

# U2M10.LW.ETL Overview - Load and Transformation

Shkrabatouskaya Vera

[https://github.com/VeraShkrabatouskaya/DataMola\\_Data-Camping-2022](https://github.com/VeraShkrabatouskaya/DataMola_Data-Camping-2022)

## 2. ETL Transformation - BASIC

### 2.1. Task 01: Transformation Description

#### **Overview of Loading and Transformation in Data Warehouses**

Data transformations are often the most complex and, in terms of processing time, the most costly part of the extraction, transformation, and loading (ETL) process. They can range from simple data conversions to extremely complex data scrubbing techniques. Many, if not all, data transformations can occur within an Oracle database, although transformations are often implemented outside of the database (for example, on flat files) as well.

Data transformation is the T in ETL. Data Transformation means that data in one format is processed, either inside or outside the data store and persisted in the new required format. This transformation can take several forms, from column storage types, file types, or even encoding types. There is no “single database” solution for company, so data reside in different locations and formats making data transformation necessary to ensure data from one application or database is available to other applications and databases.

Data is oxygen for the modern company, and ETL has enabled a lot of value. To answer many of the business’ analytical questions, it’s essential to integrate these information silos and leverage existing IT assets to create more flexible, agile enterprise systems. One way to do this is through data transformation.

In the ETL process, Transform is the process of converting the extracted data from its previous form into the form it needs to be in so that it can be placed into another database. Transformation occurs by using rules or lookup tables or by combining the data with other data or potentially code.

#### Transformation Flow

From an architectural perspective, data can be transformed in the following ways:

- Multistage Data Transformation
- Pipelined Data Transformation
- Staging Area

### Multistage Data Transformation

When using Oracle Database as a transformation engine, a common strategy is to implement each transformation as a separate SQL operation and to create a separate, temporary staging table to store the incremental results for each step. This load-then-transform strategy also provides a natural checkpointing scheme to the entire transformation process, which enables the process to be more easily monitored and restarted. However, a disadvantage to multistaging is that the space and time requirements increase.

It may also be possible to combine many simple logical transformations into a single SQL statement or single PL/SQL procedure. Doing so may provide better performance than performing each step independently, but it may also introduce difficulties in modifying, adding, or dropping individual transformations, as well as recovering from failed transformations.

### Pipelined Data Transformation

The ETL process flow can be changed dramatically and the database becomes an integral part of the ETL solution.

The new functionality renders some of the former necessary process steps obsolete while some others can be remodeled to enhance the data flow and the data transformation to become more scalable and non-interruptive. The task shifts from serial transform-then-load process (with most of the tasks done outside the database) or load-then-transform process, to an enhanced transform-while-loading.

It is important to understand that the database offers toolkit functionality rather than trying to address a one-size-fits-all solution. The underlying database has to enable the most appropriate ETL process flow for a specific customer need, and not dictate or constrain it from a technical perspective.

### Staging Area

The overall speed of your load is determined by how quickly the raw data can be read from the staging area and written to the target table in the database. It is highly recommended that you stage your raw data across as many physical disks as possible to ensure the reading of the raw data is not a bottleneck during the load.

For the Starcom business model, we will use - Multistage Data Transformation.

### 3. ETL Transformation – Loading SAL

#### 3.1. Task 02: Loading to SAL Layer Data

Let's create views to solve business problems using the Data Warehouse.

- v\_sal\_KPI\_daily

The screenshot shows the Oracle SQL Developer interface with two tabs open: 'Worksheet' and 'Query Builder'. The 'Worksheet' tab contains the SQL code for creating the view:

```
...21 view_1.sql × Lab 2_Tasks 03-05_Reports.sql × ts_sal...
SQL Worksheet History
Worksheet Query Builder
1 alter session set current_schema=SAL_CL;
2 --drop view v_sal_KPI_daily;
3 |
4 alter session set current_schema=DW_DATA;
5 GRANT SELECT ON DW_DATA.FCT_business TO SAL_CL;
6 alter session set current_schema=DW_DATA;
7 GRANT SELECT ON DW_DATA.DIM_agency TO SAL_CL;
8 alter session set current_schema=DW_DATA;
9 GRANT SELECT ON DW_DATA.DIM_promotion TO SAL_CL;
10
11 alter session set current_schema=SAL_CL;
```

The 'Script Output' pane shows the execution results:

```
Session altered.

Grant succeeded.

Session altered.

Grant succeeded.

Session altered.

Grant succeeded.

Session altered.
```

The 'Query Builder' tab shows the detailed SQL code for the view:

```
CREATE OR REPLACE VIEW v_sal_KPI_daily
AS SELECT
    fct_b.time_ID,
    ag.agency_name,
    ag.agency_city,
    ag.agency_country,
    prom.promotion_name,
    prom.promotion_media_type,
    prom.promotion_KPI,
    prom.promotion_metric_amount,
    prom.promotion_price,
    (prom.promotion_metric_amount*prom.promotion_price) as cost_of_placement_without_VAT,
    prom.promotion_distinct_percent,
    ROUND((prom.promotion_metric_amount*prom.promotion_price*(1-prom.promotion_distinct_percent/100)),2) as cost_without_VAT_with_discount,
    ag.agency_VAT_percent,
    ROUND(((prom.promotion_metric_amount*prom.promotion_price*(1-prom.promotion_distinct_percent/100))*ag.agency_VAT_percent/100),2) as VAT_amount,
    ROUND(((prom.promotion_metric_amount*prom.promotion_price*(1-prom.promotion_distinct_percent/100)) + ((prom.promotion_metric_amount*prom.promotion_price*(1-prom.promotion_distinct_percent/100))*ag.agency_fee_percent,
    ROUND(((prom.promotion_metric_amount*prom.promotion_price*(1-prom.promotion_distinct_percent/100))*ag.agency_fee_percent/100),2) as agency_fee_amount_without_VAT,
    ROUND(((prom.promotion_metric_amount*prom.promotion_price*(1-prom.promotion_distinct_percent/100))*ag.agency_fee_percent/100)*(1-ag.agency_VAT_percent/100),2),
    ROUND(((prom.promotion_metric_amount*prom.promotion_price*(1-prom.promotion_distinct_percent/100)) + ((prom.promotion_metric_amount*prom.promotion_price*(1-prom.promotion_distinct_percent/100)) + ((prom.promotion_metric_amount*prom.promotion_price*(1-prom.promotion_distinct_percent/100))*ag.agency_VAT_percent/100),2) as total_cost,
    ROUND(((prom.promotion_metric_amount*prom.promotion_price*(1-prom.promotion_distinct_percent/100)) + ((prom.promotion_metric_amount*prom.promotion_price*(1-prom.promotion_distinct_percent/100))*ag.agency_fee_percent/100)*(1-ag.agency_VAT_percent/100),2) as final_total_cost
FROM DW_DATA.FCT_business fct_b
left join DW_DATA.DIM_agency ag on fct_b.agency_ID = ag.agency_ID
left join DW_DATA.DIM_promotion prom on fct_b.promotion_ID = prom.promotion_ID
ORDER BY 1;
```

The 'Script Output' pane for the Query Builder shows:

```
View V_SAL_KPI_DAILY created.
```

alter session set current\_schema=SAL\_CL;  
SELECT \* FROM v\_sal\_KPI\_daily;

Fetched 50 rows in 0.925 seconds

TIME_ID	AGENCY_NAME	AGENCY_CITY	AGENCY_COUNTRY	PROMOTION_NAME	PROMOTION_MEDIA_TYPE	PROMOTION_KPI	PROMOTION_METRIC_AMOUNT	PROMOTION_PRICE
1	01-JAN-22 Starcom	Paris	France	498 SAMSUNG_Smartphones_digital	digital	CPL	72	155
2	01-JAN-22 Starcom	Barcelona	Spain	506 SAMSUNG_Smartphones_digital	digital	CPL	59	974
3	01-JAN-22 Starcom	Paris	France	513 SAMSUNG_Headphones_digital	digital	CPL	60	441
4	01-JAN-22 Starcom	London	United Kingdom	555 SAMSUNG_Refrigerators_radio	radio	CPL	96	946
5	01-JAN-22 Starcom	Sydney	Australia	602 SAMSUNG_Dishwashers_radio	radio	CPL	18	969
6	01-JAN-22 Starcom	Paris	France	603 SAMSUNG_Dishwashers_radio	radio	CPL	31	226
7	01-JAN-22 Starcom	Warsaw	Poland	640 SAMSUNG_Vacuum_Cleaners_radio	radio	CPL	41	722
8	01-JAN-22 Starcom	New York	United States	646 SAMSUNG_Smart_watches_radio	radio	CPL	57	666
9	01-JAN-22 Starcom	Cairo	Egypt	654 SAMSUNG_Smart_watches_radio	radio	CPL	32	798
10	01-JAN-22 Starcom	Paris	France	693 SAMSUNG_Headphones_radio	radio	CPL	78	814
11	01-JAN-22 Starcom	Milan	Italy	747 SAMSUNG_Ovens_OOH	OOH	CPL	16	341
12	01-JAN-22 Starcom	Nicosia	Cyprus	755 SAMSUNG_Cooking_ovens_OOH	OOH	CPL	82	399
13	01-JAN-22 Starcom	Moscow	Russia	779 SAMSUNG_Washing_machines_OOH	OOH	CPL	19	743
14	01-JAN-22 Starcom	Nicosia	Cyprus	785 SAMSUNG_Dishwashers_OOH	OOH	CPL	65	365
15	01-JAN-22 Starcom	Berlin	Germany	832 SAMSUNG_Smart_watches_OOH	OOH	CPL	30	600
16	01-JAN-22 Starcom	Hong Kong	China	846 SAMSUNG_TVs_OOH	OOH	CPL	33	395
17	01-JAN-22 Starcom	Sydney	Australia	1187 SAMSUNG_Smart_watches_design	design	CPL	58	528
18	01-JAN-22 Starcom	Paris	France	1203 SAMSUNG_TVs_design	design	CPL	10	466
19	01-JAN-22 Starcom	Berlin	Germany	1237 SAMSUNG_Headphones_design	design	CPL	62	431
20	01-JAN-22 Starcom	Hong Kong	China	1266 VISA_Sponsorship_TV	TV	CPL	82	870
21	01-JAN-22 Starcom	Shanghai	China	1283 VISA_Sponsorship_press	press	CPL	36	400
22	01-JAN-22 Starcom	London	United Kingdom	1290 VISA_Sponsorship_press	press	CPL	59	906
23	01-JAN-22 Starcom	Barcelona	Spain	1316 VISA_Sponsorship_radio	radio	CPL	31	868

```
41 | SELECT count(*) FROM v_sal_KPI_daily;
```

All Rows Fetched: 1 in 0.021 seconds

COUNT(*)
1 336000

- v\_sal\_budgets

```
4 | alter session set current_schema=DW_DATA;
5 | GRANT SELECT ON DW_DATA.FCT_business TO SAL_CL;
6 | alter session set current_schema=DW_DATA;
7 | GRANT SELECT ON DW_DATA.DIM_agency TO SAL_CL;
8 | alter session set current_schema=DW_DATA;
9 | GRANT SELECT ON DW_DATA.DIM_promotion TO SAL_CL;
10|
```

Session altered.

Grant succeeded.

Session altered.

Grant succeeded.

Session altered.

Grant succeeded.

SQL Worksheet | History

Worksheet | Query Builder

```

11 alter session set current_schema=SAL_CL;
12
13 CREATE OR REPLACE VIEW v_sal_budgets
14 AS SELECT
15     case grouping(extract(year from fct_b.TIME_ID))
16     when 1
17     then 'All Years'
18     else to_char(extract(year from fct_b.TIME_ID))
19     end year
20 ,    case grouping('Q'||to_char(fct_b.TIME_ID, 'Q'))
21     when 1
22     then 'All Quarters'
23     else 'Q'||to_char(fct_b.TIME_ID, 'Q')
24     end quarter
25 ,    case grouping(to_char(fct_b.TIME_ID, 'MONTH'))
26     when 1
27     then 'All Months'
28     else to_char(fct_b.TIME_ID, 'MONTH')
29     end month
30 ,    case grouping(to_char(fct_b.TIME_ID, 'DAY'))
31     when 1
32     then 'All Days'
33     else to_char(fct_b.TIME_ID, 'DAY')
34     end day
35 ,    SUM (ROUND(((prom.promotion_metric_amount*prom.promotion_price*(1-prom.promotion_distinct_percent/100))*ag.agency_fee_percent/100)*(1+ag.agency_VAT_percent,2)

```

Script Output | Task completed in 0.036 seconds

Session altered.

View V\_SAL\_BUDGETS created.

