# **Tạo các bảng cần thiết**

-- bang hach toan chinh xac card income

**create** **table** finalproject.tmp\_accurate\_accounting\_card\_income(

kpi\_month **int8**,

report\_id **int8**,

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

total\_value **decimal**

);

-- bang dnck binh quan sau wo nhom 1

**create** **table** finalproject.tmp\_total\_os\_db\_grp\_1\_after\_wo(

kpi\_month **int8**,

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

avg\_total\_os\_area **decimal**,

avg\_total\_os\_all **decimal**

);

-- bang dnck binh quan sau wo nhom 2

**create** **table** finalproject.tmp\_total\_os\_db\_grp\_2\_after\_wo(

kpi\_month **int8**,

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

avg\_total\_os\_area **decimal**,

avg\_total\_os\_all **decimal**

);

--bang dnck binh quan sau wo nhom 2 -> 5

**create** **table** finalproject.tmp\_total\_os\_db\_grp\_2\_to\_5\_after\_wo(

kpi\_month **int8**,

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

avg\_total\_os\_area **decimal**,

avg\_total\_os\_all **decimal**

);

-- bang so luong the psdn

**create** **table** finalproject.the\_psdn(

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

kpi\_month **int8**,

so\_the\_psdn **int8**,

so\_the\_psdn\_toan\_hang **int8**

);

-- report 1

**create** **table** finalproject.report\_tong\_hop(

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

kpi\_month **int8**,

report\_id **int8**,

total\_value **decimal**

) ;

--bảng hạch toán chính xác các tiêu chí về chi phí kinh doanh vốn các khu vực

**create** **table** finalproject.tmp\_accurate\_accounting\_captial\_business(

kpi\_month **int8**,

report\_id **int8**,

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

total\_value **decimal**

);

--bảng tỷ lệ phân bổ tiêu chí trong chi phí kinh doanh vốn các khu vực

**create** **table** finalproject.tmp\_allocate\_capital\_business(

kpi\_month **int8**,

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

card\_income **decimal**,

interest\_credit\_card **decimal**

);

--bảng hạch toán chính xác tiêu chí trong chi phí thuần hoạt động khác

**create** **table** finalproject.tmp\_accurate\_accounting\_net\_other\_operating\_expenses(

kpi\_month **int8**,

report\_id **int8**,

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

total\_value **decimal**

);

--bảng tỷ lệ phân bổ tiêu chí trong chi phí thuần hoạt động khác

**create** **table** finalproject.tmp\_total\_os\_db\_after\_wo(

kpi\_month **int8**,

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

avg\_total\_os\_area **decimal**,

avg\_total\_os\_all **decimal**

);

-- bảng so\_nhan\_vien

**create** **table** finalproject.number\_of\_employees(

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

kpi\_month **int8**,

no\_of\_employees\_area **int8**,

no\_of\_employees\_all **int8**

);

--bảng hạch toán chính xác trong tổng chi phí hoạt động

**create** **table** finalproject.tmp\_accurate\_accounting\_operating\_expenses(

kpi\_month **int8**,

report\_id **int8**,

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

total\_value **decimal**

);

---- chi phi du phong

--bảng hạch toán chính xác trong chi phí dự phòng

**create** **table** finalproject.tmp\_accurate\_accounting\_provision\_expenses(

kpi\_month **int8**,

report\_id **int8**,

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

total\_value **decimal**

);

-- bang wo luy ke

**create** **table** finalproject.wo\_by\_month(

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

kpi\_month **int8**,

write\_off\_month **int8**,

wo\_by\_month **decimal**,

wo\_luyke **decimal**

);

-- bang dnck truoc wo

**create** **table** finalproject.os\_bef\_wo(

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

kpi\_month **int8**,

os\_bef\_wo **decimal**,

avg\_total\_os\_all **decimal**

);

-- bang dnck truoc wo binh quan

**create** **table** finalproject.total\_os\_bef\_wo(

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

kpi\_month **int8**,

total\_os\_area\_bef\_wo **decimal**,

total\_os\_all **decimal**

);

--bang cac chi so tai chinh

**create** **table** finalproject.index\_finance(

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

kpi\_month **int8**,

cir **decimal**,

change\_cir **float8**,

margin **decimal**,

change\_margin **float8**,

return\_of\_capital **decimal**,

change\_roc **float8**,

avg\_profit\_per\_employee **decimal**,

change\_appe **float8**

);

-- bang SDCK sau wo

**create** **table** finalproject.os\_after\_wo

(

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

kpi\_month **int8**,

total\_os\_area **decimal**,

total\_os\_all **decimal**

);

-- insert vao bang npl\_truoc\_wo\_luy\_ke

**create** **table** finalproject.npl\_truoc\_wo\_luy\_ke

(

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

kpi\_month **int8**,

npl\_bef\_wo **float8**

);

-- bang target report 2

**create** **table** finalproject.report\_rank\_asm(

kpi\_month **int8**,

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

sale\_name **varchar**(1024),

email **varchar**(1024),

report\_id **int8**,

total\_value **decimal**

);

# **Tạo Stored Procedure**

**create** **or** **replace** **procedure** finalproject.report\_tong\_hop\_T2\_prc(in\_date **date** )

**as**

**$$**

**declare**

v\_begining\_year **date**; -- bien luu ngay dau nam dang YYYY-MM-DD

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

v\_begining\_month\_of\_year **int8**; -- bien luu namthang dau nam : YYYY01

v\_start\_time **timestamp** ; -- bien luu thoi gian bat dau chay procedure

**begin**

-- ---------------------

-- THÔNG TIN NGƯỜI TẠO

-- ---------------------

-- Tên người tạo: Phung Khanh Linh

-- Ngày tạo: 21/01/2025

-- ---------------------

-- THÔNG TIN NGƯỜI CẬP NHẬT

-- ---------------------

-- Tên người cập nhật: Phung Khanh Linh

-- Ngày cập nhật: 26/02/2025

-- Mục đích cập nhật: Thêm cột sale\_name vào bảng report\_rank\_asm

-- ---------------------

-- SUMMARY LUỒNG XỬ LÝ

-- ---------------------

-- Bước 1: khởi tạo thời gian bắt đầu , thêm thời giam bắt đầu chạy procedure vao bảng log tracking

-- Bước 2: gán giá trị cho các biến

-- Bước 3: xoá dữ liệu các bảng cũ

-- Bước 4: thu nhập từ hoạt động thẻ

-- 4.1. insert vào bảng hạch toán chính xác các tiêu chí trong thu nhập từ hoạt động thẻ các khu vực

-- 4.2. insert vào bảng tỷ lệ phân bổ tiêu chí trong thu nhập từ hoạt động thẻ các khu vực

-- 4.3. insert vào bảng report 1 cac tieu chi cua thu nhập từ hoạt động thẻ

-- bước 5: chi phí kinh doanh vốn

-- 5.1. insert vào bảng hạch toán chính xác các tiêu chí về chi phí kinh doanh vốn các khu vực

-- 5.2. insert vào bảng tỷ lệ phân bổ tiêu chí trong chi phí kinh doanh vốn các khu vực

-- 5.3. insert vào bảng report 1 cac tieu chi cua chi phí kinh doanh vốn

-- bước 6: chi phí thuần hoạt động khác

-- 6.1. insert vào bảng hạch toán chính xác tiêu chí trong chi phí thuần hoạt động khác

-- 6.2. insert vào bảng tỷ lệ phân bổ tiêu chí trong chi phí thuần hoạt động khác

-- 6.3. insert vào bảng report 1 cac tieu chi cua chi phí thuần hoạt động khác

-- bước 7: tổng chi phí hoạt động

-- 7.1. insert vào bảng so\_nhan\_vien ( đây cũng là bảng sử dụng để phân bổ )

-- 7.2. insert vào bảng hạch toán chính xác trong tổng chi phí hoạt động

-- 7.3. insert vào bảng report 1 cac tieu chi cua tổng chi phí hoạt động

-- bước 8: chi phí dự phòng

-- 8.1. insert vào bảng hạch toán chính xác trong chi phí dự phòng

-- 8.2. insert vào bảng tỷ lệ phân bổ tiêu chí trong chi phí dự phòng

-- 8.3. insert vào bảng report 1 cac tieu chi cua chi phí dự phòng

-- bước 9: insert vào report level 1 va 0

-- Buoc 10. insert vao report tieu chi hoi so 'A'

-- bước 11 : insert vao bang cac chi so tai chinh

-- B12. REPORT 2 : insert vao report 2

-- 12.1. insert vao bang report 2

-- id ve quy mo

-- id ve tai chinh

-- B13. ghi thoi gian bat dau va ket thuc chay procedure , xu ly ngoai le va ghi loi

-- ---------------------

-- CHI TIẾT CÁC BƯỚC

-- ---------------------

-- B1. ghi nhan tg bat dau chay procedure

v\_start\_time := **clock\_timestamp**() ; -- khoi tao tg bat dau chay procedure

-- Ghi nhận thời gian bắt đầu chạy procedure

**INSERT** **INTO** finalproject.log\_tracking

(procedure\_name, start\_time, is\_successful, rec\_created\_dt)

**VALUES** ( 'report\_tong\_hop\_T2\_prc', **clock\_timestamp**() , **NULL**, **now**() );

--B2.định nghĩa các biến

v\_begining\_year := **date\_trunc**('year',in\_date);

v\_begining\_month\_of\_year := **cast**(**substring**(**to\_char**(v\_begining\_year,'YYYYMM') **from** 1 **for** 6) **as** **int8**);

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

-- B3. xoa du lieu ngay cu di

-- xoa cac bang lq den report 1

**truncate** **table** finalproject.tmp\_accurate\_accounting\_card\_income;

**truncate** **table** finalproject.tmp\_total\_os\_db\_grp\_1\_after\_wo;

**truncate** **table** finalproject.tmp\_total\_os\_db\_grp\_2\_after\_wo;

**truncate** **table** finalproject.tmp\_total\_os\_db\_grp\_2\_to\_5\_after\_wo;

**truncate** **table** finalproject.the\_psdn ;

**truncate** **table** finalproject.tmp\_accurate\_accounting\_captial\_business;

**truncate** **table** finalproject.tmp\_allocate\_capital\_business;

**truncate** **table** finalproject.tmp\_accurate\_accounting\_net\_other\_operating\_expenses;

**truncate** **table** finalproject.tmp\_total\_os\_db\_after\_wo;

**delete** **from** finalproject.number\_of\_employees **where** kpi\_month = v\_in\_date\_month ;

**truncate** **table** finalproject.tmp\_accurate\_accounting\_operating\_expenses;

**truncate** **table** finalproject.tmp\_accurate\_accounting\_provision\_expenses;

**truncate** **table** finalproject.wo\_by\_month;

**truncate** **table** finalproject.os\_bef\_wo;

**truncate** **table** finalproject.total\_os\_bef\_wo;

**delete** **from** finalproject.index\_finance **where** kpi\_month = v\_in\_date\_month;

**delete** **from** finalproject.report\_tong\_hop **where** kpi\_month = v\_in\_date\_month;

-- xoa cac bang lq den report 2

**truncate** **table** finalproject.os\_after\_wo ;

**truncate** **table** finalproject.npl\_truoc\_wo\_luy\_ke;

**delete** **from** finalproject.report\_rank\_asm **where** kpi\_month = v\_in\_date\_month;

-- Bước 4: thu nhập từ hoạt động thẻ

-- 4.1. insert vào bảng hạch toán chính xác các tiêu chí trong thu nhập từ hoạt động thẻ các khu vực

