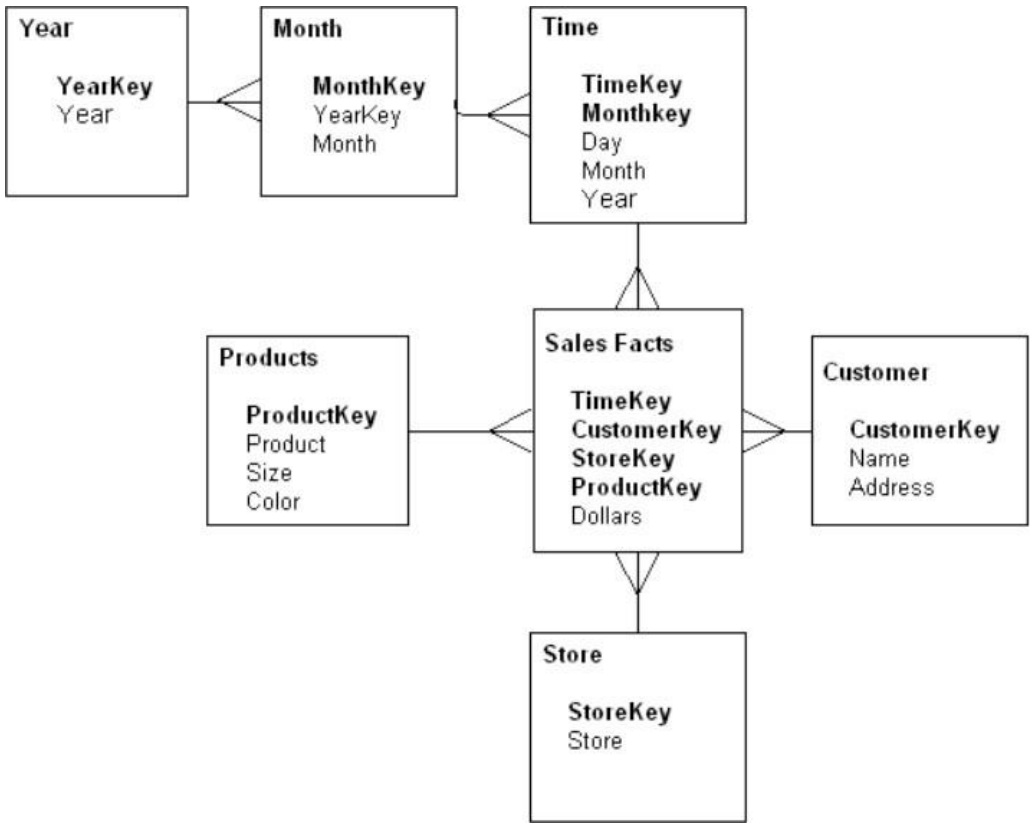
DATAWARE HOUSE ASSESMENT-1

1:For the given Dimensional Modelling , please identify the following



- **How many dimensions and facts are present?**

In the above given dimensional modelling we have one(1) fact table that is "sales fact" and we have six(6) dimensions table that is (Year,Month,Time,Products,customer,Store) are present in the above dimensional model.

- **Please identify the cardinality between each table?**

Dimension Tables	Cardinality Between each Table
Year-to-Month	Cardinality between Year-to-Month is One-to-Many
Month-to-Time	Cardinality between Month-to-Time is One-to-Many
Time-to-Sales Facts	Cardinality between Time-to-Sales Facts is One-to-Many
Products-to-Sales Facts	Cardinality between Products-to-Sales Facts is One-to-Many
Customer-to-Sale Facts	Cardinality between Customer-to-Sales Facts is One-to-Many
Store-to-Sale Facts	Cardinality between Store-to-Sales Facts is One-to-Many

