

Data Warehouse Project in SQL

Learning Outcomes:

- Analyzing Data
- SQL Basics & Advanced (Week 1 & 2)
- Extraction Process (Data Ingestion)
- Data Architecture
- Transformation Process (Data Cleaning)
- Dimensions / Facts
- Data Modeling
- Schemas (Snow & Star Flake)
- Load Process (Data warehouse Build)

Tools & Technologies

- SQL Server
- Azure Data Studio
- SQL
- Flat Files

Datasets: (CSV Files)

| | |
|--|--|
| <ul style="list-style-type: none">■ cust_info■ prd_info■ sales_details | <ul style="list-style-type: none">■ CUST_AZ12■ LOC_A101■ PX_CAT_G1V2 |
| <pre>1 cust_id,cst_key,cst_firstname,cst_lastname,cst_marital_status,cst_gndr,cst_create_date 2 11000,A000011000,Jon,Yang,M,M,2025-10-06 3 11001,A000011001,Eugene,Huang,S,M,2025-10-06 4 11002,A000011002,Ruben,Torres,M,M,2025-10-06 5 11003,A000011003,Christy,Zhu,S,F,2025-10-06 6 11004,A000011004,Elizabeth,Johnson,S,F,2025-10-06 7 11005,A000011005,Julio,Ruiz,S,M,2025-10-06 8 11006,A000011006,Janet,Alvarez,S,F,2025-10-06 9 11007,A000011007,Marco,Mehta,M,M,2025-10-06 10 11008,A000011008,Rob,Verhoff,S,F,2025-10-06 11 11009,A000011009,Shannon,Carlson,S,M,2025-10-06 12 11010,A000011010,Jacquelyn,Suarez,S,F,2025-10-06 13 11011,A000011011,Curtis,Lu,M,M,2025-10-06 14 11012,A000011012,Lauren,Walker,M,F,2025-10-06 15 11013,A000011013,Ian,Jenkins,M,M,2025-10-06 16 11014,A000011014,Sydney,Bennett,S,F,2025-10-06 17 11015,A000011015,Chloe,Young,S,F,2025-10-06 18 11016,A000011016,Myatt,Hill,M,M,2025-10-07 19 11017,A000011017,Shannon,Wang,S,F,2025-10-07 20 11018,A000011018,Clarence,Rai,S,M,2025-10-07</pre> | <pre>1 ID,CAT,SUBCAT,MAINTENANCE 2 AC_BR,Accessories,Bike Racks,Yes 3 AC_BS,Accessories,Bike Stands,No 4 AC_BC,Accessories,Bottles and Cages,No 5 AC_CL,Accessories,Cleaners,Yes 6 AC_FE,Accessories,Fenders,No 7 AC_HE,Accessories,Helmets,Yes 8 AC_HP,Accessories,Hydration Packs,No 9 AC_LI,Accessories,Lights,Yes 10 AC_LO,Accessories,Locks,Yes 11 AC_PA,Accessories,Panniers,No 12 AC_PU,Accessories,Pumps,Yes 13 AC_TT,Accessories,Tires and Tubes,Yes 14 BI_MB,Bikes,Mountain Bikes,Yes 15 BI_RB,Bikes,Road Bikes,Yes 16 BI_TB,Bikes,Touring Bikes,Yes 17 CL_BS,Clothing,Bib-Shorts,No 18 CL_CA,Clothing,Caps,No 19 CL_GL,Clothing,Gloves,No 20 CL_JE,Clothing,Jerseys,No</pre> |