**insert** **into** finalproject.tmp\_accurate\_accounting\_card\_income

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

-- hach toan chinh xac lai trong han cac khu vuc

**select** v\_in\_date\_month **as** kpi\_month,

3 **as** report\_id,

**substring**(f.analysis\_code,9,1) **as** area\_code,

**sum**(f.amount) **as** total\_value

**from** finalproject.fact\_txn\_month\_raw\_data f

**where** (f.transaction\_date **between** v\_begining\_year **and** in\_date) **and** f.analysis\_code **like** 'DVML%'

**and** f.account\_code **in** ('702000030002','702000030001','702000030102')

**group** **by** **substring**(f.analysis\_code,9,1)

**union**

-- hach toan chinh xac lai trong han cua head

**select** v\_in\_date\_month **as** kpi\_month,

3 **as** report\_id,

'A' **as** area\_code,

**sum**(f.amount) **as** total\_value

**from** finalproject.fact\_txn\_month\_raw\_data f

**where** (f.transaction\_date **between** v\_begining\_year **and** in\_date) **and** analysis\_code **like** 'HEAD%'

**and** f.account\_code **in** ('702000030002','702000030001','702000030102')

**union**

-- hach toan chinh xac lai qua han cac khu vuc

**select** v\_in\_date\_month **as** kpi\_month,

4 **as** report\_id,

**substring**(f.analysis\_code,9,1) **as** area\_code,

**sum**(f.amount) **as** total\_value

**from** finalproject.fact\_txn\_month\_raw\_data f

**where** (f.transaction\_date **between** v\_begining\_year **and** in\_date) **and** analysis\_code **like** 'DVML%'

**and** f.account\_code **in** ('702000030012','702000030112')

**group** **by** **substring**(f.analysis\_code,9,1)

**union**

-- hach toan chinh xac lai qua han cua head

**select** v\_in\_date\_month **as** kpi\_month,

4 **as** report\_id,

'A' **as** area\_code,

**sum**(f.amount) **as** total\_value

**from** finalproject.fact\_txn\_month\_raw\_data f

**where** (f.transaction\_date **between** v\_begining\_year **and** in\_date) **and** analysis\_code **like** 'HEAD%'

**and** f.account\_code **in** ('702000030012','702000030112')

**union**

-- hach toan chinh xac phi bao hiem cac khu vuc

**select** v\_in\_date\_month **as** kpi\_month,

5 **as** report\_id,

**substring**(f.analysis\_code,9,1) **as** area\_code,

**sum**(f.amount) **as** total\_value

**from** finalproject.fact\_txn\_month\_raw\_data f

**where** (f.transaction\_date **between** v\_begining\_year **and** in\_date) **and** analysis\_code **like** 'DVML%'

**and** f.account\_code **in** ('716000000001')

**group** **by** **substring**(f.analysis\_code,9,1)

**union**

-- hach toan chinh xac phi bao hiem cua head

**select** v\_in\_date\_month **as** kpi\_month,

5 **as** report\_id,

'A' **as** area\_code,

**sum**(f.amount) **as** total\_value

**from** finalproject.fact\_txn\_month\_raw\_data f

**where** (f.transaction\_date **between** v\_begining\_year **and** in\_date) **and** analysis\_code **like** 'HEAD%'

**and** f.account\_code **in** ('716000000001')

**union**

-- hach toan chinh xac phi tang han muc cac khu vuc

**select** v\_in\_date\_month **as** kpi\_month,

6 **as** report\_id,

**substring**(f.analysis\_code,9,1) **as** area\_code,

**sum**(f.amount) **as** total\_value

**from** finalproject.fact\_txn\_month\_raw\_data f

**where** (f.transaction\_date **between** v\_begining\_year **and** in\_date) **and** analysis\_code **like** 'DVML%'

**and** f.account\_code **in** ('719000030002')

**group** **by** **substring**(f.analysis\_code,9,1)

**union**

-- hach toan chinh xac phi tang han muc cua head

**select** v\_in\_date\_month **as** kpi\_month,

6 **as** report\_id,

'A' **as** area\_code,

**sum**(f.amount) **as** total\_value

**from** finalproject.fact\_txn\_month\_raw\_data f

**where** (f.transaction\_date **between** v\_begining\_year **and** in\_date) **and** analysis\_code **like** 'HEAD%'

**and** f.account\_code **in** ('719000030002')

**union**

-- hach toan chinh xac phi thanh toan cham khac cua khu vuc

**select** v\_in\_date\_month **as** kpi\_month,

7 **as** report\_id,

**substring**(f.analysis\_code,9,1) **as** area\_code,

**sum**(f.amount) **as** total\_value

**from** finalproject.fact\_txn\_month\_raw\_data f

**where** (f.transaction\_date **between** v\_begining\_year **and** in\_date) **and** analysis\_code **like** 'DVML%'

**and** f.account\_code **in** ('719000030003','719000030103','790000030003','790000030103','790000030004','790000030104')

**group** **by** **substring**(f.analysis\_code,9,1)

**union**

-- hach toan chinh xac phi thanh toan cham khac cua head

**select** v\_in\_date\_month **as** kpi\_month,

7 **as** report\_id,

'A' **as** area\_code,

**sum**(f.amount) **as** total\_value

**from** finalproject.fact\_txn\_month\_raw\_data f

**where** (f.transaction\_date **between** v\_begining\_year **and** in\_date) **and** analysis\_code **like** 'HEAD%'

**and** f.account\_code **in** ('719000030003','719000030103','790000030003','790000030103','790000030004','790000030104')

;

-- 4.2. insert vào bảng tỷ lệ phân bổ tiêu chí trong thu nhập từ hoạt động thẻ các khu vực

--4.2.1. insert vao bang dnck binh quan sau wo nhom 1

**insert** **into** finalproject.tmp\_total\_os\_db\_grp\_1\_after\_wo

(kpi\_month, area\_code, avg\_total\_os\_area, avg\_total\_os\_all)

**select** v\_in\_date\_month **as** kpi\_month,

x1.parent\_id **as** area\_code,

x1.avg\_total\_os\_area,

x2.avg\_total\_os\_all

**from**

( -- tinh trung binh du no cuoi ki trung binh theo tung khu vuc sau khi wo nhom 1 ( t2= avg(t1,t2) )

**select** parent\_id, v\_in\_date\_month **as** kpi\_month, **avg**(dnck\_kv) **as** avg\_total\_os\_area

**from**

( -- tinh du no cuoi ki tu dau nam den thang hien tai theo tung nhom, tung khu vuc

**select** d.parent\_id,f2.kpi\_month, **sum**(f2.outstanding\_principal) **as** dnck\_kv

**from** finalproject.fact\_kpi\_month\_raw\_data f2

**join** finalproject.dim\_city\_structure d **on** d.danh\_sach\_vung = f2.pos\_city

**where** (f2.kpi\_month **between** v\_begining\_month\_of\_year **and** v\_in\_date\_month ) **and** max\_bucket = 1

**group** **by** d.parent\_id,f2.kpi\_month

)

**group** **by** parent\_id

)x1

**join**

( -- dnck trung binh toan hang ( t2= avg(t1,t2) )

**select** v\_in\_date\_month **as** kpi\_month, **avg**(avg\_dnck\_toan\_hang ) **as** avg\_total\_os\_all

**from**

(

**select** f2.kpi\_month,**sum**(f2.outstanding\_principal) **as** avg\_dnck\_toan\_hang

**from** finalproject.fact\_kpi\_month\_raw\_data f2

**where** (f2.kpi\_month **between** v\_begining\_month\_of\_year **and** v\_in\_date\_month) **and** max\_bucket = 1

**group** **by** f2.kpi\_month

)

)x2 **on** 1=1

;

--4.2.2. insert vao bang dnck binh quan sau wo nhom 2

**insert** **into** finalproject.tmp\_total\_os\_db\_grp\_2\_after\_wo

(kpi\_month, area\_code, avg\_total\_os\_area, avg\_total\_os\_all)

-- dnck sau wo nhom 2

**select** v\_in\_date\_month **as** kpi\_month,

x3.parent\_id **as** area\_code,

x3.avg\_total\_os\_area,

x4.avg\_total\_os\_all

**from**

( -- tinh trung binh du no cuoi ki trung binh theo tung khu vuc sau khi wo nhom 2 ( t2= avg(t1,t2) )

**select** parent\_id, v\_in\_date\_month **as** kpi\_month, **avg**(dnck\_kv) **as** avg\_total\_os\_area

**from**

( -- tinh du no cuoi ki tu dau nam den thang hien tai theo tung nhom, tung khu vuc

**select** d.parent\_id,f2.kpi\_month, **sum**(f2.outstanding\_principal) **as** dnck\_kv

**from** finalproject.fact\_kpi\_month\_raw\_data f2

**join** finalproject.dim\_city\_structure d **on** d.danh\_sach\_vung = f2.pos\_city

**where** (f2.kpi\_month **between** v\_begining\_month\_of\_year **and** v\_in\_date\_month ) **and** max\_bucket = 2

**group** **by** d.parent\_id,f2.kpi\_month

)

**group** **by** parent\_id

)x3

**join**

( -- dnck trung binh toan hang ( t2= avg(t1,t2) )

**select** v\_in\_date\_month **as** kpi\_month, **avg**(avg\_dnck\_toan\_hang ) **as** avg\_total\_os\_all

**from**

(

**select** f2.kpi\_month,**sum**(f2.outstanding\_principal) **as** avg\_dnck\_toan\_hang

**from** finalproject.fact\_kpi\_month\_raw\_data f2

**where** (f2.kpi\_month **between** v\_begining\_month\_of\_year **and** v\_in\_date\_month) **and** max\_bucket = 2

**group** **by** f2.kpi\_month

)

)x4 **on** 1=1

;