53 alter session set current\_schema=SAL\_CL;

54 SELECT \* FROM v\_sal\_budgets;

55

SQL | All Rows Fetched: 61 in 1.632 seconds

	YEAR	QUARTER	MONTH	DAY	GROSS_REVENUE	NET_REVENUE	GROSS_COST	NET_COST	GROSS_PROFIT	NET_PROFIT	MARGIN_PERCENT
1	2022	Q1	JANUARY	FRIDAY	8922144.68	7600408.7	2156825.11	1840031	6765319.87	5760377	75.83
2	2022	Q1	JANUARY	SATURDAY	11354703.33	9668032.51	2717231.58	2319191	8637472.02	7348840.73	76.07
3	2022	Q1	JANUARY	SUNDAY	11405232.28	9709098.87	2698807.81	2303655	8706424.9	7405443.06	76.34
4	2022	Q1	JANUARY	MONDAY	11215908.64	9543363.73	2680852.26	2294340	8527856.24	7249022.96	76.03
5	2022	Q1	JANUARY	TUESDAY	9041021.34	7694446.61	2152582.27	1836027	6888439.05	5858419.06	76.19
6	2022	Q1	JANUARY	WEDNESDAY	8920679.37	7589304.64	2166851.06	1849464	6753828.5	5739840.01	75.71
7	2022	Q1	JANUARY	THURSDAY	9187081.03	7823997.66	2159995.64	1843747	7027085.49	5980249.97	76.49
8	2022	Q1	FEBRUARY	TUESDAY	8909775.4	7657892.22	2171138.77	1852950	6819636.85	5804941.59	75.85
9	2022	Q1	FEBRUARY	WEDNESDAY	9055519.75	7711978.4	2156304.43	1840555	6899215.54	5871422.83	76.19
10	2022	Q1	FEBRUARY	THURSDAY	8843856.49	7530073.13	2171592.38	1853190	6672264.02	5676882.53	75.45
11	2022	Q1	FEBRUARY	FRIDAY	9145739.75	7784038.66	2154893.12	1838294	6990846.9	5945744.19	76.44
12	2022	Q1	FEBRUARY	MONDAY	9891667.69	7651819.59	2157083.58	1840688	6824584.28	5811130.91	75.98
13	2022	Q1	FEBRUARY	SATURDAY	9105782.8	7742947.32	2171004.41	1852404	6934778.58	5890542.7	76.16
14	2022	Q1	FEBRUARY	SUNDAY	8981393.16	7641654.12	2157822.9	1841336	6823570.39	5800317.44	75.97
15	2022	Q1	MARCH	TUESDAY	11256930.04	9586394.67	2717264.22	2319780	8539665.98	7266613.95	75.86
16	2022	Q1	MARCH	WEDNESDAY	11212932.28	9546489.14	2687911.03	2293649	8525021.51	7252839.39	76.03
17	2022	Q1	MARCH	THURSDAY	11196340.35	9529929.32	2716553.62	2318527	8479786.65	7211401.57	75.74
18	2022	Q1	MARCH	FRIDAY	9159264.96	7797664.65	2177545.92	1857760	6981719.44	5939904.14	76.23
19	2022	Q1	MARCH	SUNDAY	9068968.94	7718943.36	2144383.71	1831048	6924585.43	5887894.79	76.35
20	2022	Q1	MARCH	MONDAY	9041810.8	7694432.68	2169146.76	1851351	6872664.29	5843081.11	76.01

- v\_sal\_employee\_salary\_total

```

4 alter session set current_schema=DW_DATA;
5 GRANT SELECT ON DW_DATA.FCT_business TO SAL_CL;
6 alter session set current_schema=DW_DATA;
7 GRANT SELECT ON DW_DATA.DIM_agency TO SAL_CL;
8 alter session set current_schema=DW_DATA;
9 GRANT SELECT ON DW_DATA.DIM_promotion TO SAL_CL;
10

```

Script Output | Task completed in 0.087 seconds

Session altered.

Grant succeeded.

Session altered.

Grant succeeded.

Session altered.

Grant succeeded.

SQL Worksheet History

```

11 alter session set current_schema=SAL_CL;
12
13 CREATE OR REPLACE VIEW v_sal_employee_salary_total
14 AS
15 WITH salary_employees AS (
16 SELECT
17 TRUNC(fct_b.TIME_ID, 'YYYY') AS year,
18 ,TRUNC(fct_b.TIME_ID, 'MM') AS month,
19 'MONTH' period,
20 ,SUM(ROUND(prom.employee_salary_project*(1+ag.agency_VAT_percent/100),2)) as gross_salary_employee,
21 ,SUM(prom.employee_salary_project) as net_salary_employee
22 FROM DW_DATA.FCT_business fct_b
23 left join DW_DATA.DIM_agency ag on fct_b.agency_ID = ag.agency_ID
24 left join DW_DATA.DIM_promotion prom on fct_b.promotion_ID = prom.promotion_ID
25 GROUP BY TRUNC(fct_b.TIME_ID, 'YYYY'), TRUNC(fct_b.TIME_ID, 'MM'))
26 select year, month, period, gross_salary_employee, net_salary_employee
27 from salary_employees
28     MODEL
29         DIMENSION BI (year, month, period)
30         MEASURES (gross_salary_employee, net_salary_employee)
31         RULES(
32
33     gross_salary_employee[POR year IN (SELECT DISTINCT year FROM salary_employees),
34 NULL, 'YEAR']=SUM(gross_salary_employee)[cv(year), ANY, 'MONTH'],
35 gross_salary_employee [NULL, NULL,'ALL']=SUM(gross_salary_employee)[ANY, NULL,'YEAR'],
36

```

Script Output | Task completed in 0.029 seconds

Session altered.

View V\_SAL\_EMPLOYEE\_SALARY\_TOTAL created.

```

41 alter session set current_schema=SAL_CL;
42 SELECT * FROM v_sal_employee_salary_total;
43
44

```

Script Output | All Rows Fetched: 9 in 0.245 seconds

YEAR	MONTH	PERIOD	GROSS_SALARY_EMPLOYEE	NET_SALARY_EMPLOYEE
1	01-JAN-22	01-MAR-22 MONTH	16782887.55	14324052
2	01-JAN-22	01-JAN-22 MONTH	16740345.73	14286455
3	01-JAN-22	01-FEB-22 MONTH	15139839.59	12919417
4	01-JAN-22	01-APR-22 MONTH	16197508.94	13823913
5	01-JAN-22	01-MAY-22 MONTH	16768528.37	14313747
6	01-JAN-22	01-JUN-22 MONTH	16224818.16	13847563
7	01-JAN-22	01-JUL-22 MONTH	10340195.31	8826010
8	01-JAN-22	(null) YEAR	108194123.65	92341157
9	(null)	ALL	108194123.65	92341157

- v\_sal\_budgets\_agency

```

11 alter session set current_schema=SAL_CL;
12
13 CREATE OR REPLACE VIEW v_sal_budgets_agency
14 AS SELECT
15     TRUNC(fct_b.TIME_ID, 'MM') as date_month,
16     ag.agency_name,
17     ag.agency_country,
18     ag.agency_city,
19     SUM(ROUND((prom.promotion_metric_amount*prom.promotion_price*(1-prom.promotion_distinct_percent/100)*ag.agency_fee_percent/100)*(1+ag.agency_VAT_percent,
20     SUM(ROUND((prom.promotion_metric_amount*prom.promotion_price*(1-prom.promotion_distinct_percent/100)*ag.agency_fee_percent/100),2)), as NET_Revenue,
21     SUM(ROUND(prom.employee_salary_project*(1+ag.agency_VAT_percent/100),2)) as GROSS_Cost,
22     SUM(prom.employee_salary_project) as NET_Cost,
23     SUM(ROUND(((prom.promotion_metric_amount*prom.promotion_price*(1-prom.promotion_distinct_percent/100)*ag.agency_fee_percent/100)*(1+ag.agency_VAT_percent,
24     SUM(ROUND(((prom.promotion_metric_amount*prom.promotion_price*(1-prom.promotion_distinct_percent/100)*ag.agency_fee_percent/100)-prom.employee_salary,
25     ROUND(SUM(ROUND(((prom.promotion_metric_amount*prom.promotion_price*(1-prom.promotion_distinct_percent/100)*ag.agency_fee_percent/100)*(1+ag.agency_VAT,
26 FROM DW_DATA.FCT_business fct_b
27 left join DW_DATA.DIM_agency ag on fct_b.agency_ID = ag.agency_ID
28 left join DW_DATA.DIM_promotion prom on fct_b.promotion_ID = prom.promotion_ID
29 GROUP BY TRUNC(fct_b.TIME_ID, 'MM'), ROLLUP(ag.agency_name, ag.agency_country, ag.agency_city)
30 HAVING TRUNC(fct_b.TIME_ID, 'MM') IS NOT NULL
31 and ag.agency_name IS NOT NULL
32 order by TRUNC(fct_b.TIME_ID, 'MM'), ag.agency_name, ag.agency_country, ag.agency_city;

```

Script Output | Task completed in 0.034 seconds

Session altered.

View V\_SAL\_BUDGETS\_AGENCY created.

Script Output | Fetched 100 rows in 1.226 seconds

```

34 alter session set current_schema=SAL_CL;
35 SELECT * FROM v_sal_budgets_agency;

```

SQL | Fetched 100 rows in 1.226 seconds

DATE_MONTH	AGENCY_NAME	AGENCY_COUNTRY	AGENCY_CITY	GROSS_REVENUE	NET_REVENUE	GROSS_COST	NET_COST	GROSS_PROFIT	NET_PROFIT	MARGIN_PERCENT
22 01-JAN-22	Starcom	Switzerland	Zurich	1819977.79	1689858.98	1029297.11	955706	790682.25	734152.73	43.44
23 01-JAN-22	Starcom	Switzerland	(null)	1819977.79	1689858.98	1029297.11	955706	790682.25	734152.73	43.44
24 01-JAN-22	Starcom	UAE	Dubai	3594096.88	3422949.19	994671.3	947306	2599425.56	2475643.19	72.32
25 01-JAN-22	Starcom	UAE	(null)	3594096.88	3422949.19	994671.3	947306	2599425.56	2475643.19	72.32
26 01-JAN-22	Starcom	United Kingdom	London	5058015.23	4215014.16	1136858.4	947382	3921156.72	3267631.59	77.52
27 01-JAN-22	Starcom	United Kingdom	(null)	5058015.23	4215014.16	1136858.4	947382	3921156.72	3267631.59	77.52
28 01-JAN-22	Starcom	United States	New York	5046478.23	4388243.47	1104147.2	960128	3942330.92	3428114.95	78.12
29 01-JAN-22	Starcom	United States	(null)	5046478.23	4388243.47	1104147.2	960128	3942330.92	3428114.95	78.12
30 01-JAN-22	Starcom	(null)	(null)	70046770.67	59628652.72	16740345.73	14286455	53306426.07	45342192.79	76.1
31 01-FEB-22	Starcom	Australia	Sydney	953245.24	757747.3	1088542.45	865296	-135297.11	-107549.23	-14.19
32 01-FEB-22	Starcom	Australia	(null)	953245.24	757747.3	1088542.45	865296	-135297.11	-107549.23	-14.19
33 01-FEB-22	Starcom	China	Hong Kong	4396447.3	3890662.98	967287.91	856007	3429159.36	3034655.52	78
34 01-FEB-22	Starcom	China	Shanghai	4342295.99	3842741.39	971963.85	860145	3370332.13	2982595.89	77.62
35 01-FEB-22	Starcom	China	(null)	8738743.29	7733404.37	1939251.76	1716152	6799491.49	6017251.41	77.81
36 01-FEB-22	Starcom	Cyprus	Nicosia	6394318.62	5373377.49	1027332.95	863305	5366985.67	4510072.38	83.93
37 01-FEB-22	Starcom	Cyprus	(null)	6394318.62	5373377.49	1027332.95	863305	5366985.67	4510072.38	83.93
38 01-FEB-22	Starcom	Egypt	Cairo	4433594.39	3889119.61	980419.38	860017	3453174.96	3029102.14	77.89
39 01-FEB-22	Starcom	Egypt	(null)	4433594.39	3889119.61	980419.38	860017	3453174.96	3029102.14	77.89
40 01-FEB-22	Starcom	France	Paris	1814314.81	1511929.46	1035458.4	862882	778856.41	649047.12	42.93
41 01-FEB-22	Starcom	France	(null)	1814314.81	1511929.46	1035458.4	862882	778856.41	649047.12	42.93
42 01-FEB-22	Starcom	Germany	Berlin	2712908.66	2279755.47	1022576.52	859308	1690332.14	1420447.23	62.31
43 01-FEB-22	Starcom	Germany	(null)	2712908.66	2279755.47	1022576.52	859308	1690332.14	1420447.23	62.31

- v\_sal\_budgets\_customer\_brand

```

4 alter session set current_schema=DW_DATA;
5 GRANT SELECT ON DW_DATA.FCT_business TO SAL_CL;
6 alter session set current_schema=DW_DATA;
7 GRANT SELECT ON DW_DATA.DIM_agency TO SAL_CL;
8 alter session set current_schema=DW_DATA;
9 GRANT SELECT ON DW_DATA.DIM_promotion TO SAL_CL;
10 alter session set current_schema=DW_DATA;
11 GRANT SELECT ON DW_DATA.DIM_customer TO SAL_CL;

```

Script Output | Task completed in 0.127 seconds

Grant succeeded.

Session altered.

Grant succeeded.

Session altered.

Grant succeeded.

Session altered.

Grant succeeded.

Welcome Page | VeraDB | t\_FCT\_business.sql | sa\_transaction\_Reports\_FCT\_business.sql | Lab 2\_Tasks 03-05\_Reports.sql | v\_sal\_budgets\_customer\_brand.sql | VeraDB

SQL Worksheet | History

Worksheet | Query Builder

```

13 alter session set current_schema=SAL_CL;
14
15 CREATE OR REPLACE VIEW v_sal_budgets_customer_brand
16 AS SELECT
17   TRUNC(fct_b.TIME_ID, 'MM') as date_month,
18   ag.agency_name,
19   cust.customer_name,
20   cust.brand_name,
21   SUM(ROUND(((prom.promotion_metric_amount*prom.promotion_price*(1-prom.promotion_distinct_percent/100))*ag.agency_fee_percent/100)*(1+ag.agency_VAT_percent,
22   SUM(ROUND(((prom.promotion_metric_amount*prom.promotion_price*(1-prom.promotion_distinct_percent/100))*ag.agency_fee_percent/100),2)) as NET_Revenue,
23   SUM(ROUND((prom.employee_salary_project*(1+ag.agency_VAT_percent/100),2)) as GROSS_Cost,
24   SUM(prom.employee_salary_project) as NET_Cost,
25   SUM(ROUND(((prom.promotion_metric_amount*prom.promotion_price*(1-prom.promotion_distinct_percent/100))*ag.agency_fee_percent/100)*(1+ag.agency_VAT_percent,
26   SUM(ROUND(((prom.promotion_metric_amount*prom.promotion_price*(1-prom.promotion_distinct_percent/100))*ag.agency_fee_percent/100)-prom.employee_salary,
27   ROUND(SUM(ROUND(((prom.promotion_metric_amount*prom.promotion_price*(1-prom.promotion_distinct_percent/100))*ag.agency_fee_percent/100)*(1+ag.agency_VAT_
28 )FROM DW_DATA.FCT_business fct_b
29 left join DW_DATA.DIM_agency ag on fct_b.agency_ID = ag.agency_ID
30 left join DW_DATA.DIM_promotion prom on fct_b.promotion_ID = prom.promotion_ID
31 left join DW_DATA.DIM_customer cust on fct_b.customer_ID = cust.customer_ID
32 GROUP BY TRUNC(fct_b.TIME_ID, 'MM'), ROLLUP (ag.agency_name, cust.customer_name, cust.brand_name)
33 HAVING TRUNC(fct_b.TIME_ID, 'MM') IS NOT NULL
34 and ag.agency_name IS NOT NULL
35 order by TRUNC(fct_b.TIME_ID, 'MM'), ag.agency_name, cust.customer_name, cust.brand_name;
36

```

Script Output | Query Result x | Task completed in 0.045 seconds

Session altered.