| | |
|---|--|
| <pre> 1 prd_id,prd_key,prd_nm,prd_cost,prd_line,prd_start_dt,prd_end_dt 2 210,CO-RF-FR-R92B-58,HL Road Frame - Black- 58,,R ,2003-07-01, 3 211,CO-RF-FR-R92R-58,HL Road Frame - Red- 58,,R ,2003-07-01, 4 212,AC-HE-HL-U509-R,Sport-100 Helmet- Red,12,S ,2011-07-01,2007-12-28 5 213,AC-HE-HL-U509-R,Sport-100 Helmet- Red,14,S ,2012-07-01,2008-12-27 6 214,AC-HE-HL-U509-R,Sport-100 Helmet- Red,13,S ,2013-07-01, 7 215,AC-HE-HL-U509,Sport-100 Helmet- Black,12,S ,2011-07-01,2007-12-28 8 216,AC-HE-HL-U509,Sport-100 Helmet- Black,14,S ,2012-07-01,2008-12-27 9 217,AC-HE-HL-U509,Sport-100 Helmet- Black,13,S ,2013-07-01, 10 218,CL-SO-SO-B909-M,Mountain Bike Socks- M,3,M ,2011-07-01,2007-12-28 11 219,CL-SO-SO-B909-L,Mountain Bike Socks- L,3,M ,2011-07-01,2007-12-28 12 220,AC-HE-HL-U509-B,Sport-100 Helmet- Blue,12,S ,2011-07-01,2007-12-28 13 221,AC-HE-HL-U509-B,Sport-100 Helmet- Blue,14,S ,2012-07-01,2008-12-27 14 222,AC-HE-HL-U509-B,Sport-100 Helmet- Blue,13,S ,2013-07-01, 15 223,CL-CA-CA-1098,AWC Logo Cap,6,S ,2011-07-01,2007-12-28 16 224,CL-CA-CA-1098,AWC Logo Cap,5,S ,2012-07-01,2008-12-27 17 225,CL-CA-CA-1098,AWC Logo Cap,7,S ,2013-07-01, 18 226,CL-JE-LJ-0192-S,Long-Sleeve Logo Jersey- S,32,S ,2011-07-01,2007-12-28 19 227,CL-JE-LJ-0192-S,Long-Sleeve Logo Jersey- S,29,S ,2012-07-01,2008-12-27 20 228,CL-JE-LJ-0192-S,Long-Sleeve Logo Jersey- S,30,S ,2013-07-01, </pre> | <pre> 1 CID,BDATE,GEN 2 NASA00011000,1971-10-06,Male 3 NASA00011001,1976-05-10,Male 4 NASA00011002,1971-02-09,Male 5 NASA00011003,1973-08-14,Female 6 NASA00011004,1979-08-05,Female 7 NASA00011005,1976-08-01,Male 8 NASA00011006,1976-12-02,Female 9 NASA00011007,1969-11-06,Male 10 NASA00011008,1975-07-04,Female 11 NASA00011009,1969-09-29,Male 12 NASA00011010,1969-08-05,Female 13 NASA00011011,1969-05-03,Male 14 NASA00011012,1979-01-14,Female 15 NASA00011013,1979-08-03,Male 16 NASA00011014,1973-11-06,Female 17 NASA00011015,1984-08-26,Female 18 NASA00011016,1984-10-25,Male 19 NASA00011017,1949-12-24,Female 20 NASA00011018,1955-10-06,Male </pre> |
| <pre> 1 sls_ord_num,sls_prd_key,sls_cost_id,sls_order_dt,sls_ship_dt,sls_due_dt,sls_sales,sls_quantity,sls_price 2 S043697,BK-R93R-62,21768,20101229,20101005,20101010,3578,1,3578 3 S043698,BK-R92S-44,28389,20101229,20101005,20101010,3400,1,3400 4 S043699,BK-R92S-44,25863,20101229,20101005,20101010,3400,1,3400 5 S043700,BK-R508-62,14501,20101229,20101005,20101010,699,1,699 6 S043701,BK-R92S-44,11069,20101229,20101005,20101010,3400,1,3400 7 S043702,BK-R93R-44,27645,20101229,20101006,20101011,3578,1,3578 8 S043703,BK-R93R-62,16624,20101230,20101006,20101011,3578,1,3578 9 S043704,BK-R92B-46,11005,20101230,20101006,20101011,3375,1,3375 10 S043705,BK-R92S-38,11011,20101230,20101006,20101011,3400,1,3400 11 S043706,BK-R93R-48,27621,20101231,20101007,20101012,3578,1,3578 12 S043707,BK-R93R-48,27616,20101231,20101007,20101012,3578,1,3578 13 S043708,BK-R508-52,20042,20101231,20101007,20101012,699,1,699 14 S043709,BK-R93R-52,16391,20101231,20101007,20101012,3578,1,3578 15 S043710,BK-R93R-56,16537,20101231,20101007,20101012,3578,1,3578 16 S043711,BK-R93R-56,27646,2010101,20101008,20101013,3578,1,3578 17 S043712,BK-R93R-44,13513,2010101,20101008,20101013,3578,1,3578 18 S043713,BK-R93R-62,27601,2010101,20101009,20101014,3578,1,3578 19 S043714,BK-R93R-44,13591,2010101,20101009,20101014,3578,1,3578 20 S043715,BK-R93R-56,16483,2010101,20101009,20101014,3578,1,3578 </pre> | <pre> 1 CID,CNTRY 2 AW-00011000,Australia 3 AW-00011001,Australia 4 AW-00011002,Australia 5 AW-00011003,Australia 6 AW-00011004,Australia 7 AW-00011005,Australia 8 AW-00011006,Australia 9 AW-00011007,Australia 10 AW-00011008,Australia 11 AW-00011009,Australia 12 AW-00011010,Australia 13 AW-00011011,Australia 14 AW-00011012,US 15 AW-00011013,US 16 AW-00011014,US 17 AW-00011015,US 18 AW-00011016,US 19 AW-00011017,Australia 20 AW-00011018,Australia </pre> |

Data Architecture:

- Bronze Layer – Data Ingestion (Extraction)
- Silver Layer – Data Ingestion, Data Cleaning (Extraction, Transformation)
- Gold Layer – Data Integration (Transformation, Load)

Extraction (Schema Bronze): Data Ingestion

Process Used

1. Full Load
2. Batch Processing

3. Truncate & Insert

Tables Creation:

```
1  IF OBJECT_ID('bronze.crm_cust_info' ,'U') IS not NULL
2  |   drop table bronze.crm_cust_info;
3  Create table bronze.crm_cust_info(
4  cst_id INT,
5  cst_key NVARCHAR(50),
6  cst_firstname NVARCHAR(50),
7  cst_lastname NVARCHAR(50),
8  cst_marital_status NVARCHAR(50),
9  cst_gndr NVARCHAR(50),
10 cst_create_date DATE
11 );
12
13 IF OBJECT_ID('bronze.crm_prd_info' ,'U') IS not NULL
14 |   drop table bronze.crm_prd_info;|
15 Create table bronze.crm_prd_info(
16 prd_id int,
17 prd_key NVARCHAR(50),
18 prd_nm NVARCHAR(50),
19 prd_cost int,
20 prd_line NVARCHAR(10),
21 prd_start_date Date,
22 prd_end_date Date
23 );
24
```

Data Ingestion:

```
12 TRUNCATE TABLE bronze.crm_cust_info
13 BULK INSERT bronze.crm_cust_info
14 from 'C:\Users\mtalha.saeed\OneDrive - Systems Limited\Internship_Work\DataWarehouse\datasets\source_crm\cust_info.csv'
15 with
16 ( FIRSTROW = 2,
17  Fieldterminator = ',',
18  tablock
19 );
20
21 |
22
23 TRUNCATE TABLE bronze.crm_prd_info
24 BULK INSERT bronze.crm_prd_info
25 from 'C:\Users\mtalha.saeed\OneDrive - Systems Limited\Internship_Work\DataWarehouse\datasets\source_crm\prd_info.csv'
26 with
27 ( FIRSTROW = 2,
28  Fieldterminator = ',',
29  tablock
30 );
```

Extraction & Transformation (Schema Silver):

For Silver Layer – Metadata Column added “dwh_create_date” in each column.

```

32  ✓ IF OBJECT_ID('silver.crm_sales_details' , 'U') IS not NULL
33      | drop table silver.crm_sales_details;
34  Create table silver.crm_sales_details(
35      sls_order_num NVARCHAR(50),
36      sls_prd_key NVARCHAR(50),
37      sls_cust_id int,
38      sls_order_dt int,
39      sls_ship_dt int,
40      sls_due_dt int,
41      sls_sales int,
42      sls_quantity int,
43      sls_price int,
44      dwh_create_date DATETIME2 DEFAULT GETDATE()
45  );
46
47
48  IF OBJECT_ID('silver.erp_cust_az12' , 'U') is not NULL
49  Drop table silver.erp_cust_az12;
50  ✓ create table silver.erp_cust_az12(
51      | cid NVARCHAR(50),
52      | bdate date ,
53      | gen NVARCHAR(50),
54      | dwh_create_date DATETIME2 DEFAULT GETDATE());

```

Transformation:

- Data Cleansing – Removing Nulls, Removing Duplicates, Remove String Spaces
- Data Standardization – Mapping Values
- Data Normalization – Normalize Data Into single type
- Derived Columns – Addition of New Columns from previous ones.
- Data Enrichment – Refining Data

SQL Scripts for Data Transformation (Schema Silver):

- Silver.crm_cust_info

```

10  SELECT
11      cst_id,
12      cst_key,
13      Trim(cst_firstname) as cst_firstname,
14      Trim(cst_lastname) as cst_lastname,
15
16      Case when upper(trim(cst_martial_status)) = 'S' then 'Single'
17      when upper(trim(cst_martial_status)) = 'M' then 'Married'
18      else 'n/a'
19      end cst_martial_status,
20
21      Case when upper(trim(cst_gndr)) = 'F' then 'Female'
22      when upper(trim(cst_gndr)) = 'M' then 'Male'
23      else 'n/a'
24      end cst_gndr,
25      cst_create_date
26  FROM
27      (
28          SELECT
29              *,
30              ROW_Number() OVER (PARTITION BY cst_id ORDER BY cst_create_date DESC) as flag_last
31          FROM
32              bronze.crm_cust_info
33      ) t
34  WHERE
35      flag_last = 1;