--4.2.3. insert vao bang dnck binh quan sau wo nhom 2 -> 5

**insert** **into** finalproject.tmp\_total\_os\_db\_grp\_2\_to\_5\_after\_wo

(kpi\_month, area\_code, avg\_total\_os\_area, avg\_total\_os\_all)

-- dnck sau wo nhom 2-> 5

**select** v\_in\_date\_month **as** kpi\_month,

x5.parent\_id **as** area\_code,

x5.avg\_total\_os\_area,

x6.avg\_total\_os\_all

**from**

( -- tinh trung binh du no cuoi ki trung binh theo tung khu vuc sau khi wo nhom 2-5 ( t2= avg(t1,t2) )

**select** parent\_id, v\_in\_date\_month **as** kpi\_month, **avg**(dnck\_kv) **as** avg\_total\_os\_area

**from**

( -- tinh du no cuoi ki tu dau nam den thang hien tai theo tung nhom, tung khu vuc

**select** d.parent\_id,f2.kpi\_month, **sum**(f2.outstanding\_principal) **as** dnck\_kv

**from** finalproject.fact\_kpi\_month\_raw\_data f2

**join** finalproject.dim\_city\_structure d **on** d.danh\_sach\_vung = f2.pos\_city

**where** (f2.kpi\_month **between** v\_begining\_month\_of\_year **and** v\_in\_date\_month ) **and** (max\_bucket **between** 2 **and** 5)

**group** **by** d.parent\_id,f2.kpi\_month

)

**group** **by** parent\_id

)x5

**join**

( -- dnck trung binh toan hang ( t2= avg(t1,t2) )

**select** v\_in\_date\_month **as** kpi\_month, **avg**(avg\_dnck\_toan\_hang ) **as** avg\_total\_os\_all

**from**

(

**select** f2.kpi\_month,**sum**(f2.outstanding\_principal) **as** avg\_dnck\_toan\_hang

**from** finalproject.fact\_kpi\_month\_raw\_data f2

**where** (f2.kpi\_month **between** v\_begining\_month\_of\_year **and** v\_in\_date\_month) **and** (max\_bucket **between** 2 **and** 5)

**group** **by** f2.kpi\_month

)

)x6 **on** 1=1

;

--4.2.4. insert vao bang so luong the psdn

-- the psdn

**insert** **into** finalproject.the\_psdn

(area\_code, kpi\_month, so\_the\_psdn, so\_the\_psdn\_toan\_hang)

**select** z.parent\_id **as** area\_code,

z.kpi\_month,

z.so\_the\_psdn,

d.so\_the\_psdn\_toan\_hang

**from**

(

-- the psdn theo kv

**select** parent\_id,v\_in\_date\_month **as** kpi\_month, **count**(f2.psdn) **as** so\_the\_psdn

**from** finalproject.fact\_kpi\_month\_raw\_data f2

**join** finalproject.dim\_city\_structure d **on** f2.pos\_city = d.danh\_sach\_vung

**where** (f2.kpi\_month **between** v\_begining\_month\_of\_year **and** v\_in\_date\_month ) **and** f2.psdn =1

**group** **by** parent\_id

)z

**join**

(

-- the psdn toan hang

**select** **count**(f2.psdn) **as** so\_the\_psdn\_toan\_hang

**from** finalproject.fact\_kpi\_month\_raw\_data f2

**where** (f2.kpi\_month **between** v\_begining\_month\_of\_year **and** v\_in\_date\_month) **and** f2.psdn =1

)d **on** 1=1

;

-- 4.3. insert vào bảng report 1 tong thu nhap tu hoat dong the

--4.3.1. insert vao bang report tieu chi lai trong han

**insert** **into** finalproject.report\_tong\_hop

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

**select** t1.area\_code,

t1.kpi\_month,

t1.report\_id,

t1.total\_value + (x7.total\_value\*x8.rate\_allocate) **as** total\_value

**from** finalproject.tmp\_accurate\_accounting\_card\_income t1

**join**

(

-- lay ra gia tri hach toan chinh xac

**select** total\_value

**from** finalproject.tmp\_accurate\_accounting\_card\_income

**where** report\_id = 3 **and** area\_code = 'A'

)x7 **on** 1=1

**join**

(

-- lay ra ty le phan bo

**select** kpi\_month,

area\_code,

avg\_total\_os\_area/avg\_total\_os\_all **as** rate\_allocate

**from** finalproject.tmp\_total\_os\_db\_grp\_1\_after\_wo

)x8 **on** t1.area\_code = x8.area\_code **and** t1.report\_id = 3

**where** t1.report\_id = 3

;

--4.3.2. insert vao bang report tieu chi lai qua han

**insert** **into** finalproject.report\_tong\_hop

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

**select** t1.area\_code,

t1.kpi\_month,

t1.report\_id,

t1.total\_value + (x9.total\_value\*x10.rate\_allocate) **as** total\_value

**from** finalproject.tmp\_accurate\_accounting\_card\_income t1

**join**

(

-- lay ra gia tri hach toan chinh xac

**select** total\_value

**from** finalproject.tmp\_accurate\_accounting\_card\_income

**where** report\_id = 4 **and** area\_code = 'A'

)x9 **on** 1=1

**join**

(

-- lay ra ty le phan bo

**select** kpi\_month,

area\_code,

avg\_total\_os\_area/avg\_total\_os\_all **as** rate\_allocate

**from** finalproject.tmp\_total\_os\_db\_grp\_2\_after\_wo

)x10 **on** t1.area\_code = x10.area\_code **and** t1.report\_id = 4

**where** t1.report\_id = 4

;

--4.3.3. insert vao bang report tieu chi phi bao hiem

**insert** **into** finalproject.report\_tong\_hop

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

**select** t1.area\_code,

t1.kpi\_month,

t1.report\_id,

t1.total\_value + (x11.total\_value\*x12.rate\_allocate) **as** total\_value

**from** finalproject.tmp\_accurate\_accounting\_card\_income t1

**join**

(

-- lay ra gia tri hach toan chinh xac

**select** total\_value

**from** finalproject.tmp\_accurate\_accounting\_card\_income

**where** report\_id = 5 **and** area\_code = 'A'

)x11 **on** 1=1

**join**

(

-- lay ra ty le phan bo

**select** kpi\_month,

area\_code,

so\_the\_psdn/so\_the\_psdn\_toan\_hang::**float8** **as** rate\_allocate

**from** finalproject.the\_psdn

)x12 **on** t1.area\_code = x12.area\_code **and** t1.report\_id = 5

**where** t1.report\_id = 5

;

--4.3.4. insert vao bang report tieu chi phi tang han muc

**insert** **into** finalproject.report\_tong\_hop

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

**select** t1.area\_code,

t1.kpi\_month,

t1.report\_id,

t1.total\_value + (x13.total\_value\*x14.rate\_allocate) **as** total\_value

**from** finalproject.tmp\_accurate\_accounting\_card\_income t1

**join**

(

-- lay ra gia tri hach toan chinh xac

**select** total\_value

**from** finalproject.tmp\_accurate\_accounting\_card\_income

**where** report\_id = 6 **and** area\_code = 'A'

)x13 **on** 1=1

**join**

(

-- lay ra ty le phan bo

**select** kpi\_month,

area\_code,

avg\_total\_os\_area/avg\_total\_os\_all **as** rate\_allocate

**from** finalproject.tmp\_total\_os\_db\_grp\_1\_after\_wo

)x14 **on** t1.area\_code = x14.area\_code **and** t1.report\_id = 6

**where** t1.report\_id = 6

;

--4.3.5. insert vao bang report tieu chi phi thanh toan cham khac

**insert** **into** finalproject.report\_tong\_hop

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

**select** t1.area\_code,

t1.kpi\_month,

t1.report\_id,

t1.total\_value + (x15.total\_value\*x16.rate\_allocate) **as** total\_value

**from** finalproject.tmp\_accurate\_accounting\_card\_income t1

**join**

(

-- lay ra gia tri hach toan chinh xac

**select** total\_value

**from** finalproject.tmp\_accurate\_accounting\_card\_income

**where** report\_id = 7 **and** area\_code = 'A'

)x15 **on** 1=1

**join**

(

-- lay ra ty le phan bo

**select** kpi\_month,

area\_code,

avg\_total\_os\_area/avg\_total\_os\_all **as** rate\_allocate

**from** finalproject.tmp\_total\_os\_db\_grp\_2\_to\_5\_after\_wo

)x16 **on** t1.area\_code = x16.area\_code **and** t1.report\_id = 7

**where** t1.report\_id = 7

;

-- bước 5: chi phí kinh doanh vốn

-- 5.1. insert vào bảng hạch toán chính xác các tiêu chí về chi phí kinh doanh vốn các khu vực

**insert** **into** finalproject.tmp\_accurate\_accounting\_captial\_business

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

-- tong doanh thu nguon von toan hang

**select** v\_in\_date\_month **as** kpi\_month,

9 **as** report\_id,

'NO' **as** area\_code,

**sum**(f.amount) **as** total\_value

**from** finalproject.fact\_txn\_month\_raw\_data f

**where** (f.transaction\_date **between** v\_begining\_year **and** in\_date)

**and** f.account\_code **in** ('702000040001','702000040002','703000000001','703000000002','703000000003','703000000004', '721000000041',

'721000000037','721000000039','721000000013','721000000014','721000000036','723000000014', '723000000037',

'821000000014','821000000037','821000000039','821000000041','821000000013','821000000036','823000000014',

'823000000037','741031000001','741031000002','841000000001','841000000005','841000000004','701000000001',

'701000000002','701037000001','701037000002','701000000101')

**union**

-- hach toan cua chi phi von thi truong 2

**select** v\_in\_date\_month **as** kpi\_month,

10 **as** report\_id,

'A' **as** area\_code,

**sum**(f.amount) **as** total\_value

**from** finalproject.fact\_txn\_month\_raw\_data f

**where** (f.transaction\_date **between** v\_begining\_year **and** in\_date) **and** analysis\_code **like** 'HEAD%'

**and** f.account\_code **in** ('801000000001','802000000001')

**union**

-- hach toan cua chi phi von thi truong 1

**select** v\_in\_date\_month **as** kpi\_month,

11 **as** report\_id,

'A' **as** area\_code,

**coalesce**(**sum**(f.amount),0) **as** total\_value

**from** finalproject.fact\_txn\_month\_raw\_data f

**where** (f.transaction\_date **between** v\_begining\_year **and** in\_date) **and** analysis\_code **like** 'HEAD%'

**and** f.account\_code **in** ('802000000002','802000000003','802014000001','802037000001')

**union**

-- hach toan cua chi phi von cctg

**select** v\_in\_date\_month **as** kpi\_month,

12 **as** report\_id,

'A' **as** area\_code,

**sum**(f.amount) **as** total\_value

**from** finalproject.fact\_txn\_month\_raw\_data f

**where** (f.transaction\_date **between** v\_begining\_year **and** in\_date) **and** analysis\_code **like** 'HEAD%'

**and** f.account\_code **in** ('803000000001')

;