View V\_SAL\_BUDGETS\_CUSTOMER\_BRAND created.

SQL Worksheet | History

Worksheet | Query Builder

```

37: alter session set current_schema=SAL_CL;
38: SELECT * FROM v_sal_budgets_customer_brand;
39:

```

Script Output | Query Result | All Rows Fetched: 35 in 1.281 seconds

DATE_MONTH	AGENCY_NAME	CUSTOMER_NAME	BRAND_NAME	GROSS_REVENUE	NET_REVENUE	GROSS_COST	NET_COST	GROSS_PROFIT	NET_PROFIT	MARGIN_PERCENT
1 01-JAN-22	Starcom	Samsung Electronics	SAMSUNG	52553577.26	44735597.04	12551028.06	10710691	40002549.97	34024902.32	76.12
2 01-JAN-22	Starcom	Samsung Electronics	(null)	52553577.26	44735597.04	12551028.06	10710691	40002549.97	34024902.32	76.12
3 01-JAN-22	Starcom	Visa International ...VISA	(null)	17493193.41	14893055.68	4189317.67	3575764	13303876.11	11317290.47	76.05
4 01-JAN-22	Starcom	Visa International ...VISA	(null)	17493193.41	14893055.68	4189317.67	3575764	13303876.11	11317290.47	76.05
5 01-JAN-22	Starcom	(null)	(null)	70046770.67	59628652.72	16740345.73	14286455	53306426.07	45342192.79	76.1
6 01-FEB-22	Starcom	Samsung Electronics	SAMSUNG	47354477.71	40308001.53	11351171.22	9686893	36003307.43	30621105.23	76.03
7 01-FEB-22	Starcom	Samsung Electronics	(null)	47354477.71	40308001.53	11351171.22	9686893	36003307.43	30621105.23	76.03
8 01-FEB-22	Starcom	Visa International ...VISA	(null)	15750257.33	13412401.91	3788668.37	3232524	11961589.13	10179876.96	75.95
9 01-FEB-22	Starcom	Visa International ...VISA	(null)	15750257.33	13412401.91	3788668.37	3232524	11961589.13	10179876.96	75.95
10 01-FEB-22	Starcom	(null)	(null)	63104735.04	53720403.44	15139839.59	12919417	47964896.56	40800982.19	76.01
11 01-MAR-22	Starcom	Samsung Electronics	SAMSUNG	52381394.49	44591213.24	12595838.74	10750046	39785556.88	33841163.77	75.95
12 01-MAR-22	Starcom	Samsung Electronics	(null)	52381394.49	44591213.24	12595838.74	10750046	39785556.88	33841163.77	75.95
13 01-MAR-22	Starcom	Visa International ...VISA	(null)	17560662.94	14950319.3	4187048.81	3574006	13373614.58	11376312.22	76.16
14 01-MAR-22	Starcom	Visa International ...VISA	(null)	17560662.94	14950319.3	4187048.81	3574006	13373614.58	11376312.22	76.16
15 01-MAR-22	Starcom	(null)	(null)	69942057.43	59541532.54	16782887.55	14324052	53159171.46	45217475.99	76
16 01-APR-22	Starcom	Samsung Electronics	SAMSUNG	50823746.84	43255935.83	12153592.29	10371890	38670155.48	32884042.23	76.09
17 01-APR-22	Starcom	Samsung Electronics	(null)	50823746.84	43255935.83	12153592.29	10371890	38670155.48	32884042.23	76.09
18 01-APR-22	Starcom	Visa International ...VISA	(null)	16876287.41	14364107.76	4043916.65	3452023	12832370.78	10912083.86	76.04
19 01-APR-22	Starcom	Visa International ...VISA	(null)	16876287.41	14364107.76	4043916.65	3452023	12832370.78	10912083.86	76.04
20 01-APR-22	Starcom	(null)	(null)	67700034.25	57620043.59	16197508.94	13823913	51502526.26	43796126.09	76.07
21 01-MAY-22	Starcom	Samsung Electronics	SAMSUNG	52610648.47	44784133.06	12582709.79	10741822	40027939.9	34042307.18	76.08
22 01-MAY-22	Starcom	Samsung Electronics	(null)	52610648.47	44784133.06	12582709.79	10741822	40027939.9	34042307.18	76.08
23 01-MAY-22	Starcom	Visa International ...VISA	(null)	17429900.83	14838126.99	4185818.58	3571925	13244082.89	11266200.56	75.98

- v\_sal\_budgets\_brand\_promotion

```

4: alter session set current_schema=DW_DATA;
5: GRANT SELECT ON DW_DATA.FCT_business TO SAL_CL;
6: alter session set current_schema=DW_DATA;
7: GRANT SELECT ON DW_DATA.DIM_agency TO SAL_CL;
8: alter session set current_schema=DW_DATA;
9: GRANT SELECT ON DW_DATA.DIM_promotion TO SAL_CL;
10: alter session set current_schema=DW_DATA;
11: GRANT SELECT ON DW_DATA.DIM_customer TO SAL_CL;
12:

```

Session altered.

Grant succeeded.

Session altered.

Grant succeeded.

Session altered.

Grant succeeded.

SQL Worksheet | History

Worksheet | Query Builder

```

13: alter session set current_schema=SAL_CL;
14:
15: CREATE OR REPLACE VIEW v_sal_budgets_brand_promotion
16: AS SELECT
17:   TRUNC(fct_b.TIME_ID, 'MM') as date_month,
18:   cust.customer_name,
19:   cust.brand_name,
20:   prom.promotion_media_type,
21:   SUM(ROUND(((prom.promotion_metric_amount*prom.promotion_price*(1-prom.promotion_distinct_percent/100))*ag.agency_fee_percent/100)*(1+ag.agency_VAT_percent,
22:   SUM(ROUND(((prom.promotion_metric_amount*prom.promotion_price*(1-prom.promotion_distinct_percent/100))*ag.agency_fee_percent/100),2)) as NET_Revenue,
23:   SUM(ROUND(prom.employee_salary_project*(1+ag.agency_VAT_percent/100),2)) as GROSS_Cost,
24:   SUM(prom.employee_salary_project) as NET_Cost,
25:   SUM(ROUND((((prom.promotion_metric_amount*prom.promotion_price*(1-prom.promotion_distinct_percent/100))*ag.agency_fee_percent/100)*(1+ag.agency_VAT_percent,
26:   SUM(ROUND((((prom.promotion_metric_amount*prom.promotion_price*(1-prom.promotion_distinct_percent/100))*ag.agency_fee_percent/100)-prom.employee_salary,
27:   ROUND(SUM((ROUND(((prom.promotion_metric_amount*prom.promotion_price*(1-prom.promotion_distinct_percent/100))*ag.agency_fee_percent/100)*(1+ag.agency_VAT_percent,
28: FROM DW_DATA.FCT_business fct_b
29: left join DW_DATA.DIM_agency ag on fct_b.agency_ID = ag.agency_ID
30: left join DW_DATA.DIM_promotion prom on fct_b.promotion_ID = prom.promotion_ID
31: left join DW_DATA.DIM_customer cust on fct_b.customer_ID = cust.customer_ID
32: GROUP BY TRUNC(fct_b.TIME_ID, 'MM'), ROLLUP (cust.customer_name, cust.brand_name,prom.promotion_media_type)
33: HAVING TRUNC(fct_b.TIME_ID, 'MM') IS NOT NULL
34: order by TRUNC(fct_b.TIME_ID, 'MM'), cust.customer_name, cust.brand_name,prom.promotion_media_type;
35:

```

Session altered.

View V\_SAL\_BUDGETS\_BRAND\_PROMOTION created.

SQL Worksheet History

1.02999997 seconds

Worksheet Query Builder

```

35 | alter session set current_schema=SAL_CL;
36 | SELECT * FROM v_sal_budgets_brand_promotion;
37 |
38 |

```

Script Output | Query Result | Fetched 50 rows in 0.885 seconds

DATE_MONTH	CUSTOMER_NAME	BRAND_NAME	PROMOTION_MEDIA_TYPE	GROSS_REVENUE	NET_REVENUE	GROSS_COST	NET_COST	GROSS_PROFIT	NET_PROFIT	MARGIN_PERCENT
1 01-JAN-22	Samsung Electronics	SAMSUNG	OOH	7525615.2	6407143.1	1788792.18	1526617	5736822.98	4880525.58	76.23
2 01-JAN-22	Samsung Electronics	SAMSUNG	IV	7461399.43	6353431.32	1801945.49	1537325	5659453.99	4816105.81	75.85
3 01-JAN-22	Samsung Electronics	SAMSUNG	design	7562196.92	6440957.32	1780881.78	1519656	5781315.24	4921300.81	76.45
4 01-JAN-22	Samsung Electronics	SAMSUNG	digital	7464536.97	6350401.76	1808945.6	1544987	5655591.83	4805414.25	75.77
5 01-JAN-22	Samsung Electronics	SAMSUNG	press	7345701.64	6253298.14	1790200.08	1527649	5555501.43	4725648.52	75.63
6 01-JAN-22	Samsung Electronics	SAMSUNG	production	7692866.68	6541351.1	1787128.51	1524469	5905738.56	5016881.53	76.77
7 01-JAN-22	Samsung Electronics	SAMSUNG	radio	7501260.42	6389014.3	1793134.42	1529988	5708125.94	4859025.82	76.1
8 01-JAN-22	Samsung Electronics	SAMSUNG	(null)	52553577.26	44735597.04	12551028.06	10710691	4002549.97	34024902.32	76.12
9 01-JAN-22	Samsung Electronics	(null)	(null)	52553577.26	44735597.04	12551028.06	10710691	4002549.97	34024902.32	76.12
10 01-JAN-22	Visa International ...	VISA	OOH	2478543.57	2108978.24	597828.06	510378	1880715.54	1596600.05	75.08
11 01-JAN-22	Visa International ...	VISA	IV	2492309.11	2121202.81	607222.65	518101	1885086.51	1603101.68	75.64
12 01-JAN-22	Visa International ...	VISA	design	2506208.14	2134686.06	586995.55	501253	1919212.68	1633432.84	76.58
13 01-JAN-22	Visa International ...	VISA	digital	2587279.4	2202489.47	602610.93	514325	1984668.46	1688164.34	76.71
14 01-JAN-22	Visa International ...	VISA	press	2503744.61	2133478.57	603505.01	515217	1900239.67	1618261.32	75.9
15 01-JAN-22	Visa International ...	VISA	production	2434144.93	2074015.27	599394.31	511831	1834750.73	1562184.17	75.38
16 01-JAN-22	Visa International ...	VISA	radio	2490963.65	2118205.26	591761.16	504659	1899202.51	1613546.07	76.24
17 01-JAN-22	Visa International ...	VISA	(null)	17493193.41	14893055.68	4189317.67	3575764	13303876.1	11317290.47	76.05
18 01-JAN-22	Visa International ...	(null)	(null)	17493193.41	14893055.68	4189317.67	3575764	13303876.1	11317290.47	76.05
19 01-JAN-22	(null)	(null)	(null)	70046770.67	59628652.72	16740345.73	14286455	53306426.07	45342192.79	76.1
20 01-FEB-22	Samsung Electronics	SAMSUNG	OOH	6731752.82	5730438.36	1624150.1	1385500	5107602.99	4344937.81	75.87
21 01-FEB-22	Samsung Electronics	SAMSUNG	IV	6735013.63	5732901.65	1623972.24	1385971	5111041.6	4346930.33	75.89
22 01-FEB-22	Samsung Electronics	SAMSUNG	design	6724411.37	5723854.77	1628800.19	1390646	5095611.09	4333208.43	75.78
23 01-FEB-22	Samsung Electronics	SAMSUNG	digital	6816617.8	5798686.44	1616838	1379417	5199779.79	4419268.94	76.28

- v\_sal\_salary\_by\_employee

```

4 | alter session set current_schema=DW_DATA;
5 | GRANT SELECT ON DW_DATA.FCT_business TO SAL_CL;
6 | alter session set current_schema=DW_DATA;
7 | GRANT SELECT ON DW_DATA.DIM_agency TO SAL_CL;
8 | alter session set current_schema=DW_DATA;
9 | GRANT SELECT ON DW_DATA.DIM_promotion TO SAL_CL;
10 | alter session set current_schema=DW_DATA;
11 | GRANT SELECT ON DW_DATA.DIM_employee TO SAL_CL;

```

Grant succeeded.

Session altered.

Grant succeeded.

Session altered.

Grant succeeded.

Session altered.