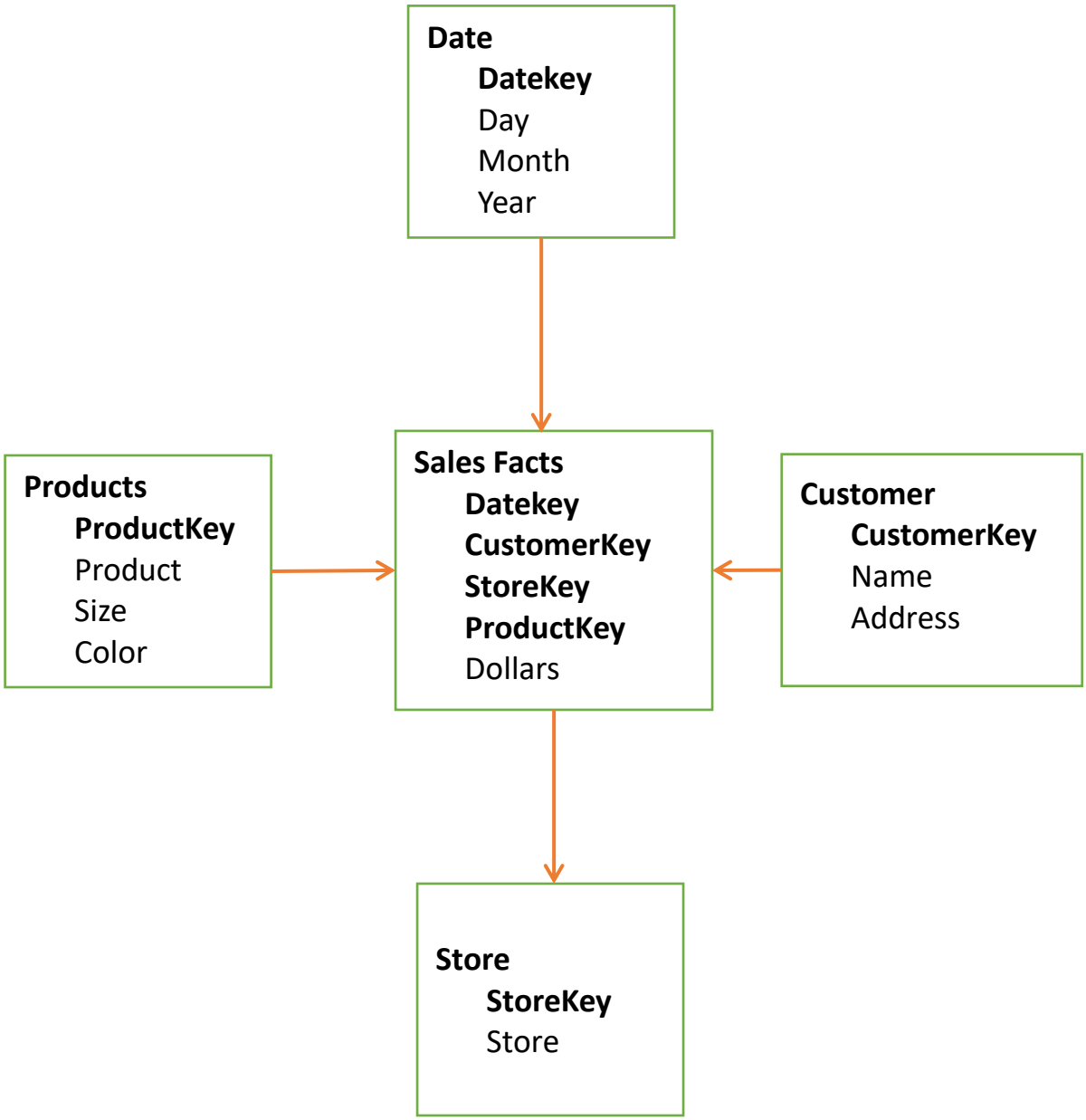
- **How to create a Sales_Aggr fact using the following structure(SQL Statement):**

Sales_Aggr

Year_ID
Customer_Key
Store_key
Product_key
Dollars

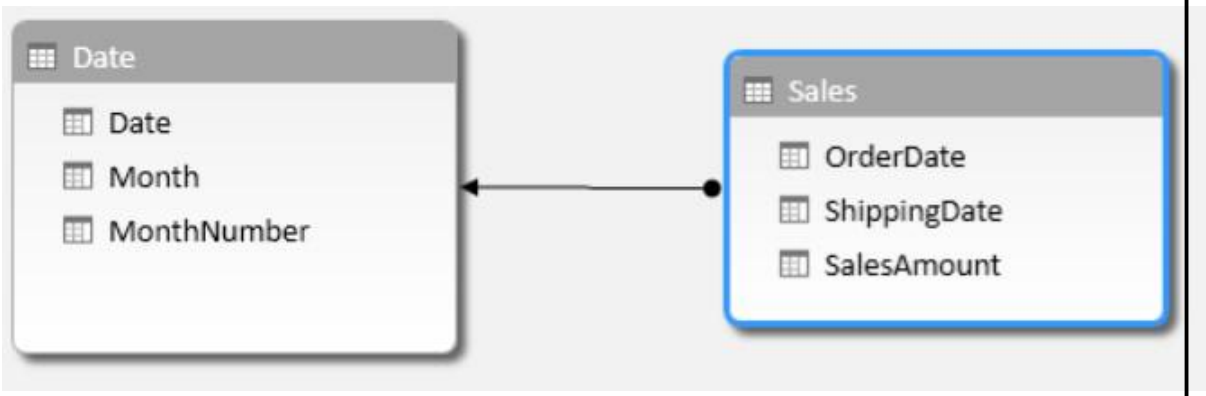
```
CREATE TABLE Sales_Aggr as (select year_key as "year_id",customerKey as "customer_key",StoreKey as "Store_Key",ProductKey as "Product_Key" from year,Products,Customer,Store);

ALTER TABLE Sales_Aggr ADD Dollars double(40);
```