-- 5.2. insert vào bảng tỷ lệ phân bổ tiêu chí trong chi phí kinh doanh vốn các khu vực

**insert** **into** finalproject.tmp\_allocate\_capital\_business

(kpi\_month, area\_code, card\_income, interest\_credit\_card)

**select** x17.kpi\_month,

x17.area\_code,

x17.card\_income,

x18.interest\_credit\_card

**from**

( -- thu nhap tu hoat dong the DVML

**select** area\_code,kpi\_month,**sum**(total\_value) **as** card\_income

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

**where** (report\_id **between** 3 **and** 7 ) **and** kpi\_month = v\_in\_date\_month

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

)x17

**join**

(

-- lai thu tu the vay toan hang

**select** **sum**(total\_value) **as** interest\_credit\_card

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

**where** area\_code <> 'A' **and** (report\_id **between** 3 **and** 7 ) **and** kpi\_month = v\_in\_date\_month

)x18 **on** 1=1

;

-- 5.3. insert vào bảng report 1 cac tieu chi cua chi phí kinh doanh vốn

--5.3.1. insert vao bang report doanh thu nguon von

**insert** **into** finalproject.report\_tong\_hop

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

**select** t1.area\_code,

t1.kpi\_month,

9 **as** report\_id,

0 **as** total\_value

**from** finalproject.tmp\_allocate\_capital\_business t1

;

--5.3.2. insert vao bang report cp von tt2

**insert** **into** finalproject.report\_tong\_hop

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

**select** t1.area\_code,

t1.kpi\_month,

t2.report\_id,

(t2.total\_value)::**float8**\*(t1.card\_income::**float8**/(x19.revenue\_capital + t1.interest\_credit\_card)) **as** total\_value

**from** finalproject.tmp\_allocate\_capital\_business t1

**join** finalproject.tmp\_accurate\_accounting\_captial\_business t2 **on** 1=1

**join**

(

**select** total\_value **as** revenue\_capital

**from** finalproject.tmp\_accurate\_accounting\_captial\_business

**where** report\_id = 9

)x19 **on** 1=1

**where** t2.report\_id = 10

;

--5.3.3.insert vao bang report cp von tt1

**insert** **into** finalproject.report\_tong\_hop

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

**select** t1.area\_code,

t1.kpi\_month,

t2.report\_id,

(t2.total\_value\*t1.card\_income)::**float8**/(x20.revenue\_capital + t1.interest\_credit\_card) **as** total\_value

**from** finalproject.tmp\_allocate\_capital\_business t1

**join** finalproject.tmp\_accurate\_accounting\_captial\_business t2 **on** 1=1

**join**

(

**select** total\_value **as** revenue\_capital

**from** finalproject.tmp\_accurate\_accounting\_captial\_business

**where** report\_id = 9

)x20 **on** 1=1

**where** t2.report\_id = 11

;

--5.3.4..insert vao bang report cp von cctg

**insert** **into** finalproject.report\_tong\_hop

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

**select** t1.area\_code,

t1.kpi\_month,

t2.report\_id,

(t2.total\_value\*t1.card\_income)::**float8**/(x21.revenue\_capital + t1.interest\_credit\_card) **as** total\_value

**from** finalproject.tmp\_allocate\_capital\_business t1

**join** finalproject.tmp\_accurate\_accounting\_captial\_business t2 **on** 1=1

**join**

(

**select** total\_value **as** revenue\_capital

**from** finalproject.tmp\_accurate\_accounting\_captial\_business

**where** report\_id = 9

)x21 **on** 1=1

**where** t2.report\_id = 12

;

-- bước 6: chi phí thuần hoạt động khác

-- 6.1. insert vào bảng hạch toán chính xác tiêu chí trong chi phí thuần hoạt động khác

**insert** **into** finalproject.tmp\_accurate\_accounting\_net\_other\_operating\_expenses

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

-- hach toan chinh xac doanh thu kinh doanh

**select** v\_in\_date\_month **as** kpi\_month,

16 **as** report\_id,

**substring**(f.analysis\_code,9,1) **as** area\_code,

**sum**(f.amount) **as** total\_value

**from** finalproject.fact\_txn\_month\_raw\_data f

**where** (f.transaction\_date **between** v\_begining\_year **and** in\_date) **and** analysis\_code **like** 'DVML%'

**and** f.account\_code **in** ('702000010001','702000010002','704000000001','705000000001','709000000001','714000000002','714000000003',

'714037000001','714000000004','714014000001','715000000001','715037000001','719000000001','709000000101','719000000101')

**group** **by** **substring**(f.analysis\_code,9,1)

**union**

-- hach toan chinh xac doanh thu kinh doanh cua head

**select** v\_in\_date\_month **as** kpi\_month,

16 **as** report\_id,

'A' **as** area\_code,

**sum**(f.amount) **as** total\_value

**from** finalproject.fact\_txn\_month\_raw\_data f

**where** (f.transaction\_date **between** v\_begining\_year **and** in\_date) **and** analysis\_code **like** 'HEAD%'

**and** f.account\_code **in** ('702000010001','702000010002','704000000001','705000000001','709000000001','714000000002','714000000003',

'714037000001','714000000004','714014000001','715000000001','715037000001','719000000001','709000000101','719000000101')

**union**

-- hach toan chinh xac chi phi hoa hong

**select** v\_in\_date\_month **as** kpi\_month,

17 **as** report\_id,

**substring**(f.analysis\_code,9,1) **as** area\_code,

**sum**(f.amount) **as** total\_value

**from** finalproject.fact\_txn\_month\_raw\_data f

**where** (f.transaction\_date **between** v\_begining\_year **and** in\_date) **and** analysis\_code **like** 'DVML%'

**and** f.account\_code **in** ('816000000001','816000000002','816000000003')

**group** **by** **substring**(f.analysis\_code,9,1)

**union**

-- hach toan chinh xac chi phi hoa hong cua head

**select** v\_in\_date\_month **as** kpi\_month,

17 **as** report\_id,

'A' **as** area\_code,

**sum**(f.amount) **as** total\_value

**from** finalproject.fact\_txn\_month\_raw\_data f

**where** (f.transaction\_date **between** v\_begining\_year **and** in\_date) **and** analysis\_code **like** 'HEAD%'

**and** f.account\_code **in** ('816000000001','816000000002','816000000003')

**union**

-- hach toan chinh xac chi phi thuan kinh doanh khac

**select** v\_in\_date\_month **as** kpi\_month,

18 **as** report\_id,

**substring**(f.analysis\_code,9,1) **as** area\_code,

**sum**(f.amount) **as** total\_value

**from** finalproject.fact\_txn\_month\_raw\_data f

**where** (f.transaction\_date **between** v\_begining\_year **and** in\_date) **and** analysis\_code **like** 'DVML%'

**and** f.account\_code **in** ('809000000002','809000000001','811000000001','811000000102','811000000002','811014000001','811037000001',

'811039000001', '811041000001','815000000001','819000000002','819000000003','819000000001','790000000003','790000050101',

'790000000101','790037000001','849000000001','899000000003','899000000002','811000000101','819000060001')

**group** **by** **substring**(f.analysis\_code,9,1)

**union**

-- hach toan chinh xac chi phi thuan kinh doanh khac cua head

**select** v\_in\_date\_month **as** kpi\_month,

18 **as** report\_id,

'A' **as** area\_code,

**sum**(f.amount) **as** total\_value

**from** finalproject.fact\_txn\_month\_raw\_data f

**where** (f.transaction\_date **between** v\_begining\_year **and** in\_date) **and** analysis\_code **like** 'HEAD%'

**and** f.account\_code **in** ('809000000002','809000000001','811000000001','811000000102','811000000002','811014000001','811037000001',

'811039000001', '811041000001','815000000001','819000000002','819000000003','819000000001','790000000003','790000050101',

'790000000101','790037000001','849000000001','899000000003','899000000002','811000000101','819000060001')

;

-- 6.2. insert vào bảng tỷ lệ phân bổ tiêu chí trong chi phí thuần hoạt động khác

**insert** **into** finalproject.tmp\_total\_os\_db\_after\_wo

(kpi\_month, area\_code, avg\_total\_os\_area, avg\_total\_os\_all)

**select** v\_in\_date\_month **as** kpi\_month,

x1.parent\_id **as** area\_code,

x1.avg\_total\_os\_area,

x2.avg\_total\_os\_all

**from**

(

-- tinh trung binh du no cuoi ki trung binh theo tung khu vuc sau khi wo nhom 1 ( t2= avg(t1,t2) )

**select** parent\_id, v\_in\_date\_month **as** kpi\_month, **avg**(dnck\_kv) **as** avg\_total\_os\_area

**from**

( -- tinh du no cuoi ki tu dau nam den thang hien tai theo tung nhom, tung khu vuc

**select** d.parent\_id,f2.kpi\_month, **sum**(f2.outstanding\_principal) **as** dnck\_kv

**from** finalproject.fact\_kpi\_month\_raw\_data f2

**join** finalproject.dim\_city\_structure d **on** d.danh\_sach\_vung = f2.pos\_city

**where** (f2.kpi\_month **between** v\_begining\_month\_of\_year **and** v\_in\_date\_month )

**group** **by** d.parent\_id,f2.kpi\_month

)

**group** **by** parent\_id

)x1

**join**

( -- dnck trung binh toan hang ( t2= avg(t1,t2) )

**select** v\_in\_date\_month **as** kpi\_month, **avg**(avg\_dnck\_toan\_hang ) **as** avg\_total\_os\_all

**from**

(

**select** f2.kpi\_month,**sum**(f2.outstanding\_principal) **as** avg\_dnck\_toan\_hang

**from** finalproject.fact\_kpi\_month\_raw\_data f2

**where** (f2.kpi\_month **between** v\_begining\_month\_of\_year **and** v\_in\_date\_month)

**group** **by** f2.kpi\_month

)

)x2 **on** 1=1

;

-- 6.3. insert vào bảng report 1 cac tieu chi cua chi phí thuần hoạt động khác

--6.3.1. insert vao bang report chi tieu DT Fintech

**insert** **into** finalproject.report\_tong\_hop

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

**select** area\_code,

kpi\_month,

14 **as** report\_id,

0 **as** total\_value

**from** finalproject.tmp\_total\_os\_db\_after\_wo

;