Grant succeeded.

```

13 | alter session set current_schema=SAL_CL;
14 |
15 | CREATE OR REPLACE VIEW v_sal_salary_by_employee
16 | AS SELECT
17 |   TRUNC (fct_b.TIME_ID, 'MM') AS MONTH,
18 |   emp.employee_first_name||' '||emp.employee_last_name AS employee,
19 |   SUM (ROUND(prom.employee_salary_project*(1+ ag.agency_VAT_percent/100),2)) AS employee_salary_project_GROSS,
20 |   SUM (prom.employee_salary_project) AS employee_salary_project_NET
21 | FROM DW_DATA.FCT_business fct_b
22 | left join DW_DATA.DIM_agency ag on fct_b.agency_ID = ag.agency_ID
23 | left join DW_DATA.DIM_promotion prom on fct_b.promotion_ID = prom.promotion_ID
24 | left join DW_DATA.DIM_employee emp on fct_b.employee_ID = emp.employee_ID
25 | GROUP BY CUBE (TRUNC (fct_b.TIME_ID, 'MM'), emp.employee_first_name, emp.employee_last_name)
26 | HAVING TRUNC (fct_b.TIME_ID, 'MM') IS NOT NULL
27 |   and emp.employee_first_name IS NOT NULL
28 |   and emp.employee_last_name IS NOT NULL
29 | order by TRUNC (fct_b.TIME_ID, 'MM'), employee;

```

Session altered.

View V\_SAL\_SALARY\_BY\_EMPLOYEE created.

```

31 alter session set current_schema=SAL_CL;
32 SELECT * FROM v_sal_salary_by_employee;
33

```

Script Output x | Fetched 150 rows in 0.326 seconds

MONTH	EMPLOYEE	EMPLOYEE_SALARY_PROJECT_GROSS	EMPLOYEE_SALARY_PROJECT_NET
88	01-JAN-22 Sam Hasse	172905.77	147368
89	01-JAN-22 Sam Joukowski	171098.56	146468
90	01-JAN-22 Sam Kendall	175059.16	148724
91	01-JAN-22 Steph Abramson	166749.11	142732
92	01-JAN-22 Steph Barnes	169571.77	144784
93	01-JAN-22 Steph Campbell	161357.15	138172
94	01-JAN-22 Steph Delon	174998.07	149501
95	01-JAN-22 Steph Enderson	171887.49	146882
96	01-JAN-22 Steph Foster	156521.2	133577
97	01-JAN-22 Steph Gauss	168882.15	144216
98	01-JAN-22 Steph Hasse	163678.78	139772
99	01-JAN-22 Steph Joukowski	167480.49	142787
100	01-JAN-22 Steph Kendall	164378.18	140204
101	01-FEB-22 Alex Abramson	142799.67	121228
102	01-FEB-22 Alex Barnes	151117.32	129039
103	01-FEB-22 Alex Campbell	139516.26	118963
104	01-FEB-22 Alex Delon	142415.69	121183
105	01-FEB-22 Alex Enderson	152528.89	131204
106	01-FEB-22 Alex Foster	146783.73	125351
107	01-FEB-22 Alex Gauss	143798.16	123070
108	01-FEB-22 Alex Hasse	153923.57	131601
109	01-FEB-22 Alex Joukowski	143664.09	122244
110	01-FEB-22 Alex Kendall	155638.71	132859

- `v_sal_quantity_agency_employee`

```

3 | alter session set current_schema=DW_DATA;
4 | GRANT SELECT ON DW_DATA.FCT_business TO SAL_CL;
5 | alter session set current_schema=DW_DATA;
6 | GRANT SELECT ON DW_DATA.DIM_agency TO SAL_CL;
7 | alter session set current_schema=DW_DATA;
8 | GRANT SELECT ON DW_DATA.DIM_employee TO SAL_CL;
9 |
10

```

Script Output x | Task completed in 0.098 seconds

Session altered.

Grant succeeded.

Session altered.

Grant succeeded.

Session altered.

Grant succeeded.

```

11 | alter session set current_schema=SAL_CL;
12
13 CREATE OR REPLACE VIEW v_sal_quantity_agency_employee
14 AS SELECT
15   fct_b.TIME_ID,
16   ag.agency_name,
17   ag.agency_city,
18   ag.agency_country,
19   COUNT(DISTINCT (emp.employee_first_name || ' ' || emp.employee_last_name)) AS number_of_employees
20 FROM DW_DATA.FCT_business fct_b
21 LEFT JOIN DW_DATA.DIM_agency ag ON fct_b.agency_ID = ag.agency_ID
22 LEFT JOIN DW_DATA.DIM_employee emp ON fct_b.employee_ID = emp.employee_ID
23 GROUP BY CUBE (fct_b.TIME_ID, ag.agency_name, ag.agency_city, ag.agency_country)
24 HAVING fct_b.TIME_ID IS NOT NULL
25 AND ag.agency_name IS NOT NULL
26 AND ag.agency_city IS NOT NULL
27 AND ag.agency_country IS NOT NULL
28 ORDER BY fct_b.TIME_ID, ag.agency_name, ag.agency_city, ag.agency_country;
29

```

Script Output x | Task completed in 0.045 seconds

Grant succeeded.

Session altered.

View V\_SAL\_QUANTITY\_AGENCY\_EMPLOYEE created.

```

30 | alter session set current_schema=SAL_CL;
31 | SELECT * FROM v_sal_quantity_agency_employee;

```

Script Output | Query Result | SQL | Fetched 50 rows in 0.315 seconds

TIME_ID	AGENCY_NAME	AGENCY_CITY	AGENCY_COUNTRY	NUMBER_OF_EMPLOYEES
1 01-JAN-22	Starcom	Barcelona	Spain	69
2 01-JAN-22	Starcom	Berlin	Germany	67
3 01-JAN-22	Starcom	Cairo	Egypt	73
4 01-JAN-22	Starcom	Dubai	UAE	62
5 01-JAN-22	Starcom	Hong Kong	China	67
6 01-JAN-22	Starcom	London	United Kingdom	66
7 01-JAN-22	Starcom	Milan	Italy	68
8 01-JAN-22	Starcom	Moscow	Russia	65
9 01-JAN-22	Starcom	New York	United States	67
10 01-JAN-22	Starcom	Nicosia	Cyprus	68
11 01-JAN-22	Starcom	Paris	France	73
12 01-JAN-22	Starcom	Shanghai	China	67
13 01-JAN-22	Starcom	Sydney	Australia	71
14 01-JAN-22	Starcom	Warsaw	Poland	69
15 01-JAN-22	Starcom	Zurich	Switzerland	71
16 02-JAN-22	Starcom	Barcelona	Spain	65
17 02-JAN-22	Starcom	Berlin	Germany	69
18 02-JAN-22	Starcom	Cairo	Egypt	68
19 02-JAN-22	Starcom	Dubai	UAE	65
20 02-JAN-22	Starcom	Hong Kong	China	69
21 02-JAN-22	Starcom	London	United Kingdom	75
22 02-JAN-22	Starcom	Milan	Italy	67

- v\_sal\_quantity\_agency\_customer\_brand

```

4 | alter session set current_schema=DW_DATA;
5 | GRANT SELECT ON DW_DATA.FCT_business TO SAL_CL;
6 | alter session set current_schema=DW_DATA;
7 | GRANT SELECT ON DW_DATA.DIM_agency TO SAL_CL;
8 | alter session set current_schema=DW_DATA;
9 | GRANT SELECT ON DW_DATA.DIM_customer TO SAL_CL;
10 |

```

Script Output | Task completed in 0.082 seconds

Session altered.

Grant succeeded.

Session altered.

Grant succeeded.

Session altered.

Grant succeeded.

```

11 | alter session set current_schema=SAL_CL;
12 |
13 | CREATE OR REPLACE VIEW v_sal_quantity_agency_customer_brand
14 | AS SELECT
15 |   TRUNC(fct_b.TIME_ID, 'MM') as date_month,
16 |   ag.agency_name,
17 |   ag.agency_city,
18 |   ag.agency_country,
19 |   COUNT(distinct cust.customer_name) as number_of_customers,
20 |   COUNT(distinct cust.brand_name) as number_of_brands
21 | FROM DW_DATA.FCT_business fct_b
22 | left join DW_DATA.DIM_agency ag on fct_b.agency_ID = ag.agency_ID
23 | left join DW_DATA.DIM_customer cust on fct_b.customer_ID = cust.customer_ID
24 | GROUP BY CUBE (TRUNC (fct_b.TIME_ID, 'MM'), ag.agency_name, ag.agency_city, ag.agency_country)
25 | HAVING TRUNC (fct_b.TIME_ID, 'MM') IS NOT NULL
26 |   and ag.agency_name IS NOT NULL
27 |   and ag.agency_city IS NOT NULL
28 |   and ag.agency_country IS NOT NULL
29 | order by TRUNC (fct_b.TIME_ID, 'MM'), ag.agency_name, ag.agency_city, ag.agency_country;
30 |

```

Script Output | Task completed in 0.049 seconds

Session altered.

View V\_SAL\_QUANTITY\_AGENCY\_CUSTOMER\_BRAND created.

```

30
31 alter session set current_schema=SAL_CL;
32 SELECT * FROM v_sal_quantity_agency_customer_brand;
33

```

Script Output x | Query Result x | Query Result 1 x

SQL | Fetched 50 rows in 0.253 seconds

DATE_MONTH	AGENCY_NAME	AGENCY_CITY	AGENCY_COUNTRY	NUMBER_OF_CUSTOMERS	NUMBER_OF_BRANDS
1 01-JAN-22	Starcom	Barcelona	Spain	2	2
2 01-JAN-22	Starcom	Berlin	Germany	2	2
3 01-JAN-22	Starcom	Cairo	Egypt	2	2
4 01-JAN-22	Starcom	Dubai	UAE	2	2
5 01-JAN-22	Starcom	Hong Kong	China	2	2
6 01-JAN-22	Starcom	London	United Kingdom	2	2
7 01-JAN-22	Starcom	Milan	Italy	2	2
8 01-JAN-22	Starcom	Moscow	Russia	2	2
9 01-JAN-22	Starcom	New York	United States	2	2
10 01-JAN-22	Starcom	Nicosia	Cyprus	2	2
11 01-JAN-22	Starcom	Paris	France	2	2
12 01-JAN-22	Starcom	Shanghai	China	2	2
13 01-JAN-22	Starcom	Sydney	Australia	2	2
14 01-JAN-22	Starcom	Warsaw	Poland	2	2
15 01-JAN-22	Starcom	Zurich	Switzerland	2	2
16 01-FEB-22	Starcom	Barcelona	Spain	2	2
17 01-FEB-22	Starcom	Berlin	Germany	2	2
18 01-FEB-22	Starcom	Cairo	Egypt	2	2
19 01-FEB-22	Starcom	Dubai	UAE	2	2
20 01-FEB-22	Starcom	Hong Kong	China	2	2
21 01-FEB-22	Starcom	London	United Kingdom	2	2

- v\_sal\_quantity\_agency\_promotion

```

4 alter session set current_schema=DW_DATA;
5 GRANT SELECT ON DW_DATA.FCT_business TO SAL_CL;
6 alter session set current_schema=DW_DATA;
7 GRANT SELECT ON DW_DATA.DIM_agency TO SAL_CL;
8 alter session set current_schema=DW_DATA;
9 GRANT SELECT ON DW_DATA.DIM_customer TO SAL_CL;
10 alter session set current_schema=DW_DATA;
11 GRANT SELECT ON DW_DATA.DIM_promotion TO SAL_CL;
12

```

Script Output x | Task completed in 0.118 seconds

Session altered.

Grant succeeded.

Session altered.

Grant succeeded.

Session altered.

Grant succeeded.

```

13 alter session set current_schema=SAL_CL;
14
15 CREATE OR REPLACE VIEW v_sal_quantity_agency_promotion
16 AS SELECT
17   TRUNC(fct_b.TIME_ID, 'MM') as date_month,
18   cust.brand_name,
19   ag.agency_city,
20   prom.promotion_media_type,
21   COUNT(prom.promotion_ID) as number_of_promotions
22 FROM DW_DATA.FCT_business fct_b
23 left join DW_DATA.DIM_agency ag on fct_b.agency_ID = ag.agency_ID
24 left join DW_DATA.DIM_customer cust on fct_b.customer_ID = cust.customer_ID
25 left join DW_DATA.DIM_promotion prom on fct_b.promotion_ID = prom.promotion_ID
26 GROUP BY CUBE (TRUNC(fct_b.TIME_ID, 'MM'), cust.brand_name, ag.agency_city, prom.promotion_media_type)
27 HAVING TRUNC(fct_b.TIME_ID, 'MM') IS NOT NULL
28 and cust.brand_name IS NOT NULL
29 and ag.agency_city IS NOT NULL
30 and prom.promotion_media_type IS NOT NULL
31 order by TRUNC(fct_b.TIME_ID, 'MM'), cust.brand_name, ag.agency_city, prom.promotion_media_type;
32

```

Script Output x | Task completed in 0.049 seconds

Grant succeeded.

Session altered.