- **Can you please Modify the above snowflake schema to star schema and draw the dimension model,showing all the cardinality?**



Dimension Tables	Cardinality Between each Table
Date-to-Sales Facts	Cardinality between Date-to-Sales Facts is One-to-Many
Products-to-Sales Facts	Cardinality between Products-to-Sales Facts is One-to-Many
Customer-to-Sale Facts	Cardinality between Customer-to-Sales Facts is One-to-Many
Store-to-Sale Facts	Cardinality between Store-to-Sales Facts is One-to-Many

2:For the following dimension Model can you please give an example of Circular Join and how to avoid it:



DATE

Date	Month	MonthNumber
05-02-2019	FEB	02
14-08-2019	AUG	08
23-04-2019	APR	04

SALES

OrderDate	ShippingDate	SalesAmount
15-02-2019	20-02-2019	2000
24-08-2019	30-08-2019	4000
10-04-2019	18-04-2019	6000

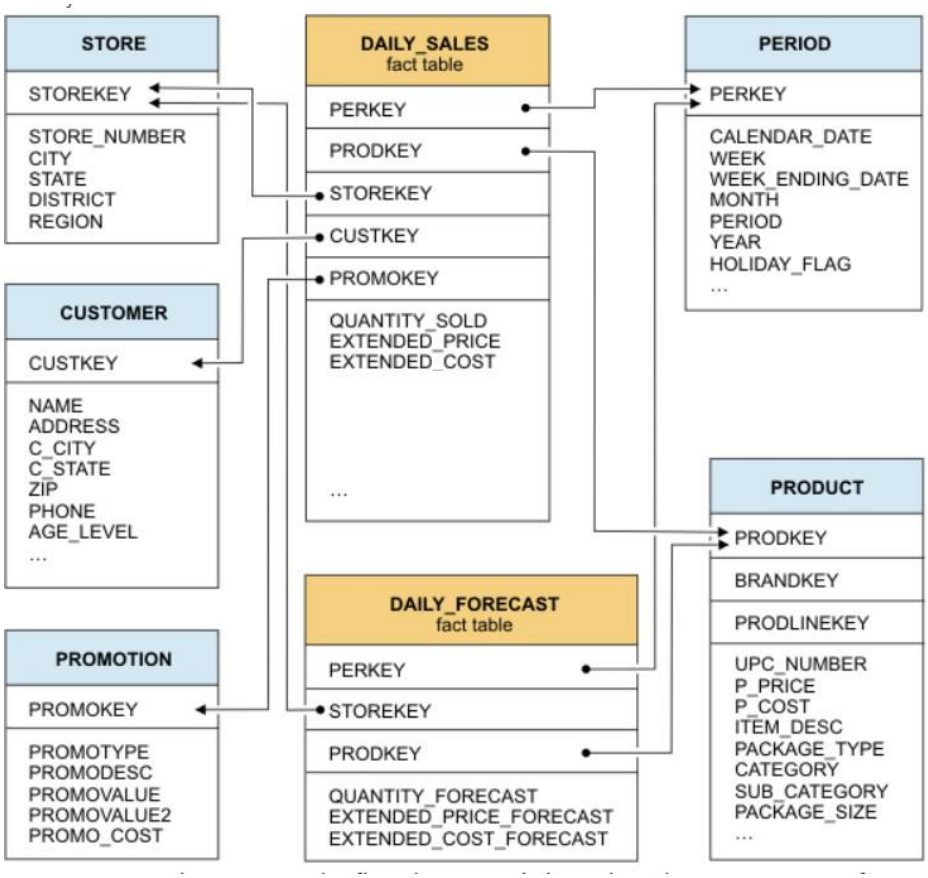
In the above table following Query will Create the circular Join

```
SELECT SAL.OrderDate,SAL.ShippingDate
FROM DATE DA,SALES SAL
WHERE
DA.DATE=SAL.OrderDate AND
DA.DATE =SAL.ShippingDate;
```