--6.3.2. insert vao bang report chi tieu DT tiểu thương, cá nhân

**insert** **into** finalproject.report\_tong\_hop

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

**select** area\_code,

kpi\_month,

15 **as** report\_id,

0 **as** total\_value

**from** finalproject.tmp\_total\_os\_db\_after\_wo

;

-- 6.3.3. insert vao bang report chi tieu doanh thu kinh doanh

**insert** **into** finalproject.report\_tong\_hop

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

**select** t1.area\_code,

t1.kpi\_month,

t2.report\_id,

t2.total\_value + (x.total\_value\*t1.avg\_total\_os\_area)/t1.avg\_total\_os\_all **as** total\_value

**from** finalproject.tmp\_total\_os\_db\_after\_wo t1

**join** finalproject.tmp\_accurate\_accounting\_net\_other\_operating\_expenses t2 **on** t1.area\_code = t2.area\_code **and** t2.report\_id = 16

**join**

(

**select** total\_value

**from** finalproject.tmp\_accurate\_accounting\_net\_other\_operating\_expenses

**where** report\_id = 16 **and** area\_code = 'A'

)x **on** 1=1

;

--6.3.4.insert vao bang report chi tieu CP hoa hồng

**insert** **into** finalproject.report\_tong\_hop

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

**select** t1.area\_code,

t1.kpi\_month,

t2.report\_id,

t2.total\_value + (x.total\_value\*t1.avg\_total\_os\_area)/t1.avg\_total\_os\_all **as** total\_value

**from** finalproject.tmp\_total\_os\_db\_after\_wo t1

**join** finalproject.tmp\_accurate\_accounting\_net\_other\_operating\_expenses t2 **on** t1.area\_code = t2.area\_code **and** t2.report\_id = 17

**join**

(

**select** total\_value

**from** finalproject.tmp\_accurate\_accounting\_net\_other\_operating\_expenses

**where** report\_id = 17 **and** area\_code = 'A'

)x **on** 1=1

;

--6.3.5.insert vao bang report chi tieu CP thuần KD khác

**insert** **into** finalproject.report\_tong\_hop

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

**select** t1.area\_code,

t1.kpi\_month,

t2.report\_id,

t2.total\_value + (x.total\_value\*t1.avg\_total\_os\_area)/t1.avg\_total\_os\_all **as** total\_value

**from** finalproject.tmp\_total\_os\_db\_after\_wo t1

**join** finalproject.tmp\_accurate\_accounting\_net\_other\_operating\_expenses t2 **on** t1.area\_code = t2.area\_code **and** t2.report\_id = 18

**join**

(

**select** total\_value

**from** finalproject.tmp\_accurate\_accounting\_net\_other\_operating\_expenses

**where** report\_id = 18 **and** area\_code = 'A'

)x **on** 1=1

;

--6.3.6.insert vao bang report chi tieu CP hợp tác kd tàu (net)

**insert** **into** finalproject.report\_tong\_hop

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

**select** area\_code,

kpi\_month,

19 **as** report\_id,

0 **as** total\_value

**from** finalproject.tmp\_total\_os\_db\_after\_wo

;

-- bước 7: tổng chi phí hoạt động

-- 7.1. insert vào bảng so\_nhan\_vien

**insert** **into** finalproject.number\_of\_employees

(area\_code, kpi\_month, no\_of\_employees\_area, no\_of\_employees\_all)

**select** **case**

**when** k.area\_name ='Đông Bắc Bộ' **then** 'B'

**when** k.area\_name ='Tây Bắc Bộ' **then** 'C'

**when** k.area\_name ='Đồng Bằng Sông Hồng' **then** 'D'

**when** k.area\_name ='Bắc Trung Bộ' **then** 'E'

**when** k.area\_name ='Nam Trung Bộ' **then** 'F'

**when** k.area\_name ='Tây Nam Bộ' **then** 'G'

**when** k.area\_name ='Đông Nam Bộ' **then** 'H'

**END** **as** area\_code,

v\_in\_date\_month **as** kpi\_month,

k.so\_nhan\_vien **as** no\_of\_employees\_area,

j.so\_nhan\_vien\_toan\_hang **as** no\_of\_employees\_all

**from**

(

**select** area\_name, **count**(**distinct** email) **as** so\_nhan\_vien

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

-- boi vi co the tháng cần làm bao cao nhan vien do chua lam viec

**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**)

**group** **by** area\_name

)k

**join**

(

**select** **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**)

)j **on** 1=1

;

-- 7.2. insert vào bảng hạch toán chính xác trong tổng chi phí hoạt động

**insert** **into** finalproject.tmp\_accurate\_accounting\_operating\_expenses

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

-- hach toan chinh xac chi phi nhan vien

**select** v\_in\_date\_month **as** kpi\_month,

23 **as** report\_id,

**substring**(f.analysis\_code,9,1) **as** area\_code,

**sum**(f.amount) **as** total\_value

**from** finalproject.fact\_txn\_month\_raw\_data f

**where** (f.transaction\_date **between** v\_begining\_year **and** in\_date) **and** analysis\_code **like** 'DVML%'

**and** f.account\_code **like** '85%'

**group** **by** **substring**(f.analysis\_code,9,1)

**union**

-- hach toan chinh xac chi phi nhan vien cua head

**select** v\_in\_date\_month **as** kpi\_month,

23 **as** report\_id,

'A' **as** area\_code,

**sum**(f.amount) **as** total\_value

**from** finalproject.fact\_txn\_month\_raw\_data f

**where** (f.transaction\_date **between** v\_begining\_year **and** in\_date) **and** analysis\_code **like** 'HEAD%'

**and** f.account\_code **like** '85%'

**union**

-- hach toan chinh xac CP quản lý

**select** v\_in\_date\_month **as** kpi\_month,

24 **as** report\_id,

**substring**(f.analysis\_code,9,1) **as** area\_code,

**sum**(f.amount) **as** total\_value

**from** finalproject.fact\_txn\_month\_raw\_data f

**where** (f.transaction\_date **between** v\_begining\_year **and** in\_date) **and** analysis\_code **like** 'DVML%'

**and** f.account\_code **like** '86%'

**group** **by** **substring**(f.analysis\_code,9,1)

**union**

-- hach toan chinh xac CP quản lý cua head

**select** v\_in\_date\_month **as** kpi\_month,

24 **as** report\_id,

'A' **as** area\_code,

**sum**(f.amount) **as** total\_value

**from** finalproject.fact\_txn\_month\_raw\_data f

**where** (f.transaction\_date **between** v\_begining\_year **and** in\_date) **and** analysis\_code **like** 'HEAD%'

**and** f.account\_code **like** '86%'

**union**

-- hach toan chinh xac CP tài sản

**select** v\_in\_date\_month **as** kpi\_month,

25 **as** report\_id,

**substring**(f.analysis\_code,9,1) **as** area\_code,

**sum**(f.amount) **as** total\_value

**from** finalproject.fact\_txn\_month\_raw\_data f

**where** (f.transaction\_date **between** v\_begining\_year **and** in\_date) **and** analysis\_code **like** 'DVML%'

**and** f.account\_code **like** '87%'

**group** **by** **substring**(f.analysis\_code,9,1)

**union**

-- hach toan chinh xac CP tài sản cua head

**select** v\_in\_date\_month **as** kpi\_month,

25 **as** report\_id,

'A' **as** area\_code,

**sum**(f.amount) **as** total\_value

**from** finalproject.fact\_txn\_month\_raw\_data f

**where** (f.transaction\_date **between** v\_begining\_year **and** in\_date) **and** analysis\_code **like** 'HEAD%'

**and** f.account\_code **like** '87%'

;

-- 7.3. insert vào bảng report 1 cac tieu chi cua tổng chi phí hoạt động

--7.3.1. insert vao bang report tieu chi CP thuế, phí

**insert** **into** finalproject.report\_tong\_hop

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

**select** area\_code,

kpi\_month,

22 **as** report\_id,

0 **as** total\_value

**from** finalproject.number\_of\_employees

;

--7.3.2.insert vao bang report tieu chi CP nhân viên

**insert** **into** finalproject.report\_tong\_hop

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

**select** t1.area\_code,

t1.kpi\_month,

t1.report\_id,

t1.total\_value + (x.total\_value\*n.no\_of\_employees\_area)/n.no\_of\_employees\_all **as** total\_value

**from** finalproject.tmp\_accurate\_accounting\_operating\_expenses t1

**join** finalproject.number\_of\_employees n **on** t1.area\_code = n.area\_code **and** t1.report\_id = 23 **and** n.kpi\_month = t1.kpi\_month

**join**

(

**select** total\_value

**from** finalproject.tmp\_accurate\_accounting\_operating\_expenses

**where** report\_id = 23 **and** area\_code = 'A'

)x **on** 1=1

**where** t1.report\_id = 23

;

--7.3.3.insert vao bang report tieu chi CP quản lý

**insert** **into** finalproject.report\_tong\_hop

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

**select** t1.area\_code,

t1.kpi\_month,

t1.report\_id,

t1.total\_value + (x.total\_value\*n.no\_of\_employees\_area)/n.no\_of\_employees\_all **as** total\_value

**from** finalproject.tmp\_accurate\_accounting\_operating\_expenses t1

**join** finalproject.number\_of\_employees n **on** t1.area\_code = n.area\_code **and** t1.report\_id = 24

**join**

(

**select** total\_value

**from** finalproject.tmp\_accurate\_accounting\_operating\_expenses

**where** report\_id = 24 **and** area\_code = 'A'

)x **on** 1=1

**where** t1.report\_id = 24

;

--7.3.4.insert vao bang report tieu chi CP tài sản

**insert** **into** finalproject.report\_tong\_hop

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

**select** t1.area\_code,

t1.kpi\_month,

t1.report\_id,

t1.total\_value + (x.total\_value\*n.no\_of\_employees\_area)/n.no\_of\_employees\_all **as** total\_value

**from** finalproject.tmp\_accurate\_accounting\_operating\_expenses t1

**join** finalproject.number\_of\_employees n **on** t1.area\_code = n.area\_code **and** t1.report\_id = 25 **and** n.kpi\_month = t1.kpi\_month

**join**

(

**select** total\_value

**from** finalproject.tmp\_accurate\_accounting\_operating\_expenses

**where** report\_id = 24 **and** area\_code = 'A'

)x **on** 1=1

**where** t1.report\_id = 25

;

-- bước 8: chi phí dự phòng

-- 8.1. insert vào bảng hạch toán chính xác trong chi phí dự phòng

**insert** **into** finalproject.tmp\_accurate\_accounting\_provision\_expenses

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

-- hach toan chinh xac chi phi du phong

**select** v\_in\_date\_month **as** kpi\_month,

26 **as** report\_id,

**substring**(f.analysis\_code,9,1) **as** area\_code,

**sum**(f.amount) **as** total\_value

**from** finalproject.fact\_txn\_month\_raw\_data f

**where** (f.transaction\_date **between** v\_begining\_year **and** in\_date) **and** analysis\_code **like** 'DVML%'

**and** f.account\_code **in** ('790000050001', '882200050001', '790000030001','882200030001', '790000000001', '790000020101', '882200000001',