View V\_SAL\_QUANTITY\_AGENCY\_PROMOTION created.

```

32 |
33 | alter session set current_schema=SAL_CL;
34 | SELECT * FROM v_sal_quantity_agency_promotion;
35 |

```

Script Output x | Query Result x

SQL | Fetched 50 rows in 0.218 seconds

DATE_MONTH	BRAND_NAME	AGENCY_CITY	PROMOTION_MEDIA_TYPE	NUMBER_OF_PROMOTIONS
1 01-JAN-22	SAMSUNG	Barcelona	OOH	372
2 01-JAN-22	SAMSUNG	Barcelona	TV	372
3 01-JAN-22	SAMSUNG	Barcelona	design	372
4 01-JAN-22	SAMSUNG	Barcelona	digital	372
5 01-JAN-22	SAMSUNG	Barcelona	press	372
6 01-JAN-22	SAMSUNG	Barcelona	production	372
7 01-JAN-22	SAMSUNG	Barcelona	radio	372
8 01-JAN-22	SAMSUNG	Berlin	OOH	372
9 01-JAN-22	SAMSUNG	Berlin	TV	372
10 01-JAN-22	SAMSUNG	Berlin	design	372
11 01-JAN-22	SAMSUNG	Berlin	digital	372
12 01-JAN-22	SAMSUNG	Berlin	press	372
13 01-JAN-22	SAMSUNG	Berlin	production	372
14 01-JAN-22	SAMSUNG	Berlin	radio	372
15 01-JAN-22	SAMSUNG	Cairo	OOH	372
16 01-JAN-22	SAMSUNG	Cairo	TV	372
17 01-JAN-22	SAMSUNG	Cairo	design	372
18 01-JAN-22	SAMSUNG	Cairo	digital	372

Create a new table sal\_dw\_cl\_t\_transaction to load the necessary data for the STAR layer from FCT\_\* and DIM\_\* of DW layer into the SAL\_DW\_CL layer.

```

4 | alter session set current_schema=DW_DATA;
5 | GRANT SELECT ON DW_DATA.FCT_business TO sal_dw_cl;
6 | GRANT SELECT ON DW_DATA.DIM_customer TO sal_dw_cl;
7 | GRANT SELECT ON DW_DATA.DIM_employee TO sal_dw_cl;
8 | GRANT SELECT ON DW_DATA.DIM_agency TO sal_dw_cl;
9 | GRANT SELECT ON DW_DATA.DIM_promotion TO sal_dw_cl;
10 |

```

Script Output x

Session altered.

Grant succeeded.

Grant succeeded.

Grant succeeded.

Grant succeeded.

Grant succeeded.

Grant succeeded.

sal\_dw\_cl\_t\_transaction.sql

SQL Worksheet | History

Worksheet | Query Builder

```

11 | alter session set current_schema=sal_dw_cl;
12 |
13 | Create table sal_dw_cl_t_transaction (
14 |     time_ID           DATE,
15 |
16 |     customer_name    VARCHAR2(50) NOT NULL,
17 |     brand_name       VARCHAR2(50) NOT NULL,
18 |
19 |     agency_name      VARCHAR2(50) NOT NULL,
20 |     department_name  VARCHAR2(50) NOT NULL,
21 |     agency_city      VARCHAR2(30) NOT NULL,
22 |     agency_country   VARCHAR2(30) NOT NULL,
23 |     agency_Fee_percent DECIMAL (10,2),
24 |     agency_VAT_percent DECIMAL (10,2),
25 |
26 |     employee_passport_ID  VARCHAR2(14) NOT NULL,
27 |     employee_first_name  VARCHAR2(40) NOT NULL,
28 |     employee_last_name   VARCHAR2(50) NOT NULL,
29 |     employee_position    VARCHAR2(50) NOT NULL,
30 |     employee_email       VARCHAR2(50) NOT NULL,
31 |     employee_date_of_hire DATE NOT NULL,
32 |     employee_date_end_of_contract DATE NOT NULL,
33 |     current_flg          VARCHAR2(1) NOT NULL,
34 |
35 |     promotion_name      VARCHAR2(50) NOT NULL,

```

Script Output x

Task completed in 1.238 seconds

Session altered.

Table SAL\_DW\_CL\_T\_TRANSACTION created.

```

53 |
54 :select * from sal_dw_cl.sal_dw_cl_t_transaction;
55 |

```

Script Output | Query Result | All Rows Fetched: 0 in 0.026 seconds

TIME_ID	CUSTOMER_ID	BRAND_NAME	AGENCY_CODE	DEPARTMENT_CODE	AGENCY_TYPE	AGENCY_COUNTRY	AGENCY_VAT_PERCENT	EMPLOYEE_ID	EMPLOYEE_FIRST_NAME	EMPLOYEE_LAST_NAME	EMPLOYEE_POSITION	EMPLOYEE_PASSPORT_ID

Let's create packages to load data on SAL\_DW\_CL layer for table sal\_dw\_cl\_t\_transaction.

Welcome Page | VeraDB | sal\_dw\_cl\_t\_transaction.sql | pkg\_etl\_sal\_dw\_cl\_transaction-def.sql | SQL Worksheet | History

Worksheet | Query Builder

```

1 alter session set current_schema = SAL_DW_CL;
2
3 CREATE OR REPLACE PACKAGE pkg_etl_sal_dw_cl_transaction
4 AS
5   PROCEDURE load_sal_dw_cl_transaction;
6 END pkg_etl_sal_dw_cl_transaction;
7 /

```

Script Output | Task completed in 0.164 seconds

Session altered.

Package PKG\_ETL\_SAL\_DW\_CL\_TRANSACTION compiled

Welcome Page | VeraDB | sal\_dw\_cl\_t\_transaction.sql | pkg\_etl\_sal\_dw\_cl\_transaction-def.sql | pkg\_etl\_sal\_dw\_cl\_transaction-impl.sql | SQL Worksheet | History

Worksheet | Query Builder

```

1 alter session set current_schema=DW_DATA;
2 GRANT SELECT ON DW_DATA.FCT_business TO SAL_DW_CL;
3 GRANT SELECT ON DW_DATA.DIM_customer TO SAL_DW_CL;
4 GRANT SELECT ON DW_DATA.DIM_employee TO SAL_DW_CL;
5 GRANT SELECT ON DW_DATA.DIM_agency TO SAL_DW_CL;
6 GRANT SELECT ON DW_DATA.DIM_promotion TO SAL_DW_CL;
7

```

Script Output | Task completed in 0.31 seconds

Session altered.

Grant succeeded.

Grant succeeded.

Grant succeeded.

Grant succeeded.

Grant succeeded.

Welcome Page | VeraDB | sal\_dw\_cl\_t\_transaction.sql | pkg\_etl\_sal\_dw\_cl\_transaction-def.sql | pkg\_etl\_sal\_dw\_cl\_transaction-impl.sql | SQL Worksheet | History

Worksheet | Query Builder

```

7
8 alter session set current_schema = SAL_DW_CL;
9
10 CREATE OR REPLACE PACKAGE body pkg_etl_sal_dw_cl_transaction
11 AS
12   PROCEDURE load_sal_dw_cl_transaction
13   AS
14     CURSOR cursor_sal_dw_cl_transaction
15     IS
16       SELECT DISTINCT fct_b.time_ID
17
18       ,cust.customer_name
19       ,cust.brand_name
20
21       ,ag.agency_name
22       ,ag.department_name
23       ,ag.agency_city
24       ,ag.agency_country
25       ,ag.agency_fee_percent
26       ,ag.agency_VAT_percent
27
28       ,emp.employee_passport_ID
29       ,emp.employee_first_name
30       ,emp.employee_last_name
31       ,emp.employee_position

```

Script Output | Task completed in 0.04 seconds

Session altered.

Package Body PKG\_ETL\_SAL\_DW\_CL\_TRANSACTION compiled

```

189 | alter session set current_schema = SAL_DW_CL;
190 | alter user SAL_DW_CL QUOTA UNLIMITED ON ts_dw_str_cls;
191 |
192 | EXEC pkg_etl.sal_dw_cl.transaction.load_sal_dw_cl_transaction;

```

Script Output X | Task completed in 18.011 seconds

Session altered.

User SAL\_DW\_CL altered.

PL/SQL procedure successfully completed.

Query Result x | Fetched 50 rows in 0.353 seconds

TIME_ID	CUSTOMER_NAME	BRAND_NAME	AGENCY_NAME	DEPARTMENT_NAME	AGENCY_CITY	AGENCY_COUNTRY	AGENCY_FEE_PERCENT	AGENCY_VAT_PERCENT
1	01-JAN-22 Samsung Electronics	SAMSUNG	Starcom	Media Planning and Buying Zurich	Zurich	Switzerland	2	
2	01-JAN-22 Visa International Service Association VISA	Starcom	Media Planning and Buying Nicosia	Nicosia	Cyprus	Cyprus	7	
3	01-JAN-22 Samsung Electronics	SAMSUNG	Starcom	Media Planning and Buying Moscow	Moscow	Russia	7	
4	01-JAN-22 Samsung Electronics	SAMSUNG	Starcom	Media Planning and Buying Zurich	Zurich	Switzerland	2	
5	01-JAN-22 Samsung Electronics	SAMSUNG	Starcom	Production	Shanghai	China	5	
6	01-JAN-22 Visa International Service Association VISA	Starcom	Media Planning and Buying Zurich	Zurich	Zurich	Switzerland	2	
7	01-JAN-22 Samsung Electronics	SAMSUNG	Starcom	Media Planning and Buying Nicosia	Nicosia	Cyprus	7	
8	01-JAN-22 Samsung Electronics	SAMSUNG	Starcom	Art and Visualization	Milan	Italy	2	
9	01-JAN-22 Samsung Electronics	SAMSUNG	Starcom	Out-of-Home Media	Paris	France	2	
10	01-JAN-22 Samsung Electronics	SAMSUNG	Starcom	Media Planning and Buying Nicosia	Nicosia	Cyprus	7	
11	01-JAN-22 Samsung Electronics	SAMSUNG	Starcom	Art and Visualization	Milan	Italy	2	
12	01-JAN-22 Visa International Service Association VISA	Starcom	Media Planning and Buying Sydney	Sydney	Australia	Australia	1	
13	01-JAN-22 Samsung Electronics	SAMSUNG	Starcom	Out-of-Home Media	Hong Kong	China	5	
14	01-JAN-22 Visa International Service Association VISA	Starcom	Media Planning and Buying Sydney	Sydney	Sydney	Australia	1	
15	01-JAN-22 Samsung Electronics	SAMSUNG	Starcom	Out-of-Home Media	Hong Kong	China	5	
16	01-JAN-22 Samsung Electronics	SAMSUNG	Starcom	Out-of-Home Media	Dubai	UAE	4	
17	01-JAN-22 Samsung Electronics	SAMSUNG	Starcom	Media Planning and Buying Zurich	Zurich	Switzerland	2	
18	01-JAN-22 Samsung Electronics	SAMSUNG	Starcom	Media Planning and Buying Nicosia	Nicosia	Cyprus	7	
19	01-JAN-22 Samsung Electronics	SAMSUNG	Starcom	Media Planning and Buying Zurich	Zurich	Switzerland	2	
20	01-JAN-22 Samsung Electronics	SAMSUNG	Starcom	Media Planning and Buying Moscow	Moscow	Russia	7	
21	01-JAN-22 Visa International Service Association VISA	Starcom	Production	Nicosia	Nicosia	Cyprus	7	
22	01-JAN-22 Samsung Electronics	SAMSUNG	Starcom	Production	Berlin	Germany	3	
23	01-JAN-22 Visa International Service Association VISA	Starcom	Out-of-Home Media	Warsaw	Warsaw	Poland	8	

Query Result x | All Rows Fetched: 1 in 0.03 seconds

COUNT(*)
1 336000

Create a new table sal\_cl\_t\_transaction to load the necessary data for the STAR layer from the sal\_dw\_cl\_t\_transaction table of SAL\_DW\_CL layer into the SAL\_CL layer.

SQL Worksheet | History | 0.023 seconds

Worksheet | Query Builder

```

1 --drop sequence SAL_CL.SQ_sal_cl_t_transaction;
2 alter session set current_schema = SAL_CL;
3 |
4 CREATE SEQUENCE SAL_CL.SQ_sal_cl_t_transaction
5   START WITH      1
6   INCREMENT BY    1
7   NOCACHE
8   NOCYCLE;

```

Script Output X | Task completed in 0.023 seconds

Session altered.

Sequence SAL\_CL.SQ\_SAL\_CL\_T\_TRANSACTION created.

The screenshot shows the Oracle SQL Developer interface. In the top tab bar, there are tabs for 'Welcome Page', 'VeraDB', 'sal\_d\_t\_transaction.sql', and 'sq\_sal\_d\_t\_transaction.sql'. The main area is a 'Worksheet' tab showing the following SQL code:

```

4 alter session set current_schema=sal_dw_cl;
5 GRANT SELECT ON sal_dw_cl.sal_dw_cl_t_transaction TO SAL_CL;
6
7 alter session set current_schema=SAL_CL;
8
9 Create table sal_cl_t_transaction (
10    transaction_ID          NUMBER(10),
11    time_ID                  DATE,
12    customer_name            VARCHAR2(50) NOT NULL,
13    brand_name                VARCHAR2(50) NOT NULL,
14    agency_name               VARCHAR2(50) NOT NULL,
15    department_name           VARCHAR2(50) NOT NULL,
16    agency_city               VARCHAR2(30) NOT NULL,
17    agency_country             VARCHAR2(30) NOT NULL,
18    agency_fee_percent        DECIMAL (10,2),
19    agency_VAT_percent        DECIMAL (10,2),
20
21
22
23

```

Below the code, the 'Script Output' window shows the results of the execution:

```

Session altered.

Grant succeeded.

Session altered.

Table SAL_CL_T_TRANSACTION created.

```

In the bottom tab bar, there is a 'Query Result' tab showing the structure of the table:

```

54 select * from sal_cl.sal_cl_t_transaction order by 1;

```

The results show the columns: TRANSACTION\_ID, TIME\_ID, CUSTOMER\_NAME, BRAND\_NAME, AGENCY\_NAME, DEPARTMENT\_NAME, AGENCY\_CITY, AGENCY\_COUNTRY, AGENCY\_FEE\_PERCENT, and AGENCY\_VAT\_PERCENT.

Let's create packages to load data on SAL\_CL layer for table sal\_cl\_t\_transaction.

