# Tạo các bảng cần thiết

​​-- bảng target model lại data tổng toàn hàng

**create** **table** finalproject.wide\_report(

area\_code **varchar**(1024),

kpi\_month **int8**,

report\_id **int8**,

total\_value **decimal**

) ;

--bảng target index\_fin của toan hang

**create** **table** finalproject.finance\_metrics\_wide(

area\_code **varchar**(1024),

kpi\_month **int8**,

cir **float8**,

change\_cir **float8**,

margin **float8**,

change\_margin **float8**,

return\_of\_capital **float8**,

change\_roc **float8**,

avg\_profit\_per\_employee **float8**,

change\_appe **float8**

);

-- bảng target model lại data từng khu vực ( tách bỏ tháng cộng dồn )

**create** **table** finalproject.report\_model\_region(

area\_code **varchar**(1024),

kpi\_month **int8**,

report\_id **int8**,

total\_value **decimal**

) ;

-- bảng target model lại data toan hang ( tách bỏ tháng cộng dồn )

**create** **table** finalproject.report\_model\_wide(

area\_code **varchar**(1024),

kpi\_month **int8**,

report\_id **int8**,

total\_value **decimal**

) ;

# Tạo Procedure

**create** **or** **replace** **procedure** finalproject.model\_data(in\_date **date** )

**as**

**$$**

**declare**

v\_in\_date\_month **int8**; -- bien luu namthang dang YYYYMM

**begin**

v\_in\_date\_month := **cast**(**substring**(**to\_char**(in\_date,'YYYYMMDD') **from** 1 **for** 6) **as** **int8**);

--B0. xoa du lieu cu

**truncate** finalproject.wide\_report;

**delete** **from** finalproject.finance\_metrics\_wide **where** kpi\_month = v\_in\_date\_month;

**truncate** finalproject.report\_model\_region;

**truncate** finalproject.report\_model\_wide ;

-- B1. insert vào bảng wide\_report ( bảng tổng toàn hàng )

**insert** **into** finalproject.wide\_report

(area\_code, kpi\_month, report\_id, total\_value)

**SELECT**

'ALL' **AS** area\_code,

kpi\_month,

report\_id,

**SUM**(total\_value) **AS** total\_value

**from** finalproject.report\_tong\_hop

**where** area\_code <> 'A'

**group** **by** kpi\_month, report\_id

**order** **by** kpi\_month, report\_id

;

-- B1.2. insert vao bang cac chi so tai chinh

**insert** **into** finalproject.finance\_metrics\_wide

(area\_code, kpi\_month, cir, margin, return\_of\_capital, avg\_profit\_per\_employee)