'882200050101', '882200020101', '882200060001','790000050101', '882200030101')

**group** **by** **substring**(f.analysis\_code,9,1)

**union**

-- hach toan chinh xac chi phi du phong cua head

**select** v\_in\_date\_month **as** kpi\_month,

26 **as** report\_id,

'A' **as** area\_code,

**sum**(f.amount) **as** total\_value

**from** finalproject.fact\_txn\_month\_raw\_data f

**where** (f.transaction\_date **between** v\_begining\_year **and** in\_date) **and** analysis\_code **like** 'HEAD%'

**and** f.account\_code **in** ('790000050001', '882200050001', '790000030001','882200030001', '790000000001', '790000020101', '882200000001',

'882200050101', '882200020101', '882200060001','790000050101', '882200030101')

;

-- 8.2. insert vào bảng tỷ lệ phân bổ tiêu chí trong chi phí dự phòng

--8.2.1. insert vao bang wo luy ke wo\_by\_month\_grp\_2\_to\_5 ( su dung bang nay tinh luy ke )

**insert** **into** finalproject.wo\_by\_month

(area\_code, kpi\_month, write\_off\_month, wo\_by\_month)

-- tinh so tien wo theo thang, theo tung khu vuc

**select** d.parent\_id **as** area\_code,

f2.kpi\_month,

f2.write\_off\_month,

**sum**(write\_off\_balance\_principal) **as** wo\_by\_month

**from** finalproject.fact\_kpi\_month\_raw\_data f2

**join** finalproject.dim\_city\_structure d **on** f2.pos\_city = d.danh\_sach\_vung

**where** (f2.kpi\_month **between** v\_begining\_month\_of\_year **and** v\_in\_date\_month )

**and** (f2.write\_off\_month **between** v\_begining\_month\_of\_year **and** v\_in\_date\_month) -- thang wo

**and** (f2.kpi\_month = f2.write\_off\_month)

**group** **by** d.parent\_id,f2.kpi\_month,f2.write\_off\_month

**union**

-- tinh so tien wo theo thangs, theo head

**select** 'ALL' **as** area\_code,

f2.kpi\_month,

f2.write\_off\_month,

**sum**(write\_off\_balance\_principal) **as** wo\_by\_month

**from** finalproject.fact\_kpi\_month\_raw\_data f2

**where** (f2.kpi\_month **between** v\_begining\_month\_of\_year **and** v\_in\_date\_month )

**and** (f2.write\_off\_month **between** v\_begining\_month\_of\_year **and** v\_in\_date\_month) -- thang wo

**and** (f2.kpi\_month = f2.write\_off\_month)

**group** **by** f2.kpi\_month,f2.write\_off\_month

;

-- update cot wo\_luyke cho bang finalproject.wo\_by\_month\_grp\_2\_to\_5

**update** finalproject.wo\_by\_month

**set** wo\_luyke = x.wo\_luyke

**from**

(

**select** area\_code,

kpi\_month,

-- ham sum() over tinh luy ke

**sum**(wo\_by\_month) **over** (**partition** **by** area\_code **order** **by** kpi\_month) **as** wo\_luyke

**from** finalproject.wo\_by\_month

) x

**where** x.area\_code = finalproject.wo\_by\_month.area\_code

**and** x.kpi\_month = finalproject.wo\_by\_month.kpi\_month **and** x.area\_code **is** **not** **null** **and** x.kpi\_month **is** **not** **null**

;

--8.2.2. insert vao bang raw os\_bef\_wo

**insert** **into** finalproject.os\_bef\_wo

(area\_code, kpi\_month, os\_bef\_wo, avg\_total\_os\_all)

**select** l.parent\_id **as** area\_code,

l.kpi\_month,

l.avg\_total\_os\_area + s.wo\_luyke **as** os\_bef\_wo,

o1.avg\_total\_os\_all + k.wo\_luyke **as** avg\_total\_os\_all

**from**

( -- tinh avg\_total\_os\_area tu dau nam den thang xet, tung khu vuc theo nhom 2->5 ( t2= avg(t1,t2) )

-- tinh du no cuoi ki tu dau nam den thang hien tai theo tung nhom, tung khu vuc

**select** d.parent\_id,f2.kpi\_month, **sum**(f2.outstanding\_principal) **as** avg\_total\_os\_area

**from** finalproject.fact\_kpi\_month\_raw\_data f2

**join** finalproject.dim\_city\_structure d **on** d.danh\_sach\_vung = f2.pos\_city

**where** (f2.kpi\_month **between** v\_begining\_month\_of\_year **and** v\_in\_date\_month ) **and** (f2.max\_bucket **between** 2 **and** 5)

**group** **by** d.parent\_id,f2.kpi\_month

)l

**join** finalproject.wo\_by\_month s **on** s.area\_code = l.parent\_id **and** s.kpi\_month = l.kpi\_month

**join**

(

**select** area\_code , kpi\_month , wo\_luyke

**from** finalproject.wo\_by\_month

**where** area\_code = 'ALL'

)k **on** k.kpi\_month = s.kpi\_month

**join**

( -- dnck trung binh toan hang ( t2= avg(t1,t2) )

**select** f2.kpi\_month,**sum**(f2.outstanding\_principal) **as** avg\_total\_os\_all

**from** finalproject.fact\_kpi\_month\_raw\_data f2

**where** (f2.kpi\_month **between** v\_begining\_month\_of\_year **and** v\_in\_date\_month) **and** (f2.max\_bucket **between** 2 **and** 5)

**group** **by** f2.kpi\_month

)o1 **on** o1.kpi\_month = l.kpi\_month

;

--8.2.3. insert vao bang avg\_os\_bef\_wo

**insert** **into** finalproject.total\_os\_bef\_wo

(area\_code, kpi\_month, total\_os\_area\_bef\_wo, total\_os\_all)

**select** area\_code,

v\_in\_date\_month **as** kpi\_month,

**sum**(os\_bef\_wo) **as** total\_os\_area\_bef\_wo,

**sum**(avg\_total\_os\_all) **as** total\_os\_all

**from** finalproject.os\_bef\_wo

**group** **by** area\_code

;

-- 8.3. insert vào bảng report 1 cac tieu chi cua chi phí dự phòng

**insert** **into** finalproject.report\_tong\_hop

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

**select** t1.area\_code,

t1.kpi\_month,

t1.report\_id,

t1.total\_value + (x.total\_value\*a.total\_os\_area\_bef\_wo)::**float8**/a.total\_os\_all **as** total\_value

**from** finalproject.tmp\_accurate\_accounting\_provision\_expenses t1

**join** finalproject.total\_os\_bef\_wo a **on** t1.area\_code = a.area\_code **and** t1.kpi\_month = a.kpi\_month

**join**

(

**select** total\_value

**from** finalproject.tmp\_accurate\_accounting\_provision\_expenses

**where** area\_code = 'A'

)x **on** 1=1

;

-- buoc 10. insert vao report tieu chi hoi so 'A'

**insert** **into** finalproject.report\_tong\_hop

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

-- id 3-> 7

**select** 'A' **as** area\_code,

t1.kpi\_month,

t1.report\_id,

t1.total\_value **as** total\_value

**from** finalproject.tmp\_accurate\_accounting\_card\_income t1

**where** t1.area\_code = 'A'

**union**

-- id 9

**select** 'A' **as** area\_code,

t2.kpi\_month,

'9' **as** report\_id,

0 **as** total\_value

**from** finalproject.tmp\_accurate\_accounting\_captial\_business t2

**union**

-- id 10-> 12

**select** 'A' **as** area\_code,

t2.kpi\_month,

t2.report\_id,

t2.total\_value **as** total\_value

**from** finalproject.tmp\_accurate\_accounting\_captial\_business t2

**where** t2.area\_code = 'A'

**union**

-- id 14

**select** 'A' **as** area\_code,

t3.kpi\_month,

'14' **as** report\_id,

0 **as** total\_value

**from** finalproject.tmp\_accurate\_accounting\_net\_other\_operating\_expenses t3

**union**

-- id 15

**select** 'A' **as** area\_code,

t3.kpi\_month,

'15' **as** report\_id,

0 **as** total\_value

**from** finalproject.tmp\_accurate\_accounting\_net\_other\_operating\_expenses t3

**union**

-- id 16, 17,18

**select** 'A' **as** area\_code,

t3.kpi\_month,

t3.report\_id,

t3.total\_value **as** total\_value

**from** finalproject.tmp\_accurate\_accounting\_net\_other\_operating\_expenses t3

**where** t3.area\_code = 'A'

**union**

-- id 19

**select** 'A' **as** area\_code,

t3.kpi\_month,

'19' **as** report\_id,

0 **as** total\_value

**from** finalproject.tmp\_accurate\_accounting\_net\_other\_operating\_expenses t3

**union**

-- id 22

**select** 'A' **as** area\_code,

t4.kpi\_month,

'22' **as** report\_id,

0 **as** total\_value

**from** finalproject.tmp\_accurate\_accounting\_operating\_expenses t4

**union**

-- id 23,24,25

**select** 'A' **as** area\_code,

t4.kpi\_month,

t4.report\_id,

t4.total\_value **as** total\_value

**from** finalproject.tmp\_accurate\_accounting\_operating\_expenses t4

**where** t4.area\_code = 'A'

**union**

-- id 26

**select** 'A' **as** area\_code,

t5.kpi\_month,

t5.report\_id,

t5.total\_value **as** total\_value

**from** finalproject.tmp\_accurate\_accounting\_provision\_expenses t5

**where** t5.area\_code = 'A'

;

-- bước 10: insert vào report tieu chi report level 1

**insert** **into** finalproject.report\_tong\_hop

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

-- tinh tieu chi level 1 Thu nhập từ hoạt động thẻ

**select** area\_code,

kpi\_month,

2 **as** report\_id,

**sum**(**coalesce**(total\_value,0)) **as** total\_value

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

**where** (report\_id **between** 3 **and** 7) **and** kpi\_month = v\_in\_date\_month

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

**union**

-- tinh tieu chi level 1 Chi phí thuần KDV

**select** area\_code,

kpi\_month,

8 **as** report\_id,

**sum**(**coalesce**(total\_value,0)) **as** total\_value

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

**where** (report\_id **between** 9 **and** 12) **and** kpi\_month = v\_in\_date\_month

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

**union**

-- tinh tieu chi level 1 Chi phí thuần hoạt động khác

**select** area\_code,

kpi\_month,

13 **as** report\_id,

**sum**(**coalesce**(total\_value,0)) **as** total\_value

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

**where** (report\_id **between** 14 **and** 19) **and** kpi\_month = v\_in\_date\_month

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

**union**

-- tinh tieu chi level 1 Tổng chi phí hoạt động

**select** area\_code,

kpi\_month,

21 **as** report\_id,

**sum**(**coalesce**(total\_value,0)) **as** total\_value

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

**where** (report\_id **between** 22 **and** 25) **and** kpi\_month = v\_in\_date\_month

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

;