The screenshot shows the Oracle SQL Developer interface. In the top tab bar, there are tabs for 'Welcome Page', 'VeraDB', 'sal\_d\_t\_transaction.sql', 'sq\_sal\_d\_t\_transaction.sql', and 'pkg\_etl\_sal\_d\_t\_transaction-def.sql'. The main area is a 'Worksheet' tab showing the following SQL code:

```

1 alter session set current_schema = SAL_CL;
2
3 CREATE OR REPLACE PACKAGE pkg_etl_sal_cl_t_transaction
4 AS
5     PROCEDURE load_sal_cl_t_transaction;
6 END pkg_etl_sal_cl_t_transaction;
7 /

```

Below the code, the 'Script Output' window shows the results of the execution:

```

Session altered.

Package PKG_ETL_SAL_CL_T_TRANSACTION compiled

```

**Second Screenshot:**

The screenshot shows the Oracle SQL Developer interface. In the top tab bar, there are tabs for 'Welcome Page', 'VeraDB', 'sal\_d\_t\_transaction.sql', 'sq\_sal\_d\_t\_transaction.sql', 'pkg\_etl\_sal\_d\_t\_transaction-def.sql', and 'pkg\_etl\_sal\_d\_t\_transaction-impl.sql'. The main area is a 'Worksheet' tab showing the following SQL code:

```

1 alter session set current_schema = SAL_DW_CL;
2 GRANT SELECT ON SAL_DW_CL.sal_dw_cl_t_transaction TO SAL_CL;
3

```

Below the code, the 'Script Output' window shows the results of the execution:

```

Session altered.

Grant succeeded.

```

SQL Worksheet History

```

4 alter session set current_schema = SAL_CL;
5
6 CREATE OR REPLACE PACKAGE body pkg_etl_sal_cl_t_transaction
7 AS
8 PROCEDURE load_sal_cl_t_transaction
9 AS
10 BEGIN
11 MERGE INTO SAL_CL.sal_cl_t_transaction A
12 USING ( SELECT
13 time_ID
14
15 ,customer_name
16 ,brand_name
17
18 ,agency_name
19 ,department_name
20 ,agency_city
21 ,agency_country
22 ,agency_Fee_percent
23 ,agency_VAT_percent
24
25 ,employee_passport_ID
26 ,employee_first_name
27 ,employee_last_name
28 ,employee_position
29 ,employee_email

```

Script Output X | Task completed in 0.334 seconds

Session altered.

Package Body PKG\_ETL\_SAL\_CL\_T\_TRANSACTION compiled

```

175 alter session set current_schema = SAL_CL;
176 alter user SAL_CL QUOTA UNLIMITED ON ts_sal_cl;
177
178 EXEC pkg_etl_sal_cl_t_transaction.load_sal_cl_t_transaction;

```

Script Output X | Query Result X | Task completed in 35.671 seconds

Session altered.

User SAL\_CL altered.

PL/SQL procedure successfully completed.

SQL Worksheet History

```

179 :SELECT * FROM SAL_CL.sal_cl_t_transaction order by 1;

```

Script Output X | Query Result X | SQL | Fetched 50 rows in 0.388 seconds

TRANSACTION_ID	TIME_ID	CUSTOMER_NAME	BRAND_NAME	AGENCY_NAME	DEPARTMENT_NAME	AGENCY_CITY	AGENCY_COUNTRY	AGENCY_FEE_PERCEN
1	1 27-MAR-22	Samsung Electronics	SAMSUNG	Starcom	Media Planning and Buying	Sydney	Australia	
2	2 16-MAR-22	Visa International Service Association	VISA	Starcom	Art and Visualization	Milan	Italy	
3	3 26-MAR-22	Samsung Electronics	SAMSUNG	Starcom	Media Planning and Buying	Sydney	Australia	
4	4 28-FEB-22	Samsung Electronics	SAMSUNG	Starcom	Art and Visualization	Milan	Italy	
5	5 03-FEB-22	Visa International Service Association	VISA	Starcom	Media Planning and Buying	Sydney	Australia	
6	6 14-MAR-22	Samsung Electronics	SAMSUNG	Starcom	Art and Visualization	Zurich	Switzerland	
7	7 16-MAR-22	Samsung Electronics	SAMSUNG	Starcom	Out-of-Home Media	Hong Kong	China	
8	8 19-FEB-22	Samsung Electronics	SAMSUNG	Starcom	Out-of-Home Media	Zurich	Switzerland	
9	9 26-JAN-22	Samsung Electronics	SAMSUNG	Starcom	Media Planning and Buying	Sydney	Australia	
10	10 26-FEB-22	Samsung Electronics	SAMSUNG	Starcom	Art and Visualization	Milan	Italy	
11	11 15-MAR-22	Samsung Electronics	SAMSUNG	Starcom	Production	Sydney	Australia	
12	12 12-JAN-22	Samsung Electronics	SAMSUNG	Starcom	Media Planning and Buying	Sydney	Australia	
13	13 07-JAN-22	Samsung Electronics	SAMSUNG	Starcom	Out-of-Home Media	Barcelona	Spain	
14	14 19-FEB-22	Visa International Service Association	VISA	Starcom	Art and Visualization	Zurich	Switzerland	
15	15 01-MAR-22	Visa International Service Association	VISA	Starcom	Out-of-Home Media	Dubai	UAE	
16	16 09-JAN-22	Samsung Electronics	SAMSUNG	Starcom	Out-of-Home Media	Barcelona	Spain	
17	17 25-JAN-22	Visa International Service Association	VISA	Starcom	Production	Hong Kong	China	
18	18 23-JAN-22	Visa International Service Association	VISA	Starcom	Production	Hong Kong	China	
19	19 09-FEB-22	Samsung Electronics	SAMSUNG	Starcom	Out-of-Home Media	Paris	France	
20	20 07-MAR-22	Visa International Service Association	VISA	Starcom	Out-of-Home Media	Zurich	Switzerland	
21	21 01-FEB-22	Visa International Service Association	VISA	Starcom	Out-of-Home Media	Zurich	Switzerland	
22	22 05-JAN-22	Samsung Electronics	SAMSUNG	Starcom	Media Planning and Buying	Sydney	Australia	
23	23 10-MAR-22	Visa International Service Association	VISA	Starcom	Out-of-Home Media	Barcelona	Spain	
24	24 26-MAR-22	Samsung Electronics	SAMSUNG	Starcom	Media Planning and Buying	Sydney	Australia	

```

144 :SELECT count(*) FROM SAL_CL.sal_cl_t_transaction order by 1;

```

Script Output X | Query Result X | SQL | All Rows Fetched: 1 in 0.025 seconds

COUNT(*)
1 336000

Let's give the privileges to use the views from the SAL\_CL layer by DATA MARTS on the STAR layer.

- DM\_FCT\_KPI

```
4 | alter session set current_schema = DW_DATA;
5 | GRANT DELETE,INSERT,UPDATE,SELECT on DW_DATA.FCT_BUSINESS TO DM_KPI;
6 | GRANT DELETE,INSERT,UPDATE,SELECT on DW_DATA.DIM_AGENCY TO DM_KPI;
7 | GRANT DELETE,INSERT,UPDATE,SELECT on DW_DATA.DIM_PROMOTION TO DM_KPI;
```

Session altered.

Grant succeeded.

Grant succeeded.

Grant succeeded.

```
9 | alter session set current_schema=DM_KPI;
10| SELECT * FROM SAL_CL.v_sal_KPI_daily;
```

Script Output x | Fetched 50 rows in 0.875 seconds

TIME_ID	AGENCY_NAME	AGENCY_CITY	AGENCY_COUNTRY	PROMOTION_NAME	PROMOTION_MEDIA_TYPE	PROMOTION_KPI	PROMOTION_METRIC_AMOUNT	PROMOTION_PRIC
1	01-JAN-22 Starcom	Paris	France	498 SAMSUNG_Smartphones_digital	digital	CPA	72	15
2	01-JAN-22 Starcom	Barcelona	Spain	506 SAMSUNG_Smartphones_digital	digital	CPL	59	97
3	01-JAN-22 Starcom	Paris	France	513 SAMSUNG_Headphones_digital	digital	CPL	60	44
4	01-JAN-22 Starcom	London	United Kingdom	555 SAMSUNG_Refrigerators_radio	radio	CPL	96	96
5	01-JAN-22 Starcom	Sydney	Australia	602 SAMSUNG_Diswashers_radio	radio	CPA	18	96
6	01-JAN-22 Starcom	Paris	France	603 SAMSUNG_Diswashers_radio	radio	CPA	31	22
7	01-JAN-22 Starcom	Warsaw	Poland	640 SAMSUNG_Vacuum Cleaners_radio	radio	CPA	41	72
8	01-JAN-22 Starcom	New York	United States	646 SAMSUNG_Smart watches_radio	radio	CPL	57	66
9	01-JAN-22 Starcom	Cairo	Egypt	654 SAMSUNG_Smart watches_radio	radio	CPA	32	75
10	01-JAN-22 Starcom	Paris	France	693 SAMSUNG_Headphones_radio	radio	CPL	78	81
11	01-JAN-22 Starcom	Milan	Italy	747 SAMSUNG_Ovens_OOH	OOH	CPA	16	34
12	01-JAN-22 Starcom	Nicosia	Cyprus	755 SAMSUNG_Cooking ovens_OOH	OOH	CPA	82	35
13	01-JAN-22 Starcom	Moscow	Russia	779 SAMSUNG_Washing machines_OOH	OOH	CPA	19	74
14	01-JAN-22 Starcom	Nicosia	Cyprus	785 SAMSUNG_Diswashers_OOH	OOH	CPL	65	36
15	01-JAN-22 Starcom	Berlin	Germany	832 SAMSUNG_Smart watches_OOH	OOH	CPL	30	60
16	01-JAN-22 Starcom	Hong Kong	China	846 SAMSUNG_TVs_OOH	OOH	CPA	33	35
17	01-JAN-22 Starcom	Sydney	Australia	1187 SAMSUNG_Smart watches_design	design	CPA	58	51
18	01-JAN-22 Starcom	Paris	France	1203 SAMSUNG_TVs_design	design	CPA	10	46
19	01-JAN-22 Starcom	Berlin	Germany	1237 SAMSUNG_Headphones_design	design	CPA	62	43
20	01-JAN-22 Starcom	Hong Kong	China	1266 VISA_Sponsorship_TV	TV	CPA	82	87
21	01-JAN-22 Starcom	Shanghai	China	1283 VISA_Sponsorship_press	press	CPL	36	40
22	01-JAN-22 Starcom	London	United Kingdom	1290 VISA_Sponsorship_press	press	CPA	59	90

- DM\_FCT\_BUDGET

```
7 | alter session set current_schema = DW_DATA;
8 | GRANT DELETE,INSERT,UPDATE,SELECT on DW_DATA.FCT_BUSINESS TO DM_BUDGET;
9 | GRANT DELETE,INSERT,UPDATE,SELECT on DW_DATA.DIM_CUSTOMER TO DM_BUDGET;
10| GRANT DELETE,INSERT,UPDATE,SELECT on DW_DATA.DIM_AGENCY TO DM_BUDGET;
11| GRANT DELETE,INSERT,UPDATE,SELECT on DW_DATA.DIM_PROMOTION TO DM_BUDGET;
12|
```

Session altered.

Grant succeeded.

Grant succeeded.

Grant succeeded.

Grant succeeded.

SQL Worksheet History

Worksheet Query Builder

```
13 :alter session set current_schema=DM_BUDGET;
14 :SELECT * FROM SAL CL.v sal budgets;
```

Script Output | Query Result | Fetched 50 rows in 1.633 seconds

YEAR	QUARTER	MONTH	DAY	GROSS_REVENUE	NET_REVENUE	GROSS_COST	NET_COST	GROSS_PROFIT	NET_PROFIT	MARGIN_PERCENT
1 2022	Q1	JANUARY	FRIDAY	8922144.68	7600408.7	2156825.11	1840031	6765319.87	5760377	75.83
2 2022	Q1	JANUARY	SATURDAY	11354703.33	9668032.51	2717231.58	2319191	8637472.02	7348840.73	76.07
3 2022	Q1	JANUARY	SUNDAY	11405232.28	9709098.87	2699807.81	2303655	8706424.9	7405443.06	76.34
4 2022	Q1	JANUARY	MONDAY	11215908.64	9543363.73	2688052.26	2294340	8527856.24	7249022.96	76.03
5 2022	Q1	JANUARY	TUESDAY	9041021.34	7694446.61	2152582.27	1836027	6888439.05	5858419.06	76.19
6 2022	Q1	JANUARY	WEDNESDAY	8920679.37	7589304.64	2166851.06	1849464	6753828.5	5739840.01	75.71
7 2022	Q1	JANUARY	THURSDAY	9187081.03	7823997.66	2159995.64	1843747	7027085.49	5980249.97	76.49
8 2022	Q1	FEBRUARY	TUESDAY	8990775.4	7657892.22	2171138.77	1852950	6819636.85	5804941.59	75.85
9 2022	Q1	FEBRUARY	WEDNESDAY	9055519.75	7711978.4	2156304.43	1840555	6899215.54	5871422.83	76.19
10 2022	Q1	FEBRUARY	THURSDAY	8843856.49	7530073.13	2171592.38	1853190	6672264.02	5676882.53	75.45
11 2022	Q1	FEBRUARY	FRIDAY	9145739.75	7784038.66	2154893.12	1838294	6990846.9	5945744.19	76.44
12 2022	Q1	FEBRUARY	MONDAY	8981667.69	7651819.59	2157038.55	1840688	6824584.28	5811130.91	75.98
13 2022	Q1	FEBRUARY	SATURDAY	9105782.8	7742947.32	2171004.41	1852404	6934778.58	5890542.7	76.16
14 2022	Q1	FEBRUARY	SUNDAY	8981393.16	7641654.12	2157822.9	1841336	6823570.39	5800317.44	75.97
15 2022	Q1	MARCH	TUESDAY	11256930.04	9586394.67	2717264.22	2319780	8539665.98	7266613.95	75.86
16 2022	Q1	MARCH	WEDNESDAY	11212932.28	9546489.14	2687911.03	2293649	8525021.51	7252839.39	76.03
17 2022	Q1	MARCH	THURSDAY	11196340.35	9529929.32	2716553.62	2318527	8479786.65	7211401.57	75.74
18 2022	Q1	MARCH	FRIDAY	9159264.96	7797664.65	2177545.92	1857760	6981719.44	5939904.14	76.23
19 2022	Q1	MARCH	SUNDAY	9068968.94	7718943.36	2144383.71	1831048	6924585.43	5887894.79	76.35
20 2022	Q1	MARCH	MONDAY	9041810.8	7694432.68	2169146.76	1851351	6872664.29	5843081.11	76.01
21 2022	Q1	MARCH	SATURDAY	9005810.06	7667678.72	2170082.29	1851937	6835728.16	5815741.04	75.9
22 2022	Q2	MAY	WEDNESDAY	9106390.06	7750502.8	2169644.67	1851853	6936745.43	5898649.11	76.17
23 2022	Q2	MAY	THURSDAY	9223696.48	7851941.76	2174064.12	1855787	7049632.61	5996154.07	76.43
24 2022	Q2	APRIL	MONDAY	9142060.92	7778358.73	2169222.52	1849706	6973838.51	5928652.14	76.28