```

- Silver.crm_prd_info

```

53  Select
54      prd_id,
55      replace(SUBSTRING(prd_key, 1, 5), '-', '_') as cat_id,
56      SUBSTRING(prd_key , 7 , Len(prd_key)) as prd_key,
57      prd_nm,
58      isnull(prd_cost,0) as prd_cost,
59      case upper(trim(prd_line))
60          When 'M' Then 'Mountain'
61          When 'R' Then 'Road'
62          When 'S' Then 'Other Sales'
63          When 'T' Then 'Touring'
64      else 'n/a'
65      end prd_line,
66      cast (prd_start_date as date) as prd_start_date,
67      cast (DATEADD(day, -1, LEAD(prd_start_date) over(PARTITION by prd_key order by prd_start_date)) as date) as prd_end_date_test
68  from bronze.crm_prd_info;

```

- Silver.crm_sales_details

```

85  select
86  sls_order_num,
87  sls_prd_key,
88  sls_cust_id,
89  case when sls_order_dt = 0 OR len(sls_order_dt) != 8 then null
90  else cast(cast(sls_order_dt as Varchar) as date)
91  end as sls_order_dt,
92  case when sls_ship_dt = 0 OR len(sls_ship_dt) != 8 then null
93  else cast(cast(sls_ship_dt as Varchar) as date)
94  end as sls_ship_dt,
95  case when sls_due_dt = 0 OR len(sls_due_dt) != 8 then null
96  else cast(cast(sls_due_dt as Varchar) as date)
97  end as sls_due_dt,
98  case when sls_sales is null or sls_sales <= 0 or sls_sales != sls_quantity * ABS(sls_price)
99  |   then sls_quantity * ABS(sls_price)
100 |   else sls_sales
101 end as sls_sales,
102 sls_quantity,
103 case when sls_price is null or sls_price <= 0
104 |   then sls_sales /nullif(sls_quantity,0)
105 else sls_price
106 end as sls_price
107 | FROM
108 bronze.crm_sales_details;

```

- Silver.erp_cust_az12

```

122  select
123  case when cid LIKE 'NAS%' then SUBSTRING(cid, 4, len(cid))
124  else cid
125  end as cid,
126  case when bdate > getdate() then null
127  else bdate
128  end as bdate,
129  case when upper(TRIM(GEN)) in ('F' , 'Female') then 'Female'
130  when upper(TRIM(GEN)) in ('M' , 'male') then 'Male'
131  else ' n/a'
132  end as gen
133  from bronze.erp_cust_az12;
134

```

- Silver.erp_loc_a101

```

141 select |
142 replace(cid, '-', '') as cid,
143 CASE
144     WHEN TRIM(cntry) = 'DE' THEN 'Germany'
145     WHEN TRIM(cntry) IN ('US', 'USA') THEN 'United States'
146     WHEN TRIM(cntry) = '' OR TRIM(cntry) IS NULL THEN 'n/a'
147     ELSE TRIM(cntry)
148 END AS newcntry
149 from bronze.erp_loc_a101
150 ;

```

- Silver.erp_px_cat_g1v2

```

select
    id,
    cat,
    subcat,
    maintenance FROM
    bronze.erp_px_cat_g1v2;

```

Loads:

1. Data Integrations
 2. Aggregations
 3. Star Schema
 4. Aggregated Table
- Creating Dimension view Customers:

```

17
20 ✓ IF OBJECT_ID('gold.dim_customers', 'V') IS NOT NULL
21     DROP VIEW gold.dim_customers;
22     GO
23     CREATE VIEW gold.dim_customers AS
24 ✓ SELECT
25         ROW_NUMBER() OVER (ORDER BY cst_id) AS customer_key,
26         ci.cst_id AS customer_id,
27         ci.cst_key AS customer_number,
28         ci.cst_firstname AS first_name,
29         ci.cst_lastname AS last_name,
30         la.cntry AS country,
31         ci.cst_marital_status AS marital_status,
32 ✓ CASE
33     WHEN ci.cst_gndr != 'n/a' THEN ci.cst_gndr
34     ELSE COALESCE(ca.gen, 'n/a')
35 END AS gender,
36         ca.bdate AS birthdate,
37         ci.cst_create_date AS create_date
38 FROM silver.crm_cust_info ci
39 ✓ LEFT JOIN silver.erp_cust_az12 ca
40     ON ci.cst_key = ca.cid
41 ✓ LEFT JOIN silver.erp_loc_a101 la
42     ON ci.cst_key = la.cid;
43     GO

