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## EXPERIMENT NO. 01

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### Problem Statement :

To implement the given scenario into Star and Snowflake schema using the SQL power Architect tool.

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Roll No. : 50

Batch : B2

Date of Execution : 9 July 2019

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### Supermarket Scenario :

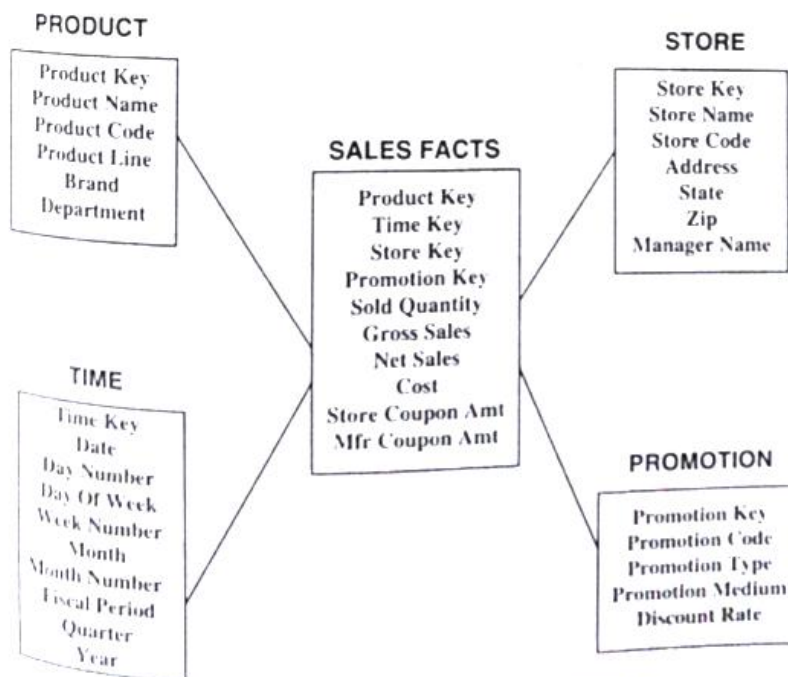
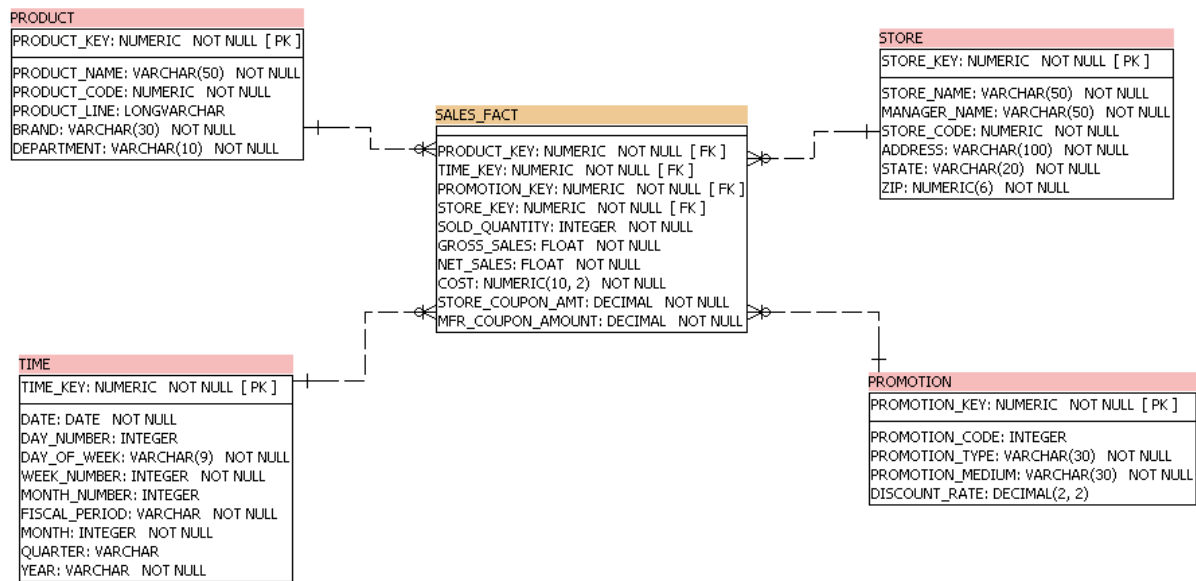


Figure 10-16 STAR schema example - supermarket

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## STAR SCHEMA :