15 :SELECT \* FROM SAL CL.v sal budgets agency;

Script Output | Query Result | Fetched 50 rows in 1.159 seconds

SQL | Fetched 50 rows in 1.159 seconds

DATE_MONTH	AGENCY_NAME	AGENCY_COUNTRY	AGENCY_CITY	GROSS_REVENUE	NET_REVENUE	GROSS_COST	NET_COST	GROSS_PROFIT	NET_PROFIT	MARGIN_PERCENT
1 01-JAN-22	Starcom	Australia	Sydney	1087492.15	864461.89	1216541.38	967044	-129049.34	-102582.84	-11.87
2 01-JAN-22	Starcom	Australia	(null)	1087492.15	864461.89	1216541.38	967044	-129049.34	-102582.84	-11.87
3 01-JAN-22	Starcom	China	Hong Kong	4818899.61	1066093.98	943446	3752795.63	3321059.06	77.88	
4 01-JAN-22	Starcom	China	Shanghai	4823823.53	4268872	1070868.23	947671	3752955.28	3321200.5	77.8
5 01-JAN-22	Starcom	China	(null)	9642713.14	8533377.61	2136962.21	1891117	7505750.91	6642259.56	77.84
6 01-JAN-22	Starcom	Cyprus	Nicosia	7149559.25	6008033.44	1130876.04	950316	6018683.21	5057717.36	84.18
7 01-JAN-22	Starcom	Cyprus	(null)	7149559.25	6008033.44	1130876.04	950316	6018683.21	5057717.36	84.18
8 01-JAN-22	Starcom	Egypt	Cairo	4797528.32	4208360	1087516.68	953962	3710011.63	3254397.4	77.33
9 01-JAN-22	Starcom	Egypt	(null)	4797528.32	4208360	1087516.68	953962	3710011.63	3254397.4	77.33
10 01-JAN-22	Starcom	France	Paris	2054998.63	1712499.22	1146770.4	955642	908228.23	756856.86	44.2
11 01-JAN-22	Starcom	France	(null)	2054998.63	1712499.22	1146770.4	955642	908228.23	756856.86	44.2
12 01-JAN-22	Starcom	Germany	Berlin	2949625.12	2478677.1	1146626.88	963552	1802998.23	1515124.78	61.13
13 01-JAN-22	Starcom	Germany	(null)	2949625.12	2478677.1	1146626.88	963552	1802998.23	1515124.78	61.13
14 01-JAN-22	Starcom	Italy	Milan	2103569.9	1724237.91	1152236.32	944456	951333.57	779781.63	45.22
15 01-JAN-22	Starcom	Italy	(null)	2103569.9	1724237.91	1152236.32	944456	951333.57	779781.63	45.22
16 01-JAN-22	Starcom	Poland	Warsaw	8488847.91	6901502.46	1170750.9	951830	7318097.01	5949672.46	86.21
17 01-JAN-22	Starcom	Poland	(null)	8488847.91	6901502.46	1170750.9	951830	7318097.01	5949672.46	86.21
18 01-JAN-22	Starcom	Russia	Moscow	7040378.11	5866982.04	1140723.6	950603	5899654.47	4916378.91	83.8
19 01-JAN-22	Starcom	Russia	(null)	7040378.11	5866982.04	1140723.6	950603	5899654.47	4916378.91	83.8
20 01-JAN-22	Starcom	Spain	Barcelona	9213490.01	7614455.25	1146367.31	947411	8067122.7	6667044.21	87.56
21 01-JAN-22	Starcom	Spain	(null)	9213490.01	7614455.25	1146367.31	947411	8067122.7	6667044.21	87.56
22 01-JAN-22	Starcom	Switzerland	Zurich	1819977.79	1689858.98	1029297.11	955706	790682.25	734152.73	43.44
23 01-JAN-22	Starcom	Switzerland	(null)	1819977.79	1689858.98	1029297.11	955706	790682.25	734152.73	43.44
24 01-JAN-22	Starcom	UAE	Dubai	3594096.88	3422949.19	994671.3	947306	2599425.56	2475643.19	72.32

16 | SELECT \* FROM SAL\_CL.v\_sal\_budgets\_brand\_promotion;

Script Output | Query Result | Query Result 1 | Query Result 2 | Query Result 3 | Fetched 50 rows in 0.86 seconds

DATE_MONTH	CUSTOMER_NAME	BRAND_NAME	PROMOTION_MEDIA_TYPE	GROSS_REVENUE	NET_REVENUE	GROSS_COST	NET_COST	GROSS_PROFIT	NET_PROFIT
1 01-JAN-22	Samsung Electronics	SAMSUNG	OOH	7525615.2	6407143.1	1788792.18	1526617	5736822.98	4880525.58
2 01-JAN-22	Samsung Electronics	SAMSUNG	TV	7461399.43	6353431.32	1801945.49	1537325	5659453.99	4816105.81
3 01-JAN-22	Samsung Electronics	SAMSUNG	design	7562196.92	6440957.32	1780881.78	1519656	5781315.24	4921300.81
4 01-JAN-22	Samsung Electronics	SAMSUNG	digital	7464536.97	6350401.76	18008945.6	1544987	5655591.83	4805414.25
5 01-JAN-22	Samsung Electronics	SAMSUNG	press	7345701.64	6253298.14	1790200.08	1527649	5555501.43	4725648.52
6 01-JAN-22	Samsung Electronics	SAMSUNG	production	7692866.68	6541351.1	1787128.51	1524469	5905738.56	5016881.53
7 01-JAN-22	Samsung Electronics	SAMSUNG	radio	7501260.42	6389014.3	1793134.42	1529988	5708125.94	4859025.82
8 01-JAN-22	Samsung Electronics	SAMSUNG	(null)	52553577.26	44735597.04	12551028.06	10710691	40002549.97	34024902.32
9 01-JAN-22	Samsung Electronics	SAMSUNG	(null)	52553577.26	44735597.04	12551028.06	10710691	40002549.97	34024902.32
10 01-JAN-22	Visa International Service Association	VISA	OOH	2478543.57	2108978.24	597828.06	510378	1880715.54	1598600.05
11 01-JAN-22	Visa International Service Association	VISA	TV	2492309.11	2121202.81	607222.65	518101	1885086.51	1603101.68
12 01-JAN-22	Visa International Service Association	VISA	design	2506208.14	2134686.06	586995.55	501253	1919212.68	1633432.84
13 01-JAN-22	Visa International Service Association	VISA	digital	2587279.4	2202489.47	602610.93	514325	1984668.46	1688164.34
14 01-JAN-22	Visa International Service Association	VISA	press	2503744.61	2133478.57	603505.01	515217	1900239.67	1618261.32
15 01-JAN-22	Visa International Service Association	VISA	production	2434144.93	2074015.27	599394.31	511831	1834750.73	1562184.17
16 01-JAN-22	Visa International Service Association	VISA	radio	2490963.65	2118205.26	591761.16	504659	1899202.51	1613546.07
17 01-JAN-22	Visa International Service Association	VISA	(null)	17493193.41	14893055.68	4189317.67	3575764	13303876.1	11317290.47
18 01-JAN-22	Visa International Service Association	VISA	(null)	17493193.41	14893055.68	4189317.67	3575764	13303876.1	11317290.47
19 01-JAN-22	(null)	(null)	(null)	70046770.67	59628652.72	16740345.73	14286455	53306426.07	45342192.79
20 01-FEB-22	Samsung Electronics	SAMSUNG	OOH	6731752.82	5730438.36	1624150.1	1385500	5107602.99	4344937.81
21 01-FEB-22	Samsung Electronics	SAMSUNG	TV	6735013.63	5732901.65	1623972.24	1385971	5111041.6	4346930.33
22 01-FEB-22	Samsung Electronics	SAMSUNG	design	6724411.37	5723854.77	1628800.19	1390646	5095611.09	4333208.43
23 01-FEB-22	Samsung Electronics	SAMSUNG	digital	6816617.8	5798686.44	1616838	1379417	5199779.89	4419268.94
24 01-FEB-22	Samsung Electronics	SAMSUNG	presso	6766210.12	6765267.51	1601507.05	13260488	5154703.31	4326012.04

17 | SELECT \* FROM SAL\_CL.v\_sal\_budgets\_customer\_brand;

Script Output | Query Result | Query Result 1 | Query Result 2 | Query Result 3 | All Rows Fetched: 35 in 1.189 seconds

SQL | Fetched 35 rows in 1.189 seconds

DATE_MONTH	AGENCY_NAME	CUSTOMER_NAME	BRAND_NAME	GROSS_REVENUE	NET_REVENUE	GROSS_COST	NET_COST	GROSS_PROFIT	NET_PROFIT	MARGIN_PERCENT
1 01-JAN-22	Starcom	Samsung Electronics	SAMSUNG	52553577.26	44735597.04	12551028.06	10710691	40002549.97	34024902.32	76.12
2 01-JAN-22	Starcom	Samsung Electronics	(null)	52553577.26	44735597.04	12551028.06	10710691	40002549.97	34024902.32	76.12
3 01-JAN-22	Starcom	Visa International ...	VISA	17493193.41	14893055.68	4189317.67	3575764	13303876.1	11317290.47	76.05
4 01-JAN-22	Starcom	Visa International ...	(null)	17493193.41	14893055.68	4189317.67	3575764	13303876.1	11317290.47	76.05
5 01-JAN-22	Starcom	(null)	(null)	70046770.67	59628652.72	16740345.73	14286455	53306426.07	45342192.79	76.1
6 01-FEB-22	Starcom	Samsung Electronics	SAMSUNG	47354477.71	40308001.53	11351171.22	9686893	36003307.43	30621105.23	76.03
7 01-FEB-22	Starcom	Samsung Electronics	(null)	47354477.71	40308001.53	11351171.22	9686893	36003307.43	30621105.23	76.03
8 01-FEB-22	Starcom	Visa International ...	VISA	15750257.33	13412401.91	3788668.37	3232524	11961589.13	10179876.96	75.95
9 01-FEB-22	Starcom	Visa International ...	(null)	15750257.33	13412401.91	3788668.37	3232524	11961589.13	10179876.96	75.95
10 01-FEB-22	Starcom	(null)	(null)	63104735.04	53720403.44	15139839.59	12919417	47964896.56	40800982.19	76.01
11 01-MAR-22	Starcom	Samsung Electronics	SAMSUNG	52381394.49	44591213.24	12595838.74	10750046	39785556.88	33841163.77	75.95
12 01-MAR-22	Starcom	Samsung Electronics	(null)	52381394.49	44591213.24	12595838.74	10750046	39785556.88	33841163.77	75.95
13 01-MAR-22	Starcom	Visa International ...	VISA	17560662.94	14950319.3	4187048.81	3574006	13373614.58	11376312.22	76.16
14 01-MAR-22	Starcom	Visa International ...	(null)	17560662.94	14950319.3	4187048.81	3574006	13373614.58	11376312.22	76.16
15 01-MAR-22	Starcom	(null)	(null)	69942057.43	59541532.54	16752887.55	14324052	53159171.46	45217475.99	76
16 01-APR-22	Starcom	Samsung Electronics	SAMSUNG	50823746.84	43255935.83	12153592.29	10371890	38670155.48	32884042.23	76.09
17 01-APR-22	Starcom	Samsung Electronics	(null)	50823746.84	43255935.83	12153592.29	10371890	38670155.48	32884042.23	76.09
18 01-APR-22	Starcom	Visa International ...	VISA	16876287.41	14364107.76	4043916.65	3452023	12832370.78	10912083.86	76.04
19 01-APR-22	Starcom	Visa International ...	(null)	16876287.41	14364107.76	4043916.65	3452023	12832370.78	10912083.86	76.04
20 01-APR-22	Starcom	(null)	(null)	67700034.25	57620043.58	1619708.94	13823913	51502526.26	43796126.09	76.07
21 01-MAY-22	Starcom	Samsung Electronics	SAMSUNG	52610648.47	44784133.06	12582709.79	10741822	40027939.9	34042307.18	76.08
22 01-MAY-22	Starcom	Samsung Electronics	(null)	52610648.47	44784133.06	12582709.79	10741822	40027939.9	34042307.18	76.08
23 01-MAY-22	Starcom	Visa International ...	VISA	17429900.83	14838126.99	4185818.58	3571925	13244082.89	11266200.56	75.98
24 01-MAY-22	Starcom	Visa International ...	(null)	17429900.83	14838126.99	4185818.58	3571925	13244082.89	11266200.56	75.98

## • DM\_FCT\_QUANTITY

```

7 alter session set current_schema = DW_DATA;
8 GRANT DELETE,INSERT,UPDATE,SELECT on DW_DATA.FCT_BUSINESS TO DM_QUANTITY;
9 GRANT DELETE,INSERT,UPDATE,SELECT on DW_DATA.DIM_CUSTOMER TO DM_QUANTITY;
10 GRANT DELETE,INSERT,UPDATE,SELECT on DW_DATA.DIM_AGENCY TO DM_QUANTITY;
11 GRANT DELETE,INSERT,UPDATE,SELECT on DW_DATA.DIM_PROMOTION TO DM_QUANTITY;
12

```

Query Result | Script Output | Task completed in 0.081 seconds

Session altered.
Grant succeeded.
Grant succeeded.
Grant succeeded.
Grant succeeded.