```

View:

| | customer_key | customer_id | customer_number | first_name | last_name | country | marital_status | gender | birthdate | create_date |
|----|--------------|-------------|-----------------|------------|-----------|-----------|----------------|--------|------------|-------------|
| 1 | 1 | 11000 | AW00011000 | Jon | Yang | Australia | Married | Male | 1971-10-06 | 2025-10-06 |
| 2 | 2 | 11001 | AW00011001 | Eugene | Huang | Australia | Single | Male | 1976-05-10 | 2025-10-06 |
| 3 | 3 | 11002 | AW00011002 | Ruben | Torres | Australia | Married | Male | 1971-02-09 | 2025-10-06 |
| 4 | 4 | 11003 | AW00011003 | Christy | Zhu | Australia | Single | Female | 1973-08-14 | 2025-10-06 |
| 5 | 5 | 11004 | AW00011004 | Elizabeth | Johnson | Australia | Single | Female | 1979-08-05 | 2025-10-06 |
| 6 | 6 | 11005 | AW00011005 | Julio | Ruiz | Australia | Single | Male | 1976-08-01 | 2025-10-06 |
| 7 | 7 | 11006 | AW00011006 | Janet | Alvarez | Australia | Single | Female | 1976-12-02 | 2025-10-06 |
| 8 | 8 | 11007 | AW00011007 | Marco | Mehta | Australia | Married | Male | 1969-11-06 | 2025-10-06 |
| 9 | 9 | 11008 | AW00011008 | Rob | Verhoff | Australia | Single | Female | 1975-07-04 | 2025-10-06 |
| 10 | 10 | 11009 | AW00011009 | Shannon | Carlson | Australia | Single | Male | 1969-09-29 | 2025-10-06 |

- Creating Dimension view Products:


```

52 CREATE VIEW gold.dim_products AS
53 SELECT
54     ROW_NUMBER() OVER (ORDER BY pn.prd_start_date, pn.prd_key) AS product_key,
55     pn.prd_id          AS product_id,
56     pn.prd_key         AS product_number,
57     pn.prd_nm          AS product_name,
58     pn.cat_id          AS category_id,
59     pc.cat             AS category,
60     pc.subcat          AS subcategory,
61     pc.maintenance     AS maintenance,
62     pn.prd_cost        AS cost,
63     pn.prd_line        AS product_line,
64     pn.prd_start_date AS start_date
65 FROM silver.crm_prd_info pn
66 LEFT JOIN silver.erp_px_cat_glv2 pc
67     ON pn.cat_id = pc.id
68 WHERE pn.prd_end_date IS NULL;
69 GO

```

View:

| | product_key | product_id | product_nu... | product_na... | category_id | category | subcategory | maintenance | cost | product_line | start_date |
|---|-------------|------------|---------------|----------------|-------------|------------|----------------|-------------|------|--------------|------------|
| 1 | | 210 | FR-R92B-58 | HL Road Fra... | CO_RF | Components | Road Frames | Yes | 0 | Road | 2003-07-01 |
| 2 | | 211 | FR-R92R-58 | HL Road Fra... | CO_RF | Components | Road Frames | Yes | 0 | Road | 2003-07-01 |
| 3 | | 348 | BK-M82B-38 | Mountain-1... | BI_MB | Bikes | Mountain Bi... | Yes | 1898 | Mountain | 2011-07-01 |
| 4 | | 349 | BK-M82B-42 | Mountain-1... | BI_MB | Bikes | Mountain Bi... | Yes | 1898 | Mountain | 2011-07-01 |
| 5 | | 350 | BK-M82B-44 | Mountain-1... | BI_MB | Bikes | Mountain Bi... | Yes | 1898 | Mountain | 2011-07-01 |

- Creating Fact view Sales:

```

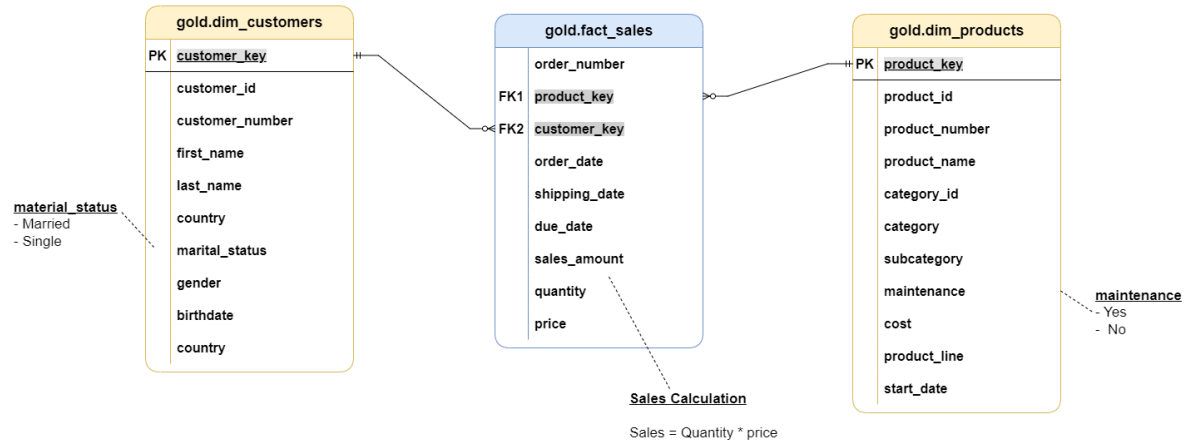
82 CREATE VIEW gold.fact_sales AS
83 SELECT
84     sd.sls_order_num AS order_number,
85     pr.product_key AS product_key,
86     cu.customer_key AS customer_key,
87     sd.sls_order_dt AS order_date,
88     sd.sls_ship_dt AS shipping_date,
89     sd.sls_due_dt AS due_date,
90     sd.sls_sales AS sales_amount,
91     sd.sls_quantity AS quantity,
92     sd.sls_price AS price
93 FROM silver.crm_sales_details sd
94 LEFT JOIN gold.dim_products pr
95     ON sd.sls_prd_key = pr.product_number
96 LEFT JOIN gold.dim_customers cu
97     ON sd.sls_cust_id = cu.customer_id;
98 GO