-- tinh tieu chi level 1 Tổng thu nhập hoạt động

**insert** **into** finalproject.report\_tong\_hop

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

**select** area\_code,

kpi\_month,

20 **as** report\_id,

**sum**(**coalesce**(total\_value,0)) **as** total\_value

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

**where** (report\_id **in** (2,8,13)) **and** kpi\_month = v\_in\_date\_month

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

;

-- tinh tieu chi level 0 Lợi nhuận trước thuế

**insert** **into** finalproject.report\_tong\_hop

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

**select** area\_code,

kpi\_month,

1 **as** report\_id,

**sum**(**coalesce**(total\_value,0)) **as** total\_value

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

**where** (report\_id **in** (20,21,26)) **and** kpi\_month = v\_in\_date\_month

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

;

-- B11. insert vao bang cac chi so tai chinh

**insert** **into** finalproject.index\_finance

(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.no\_of\_employees\_area = 0 **THEN** 0

**ELSE** ((z.profit\_bef\_tax)::**float8** / (e.no\_of\_employees\_area) )

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

**from**

( -- tong cp hoat dong

**select** area\_code,

kpi\_month,

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

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

**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.report\_tong\_hop

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

)y **on** x.area\_code = y.area\_code

**join**

( -- loi nhuan truoc thue

**select** area\_code,

kpi\_month,

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

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

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

)z **on** z.area\_code = y.area\_code

**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.report\_tong\_hop

**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

**join**

( -- chi\_phi\_thuan\_kdv

**select** area\_code,

kpi\_month,

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

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

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

)w **on** w.area\_code = q.area\_code

**join**

( -- so\_nhan\_vien

**select** area\_code,

kpi\_month,

no\_of\_employees\_area

**from** finalproject.number\_of\_employees

**where** kpi\_month = v\_in\_date\_month

)e **on** w.area\_code = e.area\_code

;

-- B12. REPORT 2 : insert vao report 2

-- 12.1. insert vao bang report 2

-- insert report 2 : ltn avg ( id = 1)

**insert** **into** finalproject.report\_rank\_asm

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

**select** v\_in\_date\_month **as** kpi\_month,

d.ma\_tinh\_thanh **as** area\_code,

k.sale\_name,

k.email,

1 **as** report\_id,

**case**

**when** v\_in\_date\_month = '202301' **then** **coalesce**(jan\_ltn::**float**,0)

**when** v\_in\_date\_month = '202302' **then** **coalesce**((**coalesce**(jan\_ltn,0) + **coalesce**(feb\_ltn,0))::**float**/2,0)

**when** v\_in\_date\_month = '202303' **then** **coalesce**((**coalesce**(jan\_ltn,0) + **coalesce**(feb\_ltn,0) + **coalesce**(mar\_ltn,0))::**float**/3, 0)

**when** v\_in\_date\_month = '202304' **then** **coalesce**((**coalesce**(jan\_ltn,0) + **coalesce**(feb\_ltn,0) + **coalesce**(mar\_ltn,0) + **coalesce**(apr\_ltn,0))::**float**/4,0)

**when** v\_in\_date\_month = '202305' **then** **coalesce**((**coalesce**(jan\_ltn,0) + **coalesce**(feb\_ltn,0) + **coalesce**(mar\_ltn,0) + **coalesce**(apr\_ltn,0) + **coalesce**(may\_ltn,0))::**float**/5,0)

**end** **as** total\_value

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

**left** **join** finalproject.dim\_city\_structure d **on** k.area\_name = d.danh\_sach\_vung

-- loai bo nhung gia tri null tai thang truyen vao ( do null thi asm do chua lam viec tai thang do )

**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**)

;

-- insert report 2 : psdn avg (id = 2)

**insert** **into** finalproject.report\_rank\_asm

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

**select** v\_in\_date\_month **as** kpi\_month,

d.ma\_tinh\_thanh **as** area\_code,

k.sale\_name,

k.email,

2 **as** report\_id,

**case**

**when** v\_in\_date\_month = '202301' **then** **coalesce**(jan\_psdn::**float**,0)

**when** v\_in\_date\_month = '202302' **then** **coalesce**((**coalesce**(jan\_psdn,0) + **coalesce**(feb\_psdn,0))::**float**/2,0)

**when** v\_in\_date\_month = '202303' **then** **coalesce**((**coalesce**(jan\_ltn,0) + **coalesce**(feb\_psdn,0) + **coalesce**(mar\_psdn,0))::**float**/3,0)

**when** v\_in\_date\_month = '202304' **then** **coalesce**((**coalesce**(jan\_psdn,0) + **coalesce**(feb\_psdn,0) + **coalesce**(mar\_psdn,0) + **coalesce**(apr\_psdn,0))::**float**/4, 0)

**when** v\_in\_date\_month = '202305' **then** **coalesce**((**coalesce**(jan\_psdn,0) + **coalesce**(feb\_psdn,0) + **coalesce**(mar\_psdn,0) + **coalesce**(apr\_psdn,0) + **coalesce**(may\_psdn,0))::**float**/5, 0)

**end** **as** total\_value

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

**left** **join** finalproject.dim\_city\_structure d **on** k.area\_name = d.danh\_sach\_vung

-- loai bo nhung gia tri null tai thang truyen vao ( do null thi asm do chua lam viec tai thang do )

**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**)

;

-- insert report 2 : approval\_rate avg (id = 3)

**insert** **into** finalproject.report\_rank\_asm

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

**select** v\_in\_date\_month **as** kpi\_month,

d.ma\_tinh\_thanh **as** area\_code,

k.sale\_name,

k.email,

3 **as** report\_id,

**case**

**when** v\_in\_date\_month = '202301' **then** **coalesce**(jan\_approval\_rate,0)

**when** v\_in\_date\_month = '202302' **then** **coalesce**((**coalesce**(jan\_approval\_rate,0) + **coalesce**(feb\_approval\_rate,0))::**float**/2, 0)

**when** v\_in\_date\_month = '202303' **then** **coalesce**((**coalesce**(jan\_approval\_rate,0) + **coalesce**(feb\_approval\_rate,0) + **coalesce**(mar\_approval\_rate,0))::**float**/3 ,0)

**when** v\_in\_date\_month = '202304' **then** **coalesce**((**coalesce**(jan\_approval\_rate,0) + **coalesce**(feb\_approval\_rate,0) + **coalesce**(mar\_approval\_rate,0) + **coalesce**(apr\_approval\_rate,0))::**float**/4, 0)

**when** v\_in\_date\_month = '202305' **then** **coalesce**((**coalesce**(jan\_approval\_rate,0) + **coalesce**(feb\_approval\_rate,0) + **coalesce**(mar\_approval\_rate,0) + **coalesce**(apr\_approval\_rate,0) + **coalesce**(may\_approval\_rate,0))::**float**/5, 0)

**end** **as** total\_value

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

**left** **join** finalproject.dim\_city\_structure d **on** k.area\_name = d.danh\_sach\_vung

-- loai bo nhung gia tri null tai thang truyen vao ( do null thi asm do chua lam viec tai thang do )

**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**)

;

-- insert vao bang SDCK sau wo

**insert** **into** finalproject.os\_after\_wo

(area\_code, kpi\_month, total\_os\_area, total\_os\_all)

-- lay ra dnck sau wo nhom 3-5 tung khu vuc va dnck sau wo toan hang

**select** l.parent\_id **as** area\_code,

v\_in\_date\_month **as** kpi\_month,

total\_os\_area\_grp\_3\_to\_5 **as** total\_os\_area ,

total\_os\_area **as** total\_os\_all

**from**

(

-- tinh dnck\_kv tu dau nam den thang xet, tung khu vuc theo nhom 3->5

**select** d.parent\_id,f2.kpi\_month, **sum**(f2.outstanding\_principal) **as** total\_os\_area\_grp\_3\_to\_5

**from** finalproject.fact\_kpi\_month\_raw\_data f2

**join** finalproject.dim\_city\_structure d **on** d.danh\_sach\_vung = f2.pos\_city

**where** (f2.kpi\_month = v\_in\_date\_month) **and** (f2.max\_bucket **between** 3 **and** 5)

**group** **by** d.parent\_id, f2.kpi\_month

)l

**join**

(

-- dnck khu vuc sau wo

**select** d.parent\_id,f2.kpi\_month, **sum**(f2.outstanding\_principal) **as** total\_os\_area

**from** finalproject.fact\_kpi\_month\_raw\_data f2

**join** finalproject.dim\_city\_structure d **on** d.danh\_sach\_vung = f2.pos\_city

**where** (f2.kpi\_month = v\_in\_date\_month)

**group** **by** d.parent\_id, f2.kpi\_month

)o1 **on** o1.kpi\_month = l.kpi\_month **and** l.parent\_id = o1.parent\_id

;

-- insert vao bang npl

**insert** **into** finalproject.npl\_truoc\_wo\_luy\_ke

(area\_code, kpi\_month, npl\_bef\_wo)

**select** o.area\_code,

o.kpi\_month,

(o.total\_os\_area + w.wo\_luyke)::**float8**\*100/(o.total\_os\_all + w.wo\_luyke) **as** npl\_bef\_wo

**from** finalproject.os\_after\_wo o

**join** finalproject.wo\_by\_month w **on** w.area\_code = o.area\_code **and** w.kpi\_month = o.kpi\_month

;

-- insert report 2 : npl

**insert** **into** finalproject.report\_rank\_asm

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

**select** n.kpi\_month,

n.area\_code,

k.sale\_name,

k.email,

4 **as** report\_id,

npl\_bef\_wo **as** npl\_truoc\_wo\_luy\_ke

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

**left** **join** finalproject.dim\_city\_structure d **on** k.area\_name = d.danh\_sach\_vung

**join** finalproject.npl\_truoc\_wo\_luy\_ke n **on** n.area\_code = d.ma\_tinh\_thanh

;