13 | alter session set current\_schema=DM\_QUANTITY;  
14 | SELECT \* FROM SAL\_CL.v\_sal\_quantity\_agency\_promotion;

Script Output | Query Result | Query Result 1 | Query Result 2 | Query Result 3  
SQL | Fetched 250 rows in 0.279 seconds

DATE_MONTH	BRAND_NAME	AGENCY_CITY	PROMOTION_MEDIA_TYPE	NUMBER_OF_PROMOTIONS
1 01-JAN-22	SAMSUNG	Barcelona	OOH	372
2 01-JAN-22	SAMSUNG	Barcelona	TV	372
3 01-JAN-22	SAMSUNG	Barcelona	design	372
4 01-JAN-22	SAMSUNG	Barcelona	digital	372
5 01-JAN-22	SAMSUNG	Barcelona	press	372
6 01-JAN-22	SAMSUNG	Barcelona	production	372
7 01-JAN-22	SAMSUNG	Barcelona	radio	372
8 01-JAN-22	SAMSUNG	Berlin	OOH	372
9 01-JAN-22	SAMSUNG	Berlin	TV	372
10 01-JAN-22	SAMSUNG	Berlin	design	372
11 01-JAN-22	SAMSUNG	Berlin	digital	372
12 01-JAN-22	SAMSUNG	Berlin	press	372
13 01-JAN-22	SAMSUNG	Berlin	production	372
14 01-JAN-22	SAMSUNG	Berlin	radio	372
15 01-JAN-22	SAMSUNG	Cairo	OOH	372
16 01-JAN-22	SAMSUNG	Cairo	TV	372
17 01-JAN-22	SAMSUNG	Cairo	design	372
18 01-JAN-22	SAMSUNG	Cairo	digital	372
19 01-JAN-22	SAMSUNG	Cairo	press	372
20 01-JAN-22	SAMSUNG	Cairo	production	372
21 01-JAN-22	SAMSUNG	Cairo	radio	372
22 01-JAN-22	SAMSUNG	Dubai	OOH	372

15 | SELECT \* FROM SAL\_CL.v\_sal\_quantity\_agency\_customer\_brand;

Script Output | Query Result | Query Result 1 | Query Result 2 | Query Result 3  
SQL | Fetched 50 rows in 0.24 seconds

DATE_MONTH	AGENCY_NAME	AGENCY_CITY	AGENCY_COUNTRY	NUMBER_OF_CUSTOMERS	NUMBER_OF_BRANDS
1 01-JAN-22	Starcom	Barcelona	Spain	2	2
2 01-JAN-22	Starcom	Berlin	Germany	2	2
3 01-JAN-22	Starcom	Cairo	Egypt	2	2
4 01-JAN-22	Starcom	Dubai	UAE	2	2
5 01-JAN-22	Starcom	Hong Kong	China	2	2
6 01-JAN-22	Starcom	London	United Kingdom	2	2
7 01-JAN-22	Starcom	Milan	Italy	2	2
8 01-JAN-22	Starcom	Moscow	Russia	2	2
9 01-JAN-22	Starcom	New York	United States	2	2
10 01-JAN-22	Starcom	Nicosia	Cyprus	2	2
11 01-JAN-22	Starcom	Paris	France	2	2
12 01-JAN-22	Starcom	Shanghai	China	2	2
13 01-JAN-22	Starcom	Sydney	Australia	2	2
14 01-JAN-22	Starcom	Warsaw	Poland	2	2
15 01-JAN-22	Starcom	Zurich	Switzerland	2	2
16 01-FEB-22	Starcom	Barcelona	Spain	2	2
17 01-FEB-22	Starcom	Berlin	Germany	2	2
18 01-FEB-22	Starcom	Cairo	Egypt	2	2
19 01-FEB-22	Starcom	Dubai	UAE	2	2
20 01-FEB-22	Starcom	Hong Kong	China	2	2
21 01-FEB-22	Starcom	London	United Kingdom	2	2
22 01-FEB-22	Starcom	Milan	Italy	2	2
23 01-FEB-22	Starcom	Moscow	Russia	2	2

16 | SELECT \* FROM SAL\_CL.v\_sal\_quantity\_agency\_employee;

Script Output | Query Result | Query Result 1 | Query Result 2 | Query Result 3  
SQL | Fetched 50 rows in 0.254 seconds

TIME_ID	AGENCY_NAME	AGENCY_CITY	AGENCY_COUNTRY	NUMBER_OF_EMPLOYEES
1 01-JAN-22	Starcom	Barcelona	Spain	69
2 01-JAN-22	Starcom	Berlin	Germany	67
3 01-JAN-22	Starcom	Cairo	Egypt	73
4 01-JAN-22	Starcom	Dubai	UAE	62
5 01-JAN-22	Starcom	Hong Kong	China	67
6 01-JAN-22	Starcom	London	United Kingdom	66
7 01-JAN-22	Starcom	Milan	Italy	68
8 01-JAN-22	Starcom	Moscow	Russia	65
9 01-JAN-22	Starcom	New York	United States	67
10 01-JAN-22	Starcom	Nicosia	Cyprus	68
11 01-JAN-22	Starcom	Paris	France	73
12 01-JAN-22	Starcom	Shanghai	China	67
13 01-JAN-22	Starcom	Sydney	Australia	71
14 01-JAN-22	Starcom	Warsaw	Poland	69
15 01-JAN-22	Starcom	Zurich	Switzerland	71
16 02-JAN-22	Starcom	Barcelona	Spain	65
17 02-JAN-22	Starcom	Berlin	Germany	69
18 02-JAN-22	Starcom	Cairo	Egypt	68
19 02-JAN-22	Starcom	Dubai	UAE	65
20 02-JAN-22	Starcom	Hong Kong	China	69
21 02-JAN-22	Starcom	London	United Kingdom	75
22 02-JAN-22	Starcom	Milan	Italy	67
23 02-JAN-22	Starcom	Moscow	Russia	73

17 | SELECT \* FROM SAL\_CL.v\_sal\_quantity\_agency\_promotion;

18 |

Script Output x | Query Result x | Query Result 1 x | Query Result 2 x | Query Result 3 x

SQL | Fetched 50 rows in 0.192 seconds

	DATE_MONTH	BRAND_NAME	AGENCY_CITY	PROMOTION_MEDIA_TYPE	NUMBER_OF_PROMOTIONS
1	01-JAN-22	SAMSUNG	Barcelona	OOH	372
2	01-JAN-22	SAMSUNG	Barcelona	TV	372
3	01-JAN-22	SAMSUNG	Barcelona	design	372
4	01-JAN-22	SAMSUNG	Barcelona	digital	372
5	01-JAN-22	SAMSUNG	Barcelona	press	372
6	01-JAN-22	SAMSUNG	Barcelona	production	372
7	01-JAN-22	SAMSUNG	Barcelona	radio	372
8	01-JAN-22	SAMSUNG	Berlin	OOH	372
9	01-JAN-22	SAMSUNG	Berlin	TV	372
10	01-JAN-22	SAMSUNG	Berlin	design	372
11	01-JAN-22	SAMSUNG	Berlin	digital	372
12	01-JAN-22	SAMSUNG	Berlin	press	372
13	01-JAN-22	SAMSUNG	Berlin	production	372
14	01-JAN-22	SAMSUNG	Berlin	radio	372
15	01-JAN-22	SAMSUNG	Cairo	OOH	372
16	01-JAN-22	SAMSUNG	Cairo	TV	372
17	01-JAN-22	SAMSUNG	Cairo	design	372
18	01-JAN-22	SAMSUNG	Cairo	digital	372
19	01-JAN-22	SAMSUNG	Cairo	press	372
20	01-JAN-22	SAMSUNG	Cairo	production	372
21	01-JAN-22	SAMSUNG	Cairo	radio	372
22	01-JAN-22	SAMSUNG	Dubai	OOH	372
23	01-JAN-22	SAMSUNG	Dubai	TV	372

- DM\_FCT\_SALARY

```
4 | alter session set current_schema = DW_DATA;
5 | GRANT DELETE,INSERT,UPDATE,SELECT on DW_DATA.FCT_BUSINESS TO DM_SALARY;
6 | GRANT DELETE,INSERT,UPDATE,SELECT on DW_DATA.DIM_AGENCY TO DM_SALARY;
7 | GRANT DELETE,INSERT,UPDATE,SELECT on DW_DATA.DIM_EMPLOYEE TO DM_SALARY;
8 | GRANT DELETE,INSERT,UPDATE,SELECT on DW_DATA.DIM_PROMOTION TO DM_SALARY;
```

Script Output x

Task completed in 0.074 seconds

Session altered.

Grant succeeded.

Grant succeeded.

Grant succeeded.

Grant succeeded.

12 | SELECT \* FROM SAL\_CL.v\_sal\_employee\_salary\_total;

13 |

Script Output x | Query Result x | Query Result 1 x

SQL | All Rows Fetched: 9 in 0.275 seconds

	YEAR	MONTH	PERIOD	GROSS_SALARY_EMPLOYEE	NET_SALARY_EMPLOYEE
1	01-JAN-22	01-MAR-22	MONTH	16782887.55	14324052
2	01-JAN-22	01-JAN-22	MONTH	16740345.73	14286455
3	01-JAN-22	01-FEB-22	MONTH	15139839.59	12919417
4	01-JAN-22	01-APR-22	MONTH	16197508.94	13823913
5	01-JAN-22	01-MAY-22	MONTH	16768528.37	14313747
6	01-JAN-22	01-JUN-22	MONTH	16224818.16	13847563
7	01-JAN-22	01-JUL-22	MONTH	10340195.31	8826010
8	01-JAN-22	(null)	YEAR	108194123.65	92341157
9	(null)	(null)	ALL	108194123.65	92341157

	MONTH	EMPLOYEE	EMPLOYEE_SALARY_PROJECT_GROSS	EMPLOYEE_SALARY_PROJECT_NET
1	01-JAN-22	Alex Abramson	170393.17	145863
2	01-JAN-22	Alex Barnes	184074.98	156505
3	01-JAN-22	Alex Campbell	148042.04	126442
4	01-JAN-22	Alex Delon	174864.68	149307
5	01-JAN-22	Alex Enderson	180045.06	153695
6	01-JAN-22	Alex Foster	165955.93	141016
7	01-JAN-22	Alex Gauss	162496	139233
8	01-JAN-22	Alex Hasse	162460.79	138569
9	01-JAN-22	Alex Joukowski	171412.3	146610
10	01-JAN-22	Alex Kendall	165351.92	141193
11	01-JAN-22	Billie Abramson	164290.77	139958
12	01-JAN-22	Billie Barnes	149192.24	127781
13	01-JAN-22	Billie Campbell	168691.97	144309
14	01-JAN-22	Billie Delon	156456.96	133395
15	01-JAN-22	Billie Enderson	157994.34	135158
16	01-JAN-22	Billie Foster	164178.78	139306
17	01-JAN-22	Billie Gauss	163494.03	139161
18	01-JAN-22	Billie Hasse	163636.69	139492
19	01-JAN-22	Billie Joukowski	168869.84	144561
20	01-JAN-22	Billie Kendall	170395.42	145371

Having analyzed the data from the Starcom data warehouse, looking at the margin parameter, we can say that this business is profitable. The average annual margin is 75.99%.

	YEAR	QUARTER	MONTH	DAY	GROSS_REVENUE	NET_REVENUE	GROSS_COST	NET_COST	GROSS_PROFIT	NET_PROFIT	MARGIN_PERCENT
49	2022	Q3	JULY	THURSDAY	4598766.13	3916447.68	1099865.75	938275	3498900.44	2978172.43	76.08
50	2022	Q1	JANUARY	All Days	70046770.67	59628652.72	16740345.73	14286455	53306426.07	45342192.79	76.1
51	2022	Q1	FEBRUARY	All Days	63104735.04	53720403.44	15139839.59	12919417	47964896.56	40800982.19	76.01
52	2022	Q1	MARCH	All Days	69942057.43	59541532.54	16782887.55	14324052	53159171.46	45217475.99	76
53	2022	Q2	MAY	All Days	70040549.3	59622260.05	1676528.37	14313747	53272022.79	45308507.74	76.06
54	2022	Q2	APRIL	All Days	67700034.25	57620043.59	16197508.94	13823913	51502526.26	43796126.09	76.07
55	2022	Q2	JUNE	All Days	66666509.45	56736334.8	16224818.16	13847563	50441692.44	42888767.17	75.66
56	2022	Q3	JULY	All Days	43176592.47	36750041.89	10340195.31	8826010	32836398.19	27924029.13	76.05
57	2022	Q1	All Mo... All Days		203093563.14	172890588.7	48663072.87	41529924	154430494.09	13136065...	76.04
58	2022	Q2	All Mo... All Days		204407093	173978638.44	49190855.47	41985223	155216241.49	131993401	75.93
59	2022	Q3	All Mo... All Days		43176592.47	36750041.89	10340195.31	8826010	32836398.19	27924029.13	76.05
60	2022	All Qu... All Mo... All Days			450677248.61	383619269.03	10819412...	92341157	342483133.77	291278081.1	75.99
61	All A1... All Qu... All Mo... All Days				450677248.61	383619269.03	10819412...	92341157	342483133.77	291278081.1	75.99

SCD2 Dimension is included in the EMPLOYEE\_DIMENSION field of the Business model.