```

View:

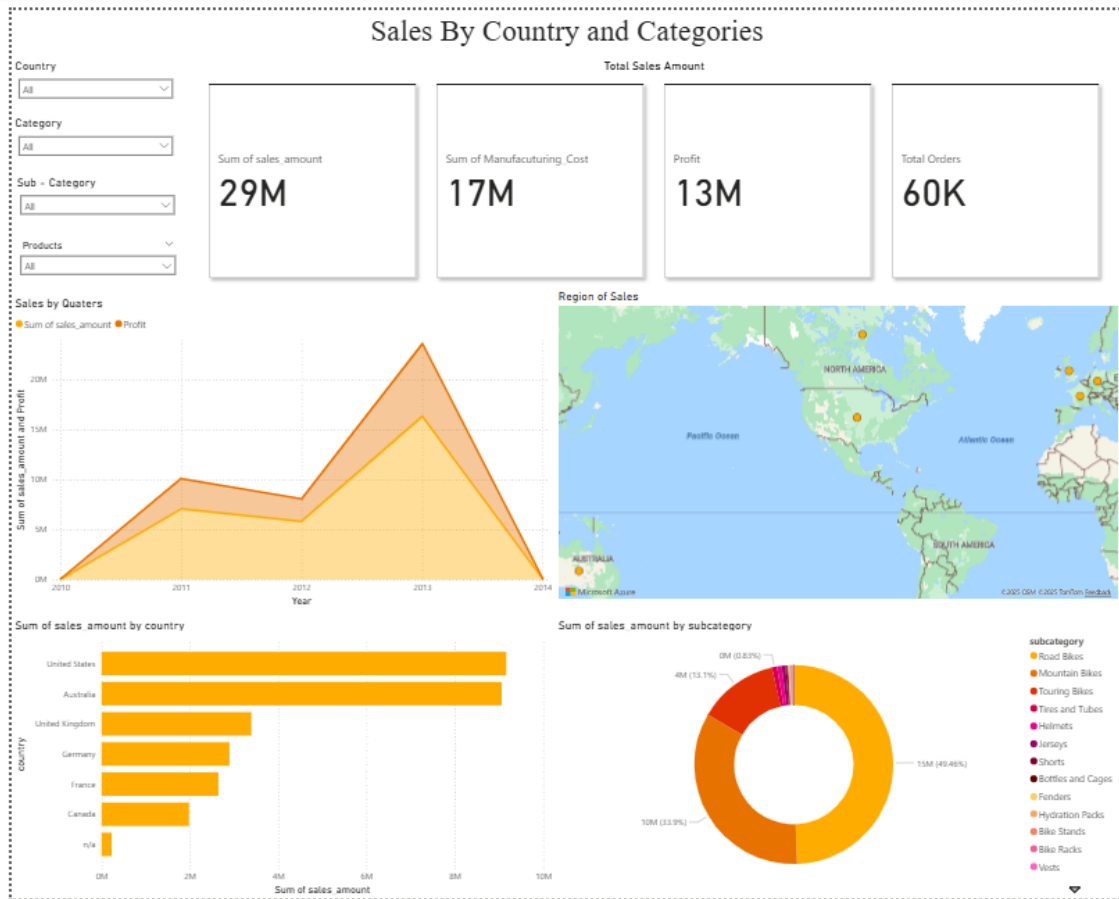
| | order_number | product_key | customer_key | order_date | shipping_date | due_date | sales_amount | quantity | price |
|---|--------------|-------------|--------------|------------|---------------|------------|--------------|----------|-------|
| 1 | S043697 | 20 | 10769 | 2010-12-29 | 2011-01-05 | 2011-01-10 | 3578 | 1 | 3578 |
| 2 | S043698 | 9 | 17390 | 2010-12-29 | 2011-01-05 | 2011-01-10 | 3400 | 1 | 3400 |
| 3 | S043699 | 9 | 14864 | 2010-12-29 | 2011-01-05 | 2011-01-10 | 3400 | 1 | 3400 |
| 4 | S043700 | 41 | 3502 | 2010-12-29 | 2011-01-05 | 2011-01-10 | 699 | 1 | 699 |
| 5 | S043701 | 9 | 4 | 2010-12-29 | 2011-01-05 | 2011-01-10 | 3400 | 1 | 3400 |
| 6 | S043702 | 16 | 16646 | 2010-12-30 | 2011-01-06 | 2011-01-11 | 3578 | 1 | 3578 |
| 7 | S043703 | 20 | 5625 | 2010-12-30 | 2011-01-06 | 2011-01-11 | 3578 | 1 | 3578 |
| 8 | S043704 | 6 | 6 | 2010-12-30 | 2011-01-06 | 2011-01-11 | 3375 | 1 | 3375 |
| 9 | S043705 | 7 | 12 | 2010-12-30 | 2011-01-06 | 2011-01-11 | 3400 | 1 | 3400 |