-- insert report 2 : cac chi tieu tai chinh

-- cir

**insert** **into** finalproject.report\_rank\_asm

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

**select** i.kpi\_month,

i.area\_code,

k.sale\_name ,

k.email,

5 **as** report\_id,

i.cir **as** total\_value

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

**left** **join** finalproject.dim\_city\_structure d **on** k.area\_name = d.danh\_sach\_vung

**join** finalproject.index\_finance i **on** i.area\_code = d.ma\_tinh\_thanh

;

-- margin

**insert** **into** finalproject.report\_rank\_asm

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

**select** i.kpi\_month,

i.area\_code,

k.sale\_name ,

k.email,

6 **as** report\_id,

i.margin **as** total\_value

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

**left** **join** finalproject.dim\_city\_structure d **on** k.area\_name = d.danh\_sach\_vung

**join** finalproject.index\_finance i **on** i.area\_code = d.ma\_tinh\_thanh

;

-- hs\_von

**insert** **into** finalproject.report\_rank\_asm

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

**select** i.kpi\_month,

i.area\_code,

k.sale\_name,

k.email,

7 **as** report\_id,

i.return\_of\_capital **as** total\_value

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

**left** **join** finalproject.dim\_city\_structure d **on** k.area\_name = d.danh\_sach\_vung

**join** finalproject.index\_finance i **on** i.area\_code = d.ma\_tinh\_thanh

;

-- hieu\_suat\_binh\_quan\_tren\_nhan\_su

**insert** **into** finalproject.report\_rank\_asm

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

**select** i.kpi\_month,

i.area\_code,

k.sale\_name,

k.email,

8 **as** report\_id,

i.avg\_profit\_per\_employee **as** total\_value

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

**left** **join** finalproject.dim\_city\_structure d **on** k.area\_name = d.danh\_sach\_vung

**join** finalproject.index\_finance i **on** i.area\_code = d.ma\_tinh\_thanh

;

-- B13. ghi thoi gian bat dau va ket thuc chay procedure , xu ly ngoai le va ghi loi

-- Nếu chạy xong không lỗi, ghi nhận thời gian kết thúc và trạng thái thành công

**begin**

**update** finalproject.log\_tracking

**set** end\_time = **clock\_timestamp**(),

is\_successful = **true**

**where** procedure\_name = 'report\_tong\_hop\_T2\_prc' **and** start\_time = (

**SELECT** **MAX**(start\_time)

**FROM** finalproject.log\_tracking

**WHERE** procedure\_name = 'report\_tong\_hop\_T2\_prc'

);

-- bat loi voi exception : ghi nhan tg ket thuc, trang thai va chi tiet loi

**exception** **when** **others** **then**

**update** finalproject.log\_tracking

**set** end\_time = **clock\_timestamp**(),

is\_successful = **false**,

error\_log = 'Error while inserting employee: ' || **SQLERRM** || ' - ' || **SQLSTATE**

**where** procedure\_name = 'report\_tong\_hop\_T2\_prc' **and** start\_time =(

**SELECT** **MAX**(start\_time)

**FROM** finalproject.log\_tracking

**WHERE** procedure\_name = 'report\_tong\_hop\_T2\_prc'

);

**end**;

**end**;

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

**call** finalproject.report\_tong\_hop\_T2\_prc('2023-05-31');

# Viết các Direct Query

-- lấy ra bảng kết quả hoạt động kinh doanh theo từng khu vực

**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\_tong\_hop 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**

;

-- lấy ra bảng đánh giá hoạt động từng asm dựa theo các KPI metrics, đánh rank cho từng tiêu chí KPI metrics

**SELECT**

kpi\_month,

area\_code,

name\_area,

sale\_name,

email,

diem\_quy\_mo + diem\_fin **AS** tong\_diem,

**RANK**() **OVER** (**PARTITION** **BY** kpi\_month **ORDER** **BY** (diem\_quy\_mo + diem\_fin) **ASC**) **AS** rank\_final,

ltn\_avg,

ltn\_avg\_rank,

psdn\_avg,

psdn\_avg\_rank,

approval\_rate\_avg,

approval\_rate\_avg\_rank,

npl\_truoc\_wo\_luy\_ke,

npl\_truoc\_wo\_luy\_ke\_rank,

diem\_quy\_mo,

**RANK**() **OVER** (**PARTITION** **BY** kpi\_month **ORDER** **BY** diem\_quy\_mo **ASC**) **AS** rank\_ptkd,

cir,

cir\_rank,

margin,

margin\_rank,

hs\_von,

hs\_von\_rank,

hsbq\_nhan\_su,

hsbq\_nhan\_su\_rank,

diem\_fin,

**RANK**() **OVER** (**PARTITION** **BY** kpi\_month **ORDER** **BY** diem\_fin **ASC**) **AS** rank\_fin

**FROM** (

**SELECT**

kpi\_month,

area\_code,

danh\_sach\_vung **AS** name\_area,

sale\_name,

email,

ltn\_avg,

ltn\_avg\_rank,

psdn\_avg,

psdn\_avg\_rank,

approval\_rate\_avg,

approval\_rate\_avg\_rank,

npl\_truoc\_wo\_luy\_ke,

npl\_truoc\_wo\_luy\_ke\_rank,

ltn\_avg\_rank + psdn\_avg\_rank + approval\_rate\_avg\_rank + npl\_truoc\_wo\_luy\_ke\_rank **AS** diem\_quy\_mo,

cir,

cir\_rank,

margin,

margin\_rank,

hs\_von,

hs\_von\_rank,

hsbq\_nhan\_su,

hsbq\_nhan\_su\_rank,

cir\_rank + margin\_rank + hs\_von\_rank + hsbq\_nhan\_su\_rank **AS** diem\_fin

**FROM** (

**SELECT**

r.kpi\_month,

r.area\_code,

dcs.danh\_sach\_vung,

r.sale\_name,

r.email,

**MAX**(**CASE** **WHEN** r.report\_id = 1 **THEN** r.total\_value **END**) **AS** ltn\_avg,

**MAX**(**CASE** **WHEN** r.report\_id = 1 **THEN** r.ranked\_desc **END**) **AS** ltn\_avg\_rank,

**MAX**(**CASE** **WHEN** r.report\_id = 2 **THEN** r.total\_value **END**) **AS** psdn\_avg,

**MAX**(**CASE** **WHEN** r.report\_id = 2 **THEN** r.ranked\_desc **END**) **AS** psdn\_avg\_rank,

**MAX**(**CASE** **WHEN** r.report\_id = 3 **THEN** r.total\_value **END**) **AS** approval\_rate\_avg,

**MAX**(**CASE** **WHEN** r.report\_id = 3 **THEN** r.ranked\_desc **END**) **AS** approval\_rate\_avg\_rank,

**MAX**(**CASE** **WHEN** z.report\_id = 4 **THEN** z.total\_value **END**) **AS** npl\_truoc\_wo\_luy\_ke,

**MAX**(**CASE** **WHEN** z.report\_id = 4 **THEN** z.ranked\_asc\_4 **END**) **AS** npl\_truoc\_wo\_luy\_ke\_rank,

**MAX**(**CASE** **WHEN** x.report\_id = 5 **THEN** x.total\_value **END**) **AS** cir,

**MAX**(**CASE** **WHEN** x.report\_id = 5 **THEN** x.ranked\_asc\_5 **END**) **AS** cir\_rank,

**MAX**(**CASE** **WHEN** r.report\_id = 6 **THEN** r.total\_value **END**) **AS** margin,

**MAX**(**CASE** **WHEN** r.report\_id = 6 **THEN** r.ranked\_desc **END**) **AS** margin\_rank,

**MAX**(**CASE** **WHEN** r.report\_id = 7 **THEN** r.total\_value **END**) **AS** hs\_von,

**MAX**(**CASE** **WHEN** r.report\_id = 7 **THEN** r.ranked\_desc **END**) **AS** hs\_von\_rank,

**MAX**(**CASE** **WHEN** r.report\_id = 8 **THEN** r.total\_value **END**) **AS** hsbq\_nhan\_su,

**MAX**(**CASE** **WHEN** r.report\_id = 8 **THEN** r.ranked\_desc **END**) **AS** hsbq\_nhan\_su\_rank

**FROM**

(

**SELECT**

kpi\_month,

area\_code,

sale\_name,

email,

report\_id,

total\_value,

**DENSE\_RANK**() **OVER** (**PARTITION** **BY** kpi\_month, report\_id **ORDER** **BY** total\_value **DESC**) **AS** ranked\_desc

**FROM** finalproject.report\_rank\_asm

**WHERE** report\_id **IN** (1,2,3,6,7,8)

) r

**JOIN**

(

**SELECT**

kpi\_month,

area\_code,

sale\_name,

email,

report\_id,

total\_value,

**DENSE\_RANK**() **OVER** (**PARTITION** **BY** kpi\_month, report\_id **ORDER** **BY** total\_value **ASC**) **AS** ranked\_asc\_5

**FROM** finalproject.report\_rank\_asm

**WHERE** report\_id = 5

) x

**ON** r.email = x.email **AND** r.kpi\_month = x.kpi\_month **AND** r.area\_code = x.area\_code

**JOIN**

(

**SELECT**

kpi\_month,

area\_code,

sale\_name,

email,

report\_id,

total\_value,

**RANK**() **OVER** (**PARTITION** **BY** kpi\_month, report\_id **ORDER** **BY** total\_value **ASC**) **AS** ranked\_asc\_4

**FROM** finalproject.report\_rank\_asm

**WHERE** report\_id = 4

) z

**ON** z.email = x.email **AND** z.kpi\_month = x.kpi\_month **AND** z.area\_code = x.area\_code

**JOIN** finalproject.dim\_city\_structure dcs **ON** dcs.ma\_tinh\_thanh = z.area\_code

**GROUP** **BY** r.kpi\_month, r.area\_code,r.sale\_name, r.email, dcs.danh\_sach\_vung

)

**WHERE** ltn\_avg **IS** **NOT** **NULL**

)

;

-- lấy ra bảng index finance

**select** dcs.danh\_sach\_vung ,

if2.kpi\_month ,

if2.cir ,

if2.change\_cir,

if2.margin ,

if2.change\_margin,

if2.return\_of\_capital ,

if2.change\_roc,

if2.avg\_profit\_per\_employee,

if2.change\_appe

**from** finalproject.index\_finance if2

**join** finalproject.dim\_city\_structure dcs **on** if2.area\_code = dcs.ma\_tinh\_thanh

**order** **by** if2.kpi\_month **asc**;

-- lay bang so nhan vien

**select** d.danh\_sach\_vung **as** region\_name,

n.kpi\_month,

n.no\_of\_employees\_area,

n.no\_of\_employees\_all

**from** finalproject.number\_of\_employees n

**join** finalproject.dim\_city\_structure d **on** n.area\_code = d.ma\_tinh\_thanh