In the above table we can remove circular join by using alias to the attributes

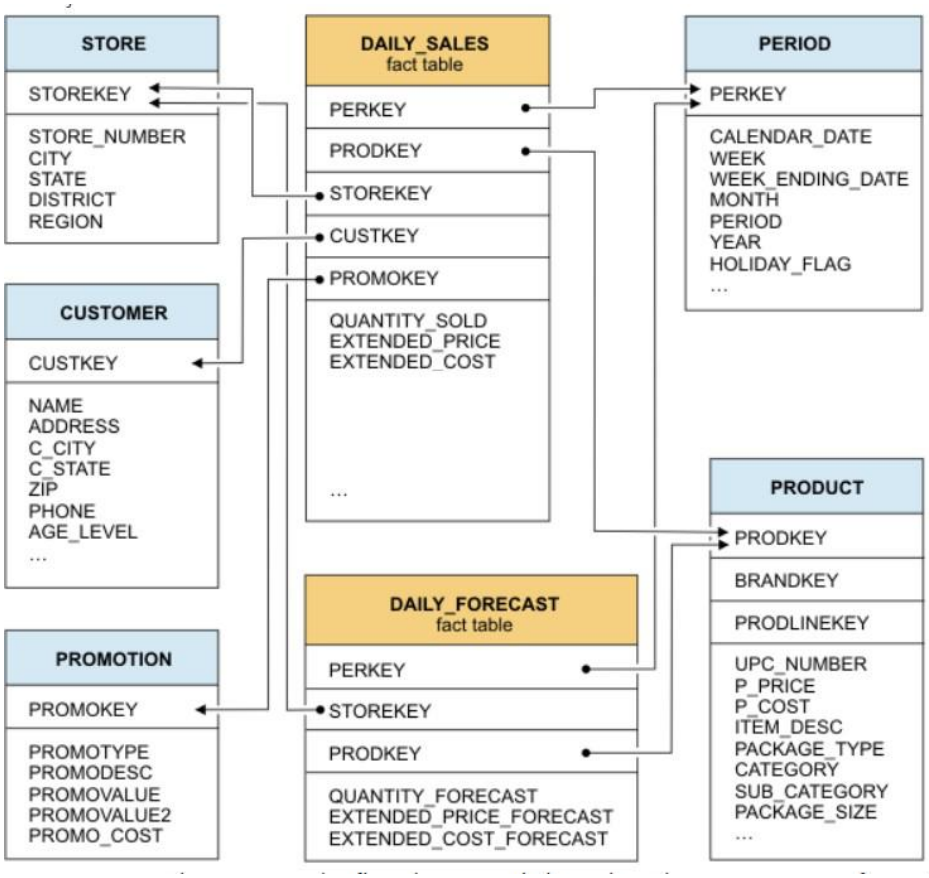
```
SELECT SAL.SalesAmount,SAL.OrderDate,SAL.ShippingDate
FROM Date AS “OrderDate”,Date as “ShippingDate”,
SALES SAL,DATE DAT
WHERE
OrderDate.DATE=SAL.OrderDate AND
ShippingDate.DATE=SAL.ShippingDate;
```

3:For the given Dimension Model, can you please generate a sql to get the total divergence between Quantity sold and Quantity Forecast for the current month for all the stores:




```
SELECT Sum(QUANTITY_SOLD) - Sum(QUANTITY_FORECAST) as “DIVERGENCE” FROM DAILY_SALES,DAILY_FORECAST,PERIOD PER
WHERE
Month(PER.Month)-Month(Current_Date)
GROUP BY STORE_KEY;
```

4:For the above-mentioned dimension model, please identify the conformed and non- conformed dimensions. Additionally, identify the measure types?



In the above diagram shows that

CONFORMED DIMENSIONS:

- ✓ STORE
- ✓ PERIOD
- ✓ PRODUCT

NON-CONFORMED DIMENSIONS:

- ✓ PROMOTION
- ✓ CUSTOMER

MEASURES

- ✧ ADDITIVE:
  - ✓ QUANTITY_SOLD
  - ✓ QUANTITY_FORECAST

- ✧ SEMI-ADDITIVE:
  - ✓ EXTENDED_PRICE
  - ✓ EXTENDED_COST
  - ✓ EXTENDED_PRICE_FORECAST
  - ✓ EXTENDED_COST_FORECAST

- ✧ NON-ADDITIVE:
  - ✓ In this model there is no Non-Additive Measures because it does not consist of any percentages or ratios are not calculated

5:Make a list of differences between DW and OLTP based on Size, Usage, Processing and Data Models.

	DATA WAREHOUSE	ONLINE TRANSCATION PROCESSING
SIZE	Size of Data Warehouse is 10MB-100GB	Size of Online Transaction Processing is 100GB-2TB
USAGE	Data Warehouse uses repetitive usage	Online Transaction Processing uses ad-hoc usage
PROCESSING	Data Warehouse uses Query Processing	Online Transaction uses Transaction Processing
DATA MODELS	Data Warehouse uses E-R Modeling	Online Transaction Processing uses Dimensional Modeling