## SQL CODE FOR STAR SCHEMA :

```

CREATE TABLE PROMOTION (
    PROMOTION_KEY NUMERIC NOT NULL,
    PROMOTION_CODE INTEGER,
    PROMOTION_TYPE VARCHAR(30) NOT NULL,
    PROMOTION_MEDIUM VARCHAR(30) NOT NULL,
    DISCOUNT_RATE DECIMAL(2,2),
    CONSTRAINT PROMOTION_KEY PRIMARY KEY (PROMOTION_KEY)
);
    
```

```

CREATE TABLE TIME (
    TIME_KEY NUMERIC NOT NULL,
    DATE DATE NOT NULL,
    DAY_NUMBER INTEGER,
    DAY_OF_WEEK VARCHAR(9) NOT NULL,
    WEEK_NUMBER INTEGER NOT NULL,
    
```

```
        MONTH_NUMBER INTEGER,  
        FISCAL_PERIOD VARCHAR NOT NULL,  
        MONTH INTEGER NOT NULL,  
        QUARTER VARCHAR,  
        YEAR VARCHAR NOT NULL,  
        CONSTRAINT TIME_KEY PRIMARY KEY (TIME_KEY)  
);
```

```
CREATE TABLE STORE (  
    STORE_KEY NUMERIC NOT NULL,  
    STORE_NAME VARCHAR(50) NOT NULL,  
    MANAGER_NAME VARCHAR(50) NOT NULL,  
    STORE_CODE NUMERIC NOT NULL,  
    ADDRESS VARCHAR(100) NOT NULL,  
    STATE VARCHAR(20) NOT NULL,  
    ZIP NUMERIC(6) NOT NULL,  
    CONSTRAINT STORE_KEY PRIMARY KEY (STORE_KEY)  
);
```

```
CREATE TABLE PRODUCT (  
    PRODUCT_KEY NUMERIC NOT NULL,  
    PRODUCT_NAME VARCHAR(50) NOT NULL,  
    PRODUCT_CODE NUMERIC NOT NULL,  
    PRODUCT_LINE LONGVARCHAR,  
    BRAND VARCHAR(30) NOT NULL,  
    DEPARTMENT VARCHAR(10) NOT NULL,  
    CONSTRAINT PRODUCT_KEY PRIMARY KEY (PRODUCT_KEY)  
);
```

```
CREATE TABLE SALES_FACT (  
    PRODUCT_KEY NUMERIC NOT NULL,  
    TIME_KEY NUMERIC NOT NULL,  
    PROMOTION_KEY NUMERIC NOT NULL,
```

```
        STORE_KEY NUMERIC NOT NULL,  
        SOLD_QUANTITY INTEGER NOT NULL,  
        GROSS_SALES FLOAT NOT NULL,  
        NET_SALES FLOAT NOT NULL,  
        COST NUMERIC(10,2) NOT NULL,  
        STORE_COUPON_AMT DECIMAL NOT NULL,  
        MFR_COUPON_AMOUNT DECIMAL NOT NULL  
    );
```

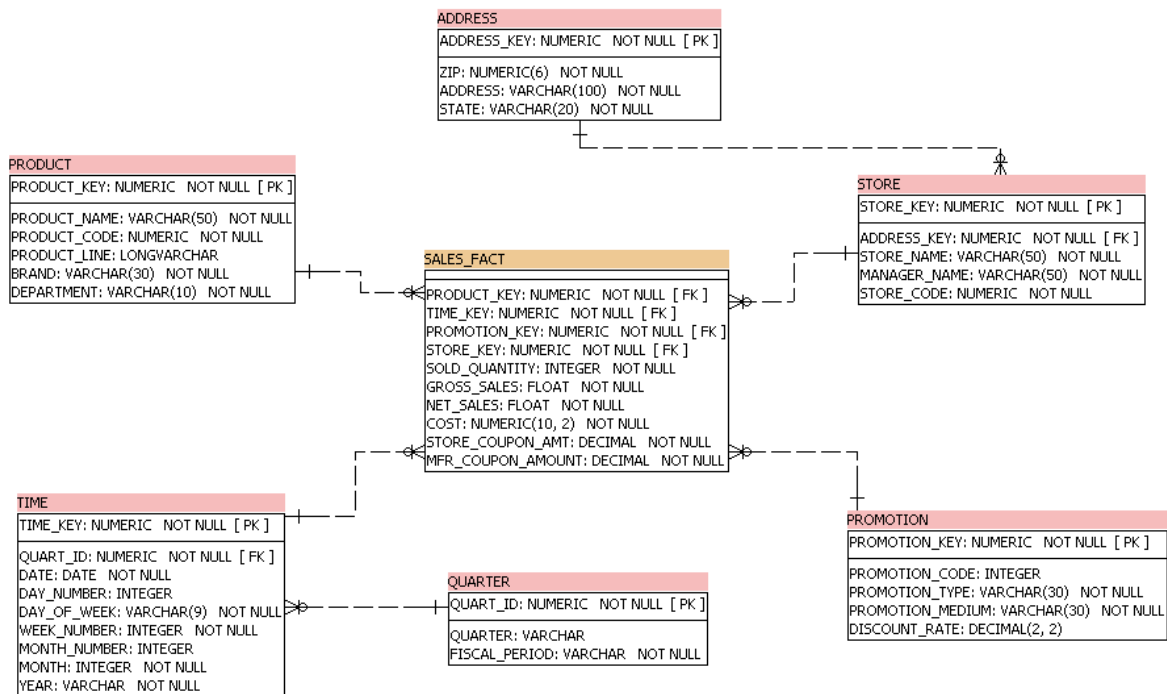
```
ALTER TABLE SALES_FACT ADD CONSTRAINT PROMOTION_SALES_FACT_fk  
FOREIGN KEY (PROMOTION_KEY)  
REFERENCES PROMOTION (PROMOTION_KEY)  
ON DELETE NO ACTION  
ON UPDATE NO ACTION  
NOT DEFERRABLE;
```

```
ALTER TABLE SALES_FACT ADD CONSTRAINT TIME_SALES_FACT_fk  
FOREIGN KEY (TIME_KEY)  
REFERENCES TIME (TIME_KEY)  
ON DELETE NO ACTION  
ON UPDATE NO ACTION  
NOT DEFERRABLE;
```

```
ALTER TABLE SALES_FACT ADD CONSTRAINT STORE_SALES_FACT_fk  
FOREIGN KEY (STORE_KEY)  
REFERENCES STORE (STORE_KEY)  
ON DELETE NO ACTION  
ON UPDATE NO ACTION  
NOT DEFERRABLE;
```

```
ALTER TABLE SALES_FACT ADD CONSTRAINT PRODUCT_SALES_FACT_fk  
FOREIGN KEY (PRODUCT_KEY)  
REFERENCES PRODUCT (PRODUCT_KEY)  
ON DELETE NO ACTION  
ON UPDATE NO ACTION  
NOT DEFERRABLE;
```

