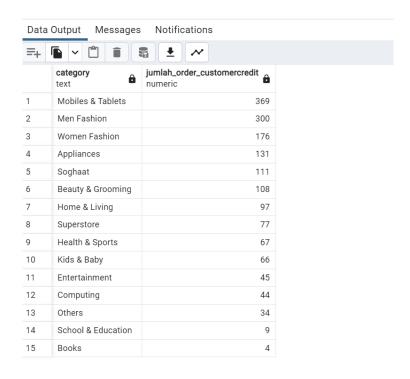
left join payment_detail p on o.payment_id = p.id) as nt where is_valid = 1 and

Extract(year from order_date) = '2022' group by category, payment_method) as nt2 where payment_method = 'jazzwallet'
group by category order by jumlah_order_jazzwallet desc
```

Data	Data Output Messages Notifications				
=+					
	category text	jumlah_order_cod numeric			
1	Men Fashion	10510			
2	Mobiles & Tablets	9853			
3	Women Fashion	7599			
4	Beauty & Grooming	4125			
5	Home & Living	3314			
6	Soghaat	3065			
7	Appliances	2808			
8	Kids & Baby	2635			
9	Health & Sports	2440			
10	Superstore	2138			
11	Computing	1287			
12	Entertainment	1152			
13	Others	1066			
14	School & Education	457			
15	Books	336			



Data	Data Output Messages Notifications			
=+				
	category text	jumlah_order_easypay numeric		
1	Mobiles & Tablets	618		
2	Women Fashion	201		
3	Men Fashion	186		
4	Appliances	175		
5	Entertainment	129		
6	Beauty & Grooming	85		
7	Computing	82		
8	Kids & Baby	81		
9	Superstore	81		
10	Home & Living	74		
11	Soghaat	63		
12	Health & Sports	41		
13	Others	35		
14	School & Education	11		
15	Books	4		



# Data Output Messages Notifications