Star Schema:



End of Data Warehouse.

Building BI Report



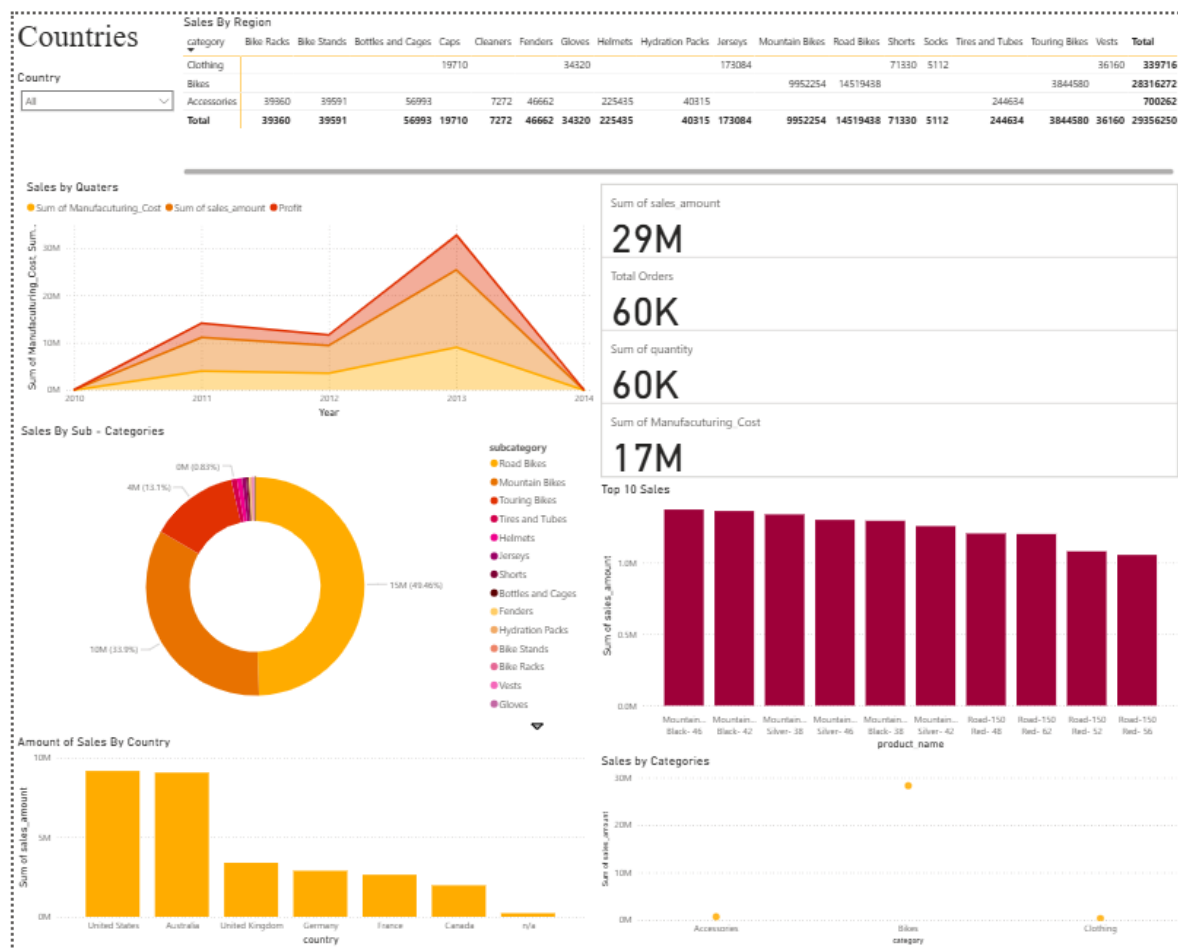
First Page of BI Report:

Charts Used:

- Slicers - Filtering by All Possibilities including Countries, Categories, Sub-Categories, Products.
- Heat Map – Shows Region with Sales
- Stacked Line Chart - Shows Sales Amount, Profit by Year
- Horizontal Bar Chart – Shows Country Sales
- Pie Chart – Shows Sales Amount by Sub – Categories.
- Cards – Shows Number

DAX Used:

- Total Orders – Count [order Num]
- Profit – Sum (Sales Amount) - Sum (Manufacturing Price)



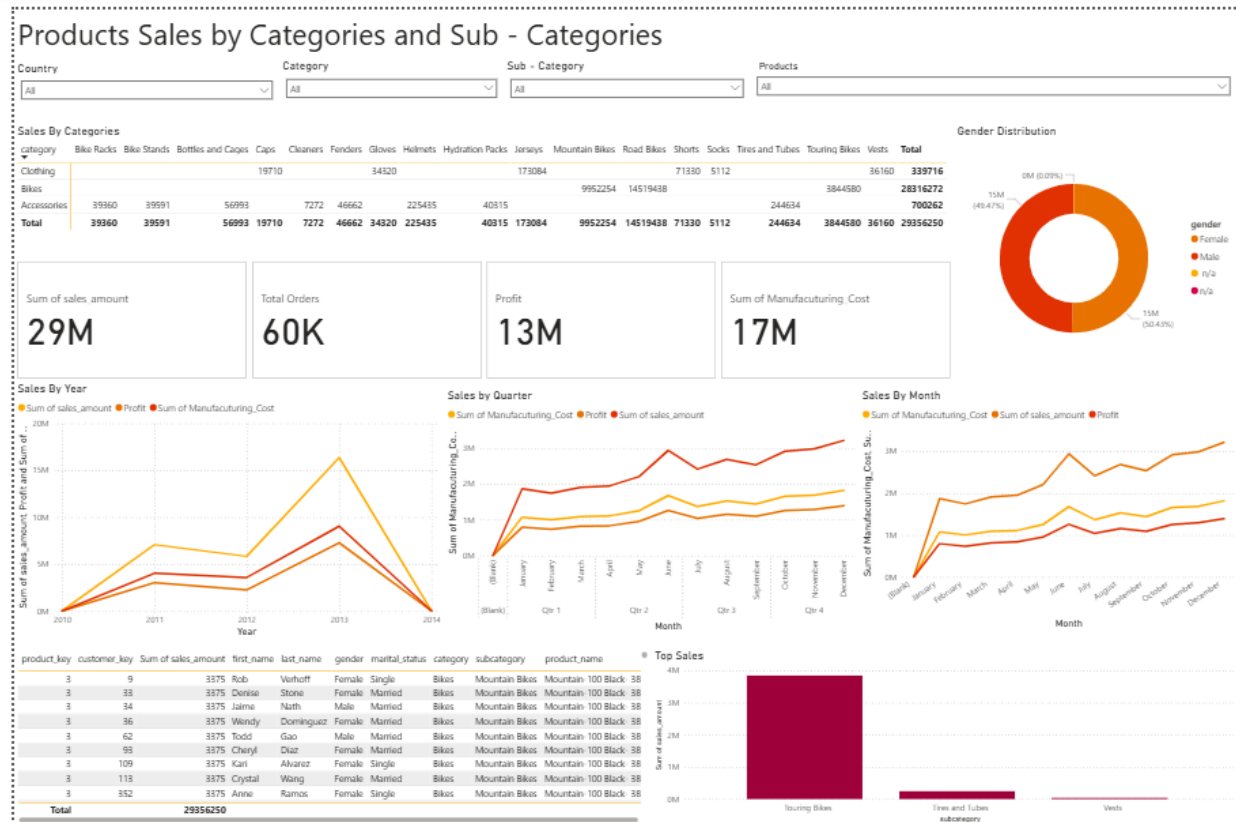
Second Page of BI Report:

Charts Used:

- Slicers - Filtering by All Possibilities including Countries

- Stacked Line Chart - Shows Sales Amount, Profit by Quarters
- Bar Chart – Shows Country Sales
- Pie Chart – Shows Sales Amount by Sub – Categories.
- Cards – Shows Number
- Table – Shows Sales Across all Categories and Sub – Categories
- Bar Chart – Top 10 Sales

Third Page of BI Report:



Charts Used:

- Slicers - Filtering by All Possibilities including Countries, Categories, Sub-Categories, Products
- Stacked Line Chart - Shows Sales Amount, Profit by Year, Quarter, Months
- Bar Chart – Shows Top Sales
- Pie Chart – Gender Sales
- Cards – Shows Sales, Profit, Manufacturing Price, Total Orders
- Table – Shows All the specific details of Customers

End of BI Report

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Submitted To: Hassan Muhuyuddin

Dated: 29-Sep-2025