**SELECT**

x.area\_code,

x.kpi\_month,

**CASE** **WHEN** y.total\_operating\_income = 0 **THEN** 0

**ELSE** -((x.total\_operating\_expenses\*100)::**float8** / (y.total\_operating\_income) )

**END** **AS** cir,

**CASE** **WHEN** q.tong\_mau\_margin = 0 **THEN** 0

**ELSE** ((z.profit\_bef\_tax\*100)::**float8** / (q.tong\_mau\_margin) )

**END** **AS** margin,

**CASE** **WHEN** w.net\_operating\_expenses = 0 **THEN** 0

**ELSE** -((z.profit\_bef\_tax\*100)::**float8** / (w.net\_operating\_expenses) )

**END** **AS** return\_of\_capital,

**CASE** **WHEN** e.so\_nhan\_vien\_toan\_hang = 0 **THEN** 0

**ELSE** ((z.profit\_bef\_tax)::**float8** / (e.so\_nhan\_vien\_toan\_hang) )

**END** **AS** avg\_profit\_per\_employee

**from**

( -- tong cp hoat dong

**select** area\_code,

kpi\_month,

total\_value **as** total\_operating\_expenses

**from** finalproject.wide\_report

**where** (report\_id = 21) **and** kpi\_month = v\_in\_date\_month

)x

**join**

( -- tong thu nhap hd

**select** area\_code,

kpi\_month,

total\_value **as** total\_operating\_income

**from** finalproject.wide\_report

**where** (report\_id = 20) **and** kpi\_month = v\_in\_date\_month

)y **on** x.area\_code = y.area\_code **and** x.kpi\_month = y.kpi\_month

**join**

( -- loi nhuan truoc thue

**select** area\_code,

kpi\_month,

total\_value **as** profit\_bef\_tax

**from** finalproject.wide\_report

**where** (report\_id = 1) **and** kpi\_month = v\_in\_date\_month

)z **on** z.area\_code = y.area\_code **and** z.kpi\_month = y.kpi\_month

**join**

( -- tong : r.thu\_nhap\_tu\_hd\_the+ r.dt\_nguon\_von + r.dt\_fintech + r.dt\_tieu\_thuong\_ca\_nhan + r.dt\_kinh\_doanh

**select** area\_code,

kpi\_month,

**sum**(total\_value) **as** tong\_mau\_margin

**from** finalproject.wide\_report

**where** (report\_id **in** (2,9,14,15,16)) **and** kpi\_month = v\_in\_date\_month

**group** **by** area\_code,kpi\_month

)q **on** z.area\_code = q.area\_code **and** z.kpi\_month = q.kpi\_month

**join**

( -- chi\_phi\_thuan\_kdv

**select** area\_code,

kpi\_month,

total\_value **as** net\_operating\_expenses

**from** finalproject.wide\_report

**where** (report\_id = 8) **and** kpi\_month = v\_in\_date\_month

)w **on** w.area\_code = q.area\_code **and** w.kpi\_month = q.kpi\_month

**join**

( -- so\_nhan\_vien

**select** v\_in\_date\_month **as** kpi\_month, **count**(**distinct** k.email) **as** so\_nhan\_vien\_toan\_hang

**from** finalproject.kpi\_asm\_data k

**where** (v\_in\_date\_month = '202301' **and** jan\_ltn **is** **not** **null**) **or** (v\_in\_date\_month = '202302' **and** feb\_ltn **is** **not** **null**) **or**

(v\_in\_date\_month = '202303' **and** mar\_ltn **is** **not** **null**) **or** (v\_in\_date\_month = '202304' **and** apr\_ltn **is** **not** **null**)

**or** (v\_in\_date\_month = '202305' **and** may\_ltn **is** **not** **null**)

)e **on** w.kpi\_month = e.kpi\_month

;

-- update change growth trong finalproject.finance\_metrics\_wide

**update** finalproject.finance\_metrics\_wide f2

**set** change\_cir = 0,

change\_margin = 0,

change\_roc = 0,

change\_appe = 0

**from** finalproject.finance\_metrics\_wide f1

**where** f2.kpi\_month = 202301 **and** f2.area\_code = f1.area\_code

;

**update** finalproject.finance\_metrics\_wide f2

**set** change\_cir = f2.cir - f1.cir,

change\_margin = f2.margin - f1.margin,

change\_roc = f2.return\_of\_capital - f1.return\_of\_capital,

change\_appe = (f2.avg\_profit\_per\_employee - f1.avg\_profit\_per\_employee) / f1.avg\_profit\_per\_employee

**from** finalproject.finance\_metrics\_wide f1

**where** f2.kpi\_month = f1.kpi\_month + 1 **and** f2.area\_code = f1.area\_code

;

-- B2.insert vào bảng model lại từng tháng theo khu vực ( tách cộng dồn ra )

--B2.1. INSERT thang 2-5 truoc

**insert** **into** finalproject.report\_model\_region

( area\_code, kpi\_month, report\_id, total\_value)

--lay ra gia tri khi chua cong don cua thang 2,3,4,5

**select** r2.area\_code,

r2.kpi\_month,

r2.report\_id,

r2.total\_value - r1.total\_value **as** total\_value

**from** finalproject.report\_tong\_hop r1

**join** finalproject.report\_tong\_hop r2 **on** r1.report\_id = r2.report\_id **and** r1.area\_code = r2.area\_code **and** r2.kpi\_month = r1.kpi\_month + 1

;

-- B2.2.insert thang 1

**insert** **into** finalproject.report\_model\_region

( area\_code, kpi\_month, report\_id, total\_value)

-- lay gia tri cua thang 1 ( original)

**select** \*

**from** finalproject.report\_tong\_hop r

**where** r.kpi\_month = 202301

;

-- B3. insert vao bang model lại từng tháng toan hang ( tách cộng dồn ra )

-- B3.1. insert vao thang 2-> 5 truoc

**insert** **into** finalproject.report\_model\_wide

( area\_code, kpi\_month, report\_id, total\_value)

--lay ra gia tri khi chua cong don cua thang 2,3,4,5

**select** w2.area\_code,

w2.kpi\_month,

w2.report\_id,

w2.total\_value - w1.total\_value **as** total\_value

**from** finalproject.wide\_report w1

**join** finalproject.wide\_report w2 **on** w1.report\_id = w2.report\_id **and** w2.kpi\_month = w1.kpi\_month + 1

;

-- B2.2.insert thang 1

**insert** **into** finalproject.report\_model\_wide

( area\_code, kpi\_month, report\_id, total\_value)

-- lay gia tri cua thang 1 ( original)

**select** \*

**from** finalproject.wide\_report w

**where** w.kpi\_month = 202301

;

**end**;

**$$** **language** plpgsql ;

**call** finalproject.model\_data('2023-01-31') ;

# Viết các Direct Query

-- format lai finalproject.report\_model\_region

**select** r.kpi\_month,

d.**name** **as** tieu\_chi,

**max**(**case**

**when** r.area\_code = 'A' **then** **coalesce**(r.total\_value,0)

**end** ) **as** **"Hội Sở"**,

**max**(**case**

**when** r.area\_code = 'B' **then** **coalesce**(r.total\_value,0)

**end** ) **as** **"Đông Bắc Bộ"**,

**max**(**case**

**when** r.area\_code = 'C' **then** **coalesce**(r.total\_value,0)

**end** ) **as** **"Tây Bắc Bộ"**,

**max**(**case**

**when** r.area\_code = 'D' **then** **coalesce**(r.total\_value,0)

**end** ) **as** **"Đồng Bằng Sông Hồng"**,

**max**( **case**

**when** r.area\_code = 'E' **then** **coalesce**(r.total\_value,0)

**end** ) **as** **"Bắc Trung Bộ"**,

**max**(**case**

**when** r.area\_code = 'F' **then** **coalesce**(r.total\_value,0)

**end**) **as** **"Nam Trung Bộ"**,

**max**(**case**

**when** r.area\_code = 'G' **then** **coalesce**(r.total\_value,0)

**end** ) **as** **"Tây Nam Bộ"**,

**max**(**case**

**when** r.area\_code = 'H' **then** **coalesce**(r.total\_value,0)

**end**) **as** **"Đông Nam Bộ"**

**from** finalproject.report\_model\_region r

**join** finalproject.dim\_rpt\_criteria\_structure d **on** r.report\_id = d.report\_id

**group** **by** r.kpi\_month,d.**name**,d.sortorder

**order** **by** r.kpi\_month **asc**, d.sortorder **asc**

;

-- format lai bang wide\_report

**select** r.kpi\_month,

d.**name** **as** tieu\_chi,

**max**(**case**

**when** r.area\_code = 'ALL' **then** **coalesce**(r.total\_value,0)

**end** ) **as** **"Toàn hàng"**

**from** finalproject.wide\_report r

**join** finalproject.dim\_rpt\_criteria\_structure d **on** r.report\_id = d.report\_id

**group** **by** r.kpi\_month,d.**name**,d.sortorder

**order** **by** r.kpi\_month **asc**, d.sortorder **asc**

;

-- format lai bang finalproject.report\_model\_wide

**select** r.kpi\_month,

d.**name** **as** tieu\_chi,

**max**(**case**

**when** r.area\_code = 'ALL' **then** **coalesce**(r.total\_value,0)

**end** ) **as** **"Toàn hàng"**

**from** finalproject.report\_model\_wide r

**join** finalproject.dim\_rpt\_criteria\_structure d **on** r.report\_id = d.report\_id

**group** **by** r.kpi\_month,d.**name**,d.sortorder

**order** **by** r.kpi\_month **asc**, d.sortorder **asc**

;