## SNOWFLAKE SCHEMA :



## SNOWFLAKE SQL CODE :

```

CREATE TABLE QUARTER (

    QUART_ID NUMERIC NOT NULL,

    QUARTER VARCHAR,

    FISCAL_PERIOD VARCHAR NOT NULL,

    CONSTRAINT QUART_ID PRIMARY KEY (QUART_ID)

);

CREATE TABLE ADDRESS (

    ADDRESS_KEY NUMERIC NOT NULL,

    ZIP NUMERIC(6) NOT NULL,

    ADDRESS VARCHAR(100) NOT NULL,

    STATE VARCHAR(20) NOT NULL,

    CONSTRAINT ADDRESS_KEY PRIMARY KEY (ADDRESS_KEY)

);
    
```

```
CREATE TABLE PROMOTION (  
  
    PROMOTION_KEY NUMERIC NOT NULL,  
  
    PROMOTION_CODE INTEGER,  
  
    PROMOTION_TYPE VARCHAR(30) NOT NULL,  
  
    PROMOTION_MEDIUM VARCHAR(30) NOT NULL,  
  
    DISCOUNT_RATE DECIMAL(2,2),  
  
    CONSTRAINT PROMOTION_KEY PRIMARY KEY (PROMOTION_KEY)  
  
);
```

```
CREATE TABLE TIME (  
  
    TIME_KEY NUMERIC NOT NULL,  
  
    QUART_ID NUMERIC NOT NULL,  
  
    DATE DATE NOT NULL,  
  
    DAY_NUMBER INTEGER,  
  
    DAY_OF_WEEK VARCHAR(9) NOT NULL,  
  
    WEEK_NUMBER INTEGER NOT NULL,  
  
    MONTH_NUMBER INTEGER,  
  
    MONTH INTEGER NOT NULL,  
  
    YEAR VARCHAR NOT NULL,  
  
    CONSTRAINT TIME_KEY PRIMARY KEY (TIME_KEY)  
  
);
```

```
CREATE TABLE STORE (  
  
    STORE_KEY NUMERIC NOT NULL,  
  
    ADDRESS_KEY NUMERIC NOT NULL,  
  
    STORE_NAME VARCHAR(50) NOT NULL,  
  
    MANAGER_NAME VARCHAR(50) NOT NULL,  
  
    STORE_CODE NUMERIC NOT NULL,  
  
    CONSTRAINT STORE_KEY PRIMARY KEY (STORE_KEY)  
  
);
```

```
CREATE TABLE PRODUCT (  
  
    PRODUCT_KEY NUMERIC NOT NULL,
```

```
        PRODUCT_NAME VARCHAR(50) NOT NULL,  
        PRODUCT_CODE NUMERIC NOT NULL,  
        PRODUCT_LINE LONGVARCHAR,  
        BRAND VARCHAR(30) NOT NULL,  
        DEPARTMENT VARCHAR(10) NOT NULL,  
        CONSTRAINT PRODUCT_KEY PRIMARY KEY (PRODUCT_KEY)  
);
```

```
CREATE TABLE SALES_FACT (  
        PRODUCT_KEY NUMERIC NOT NULL,  
        TIME_KEY NUMERIC NOT NULL,  
        PROMOTION_KEY NUMERIC NOT NULL,  
        STORE_KEY NUMERIC NOT NULL,  
        SOLD_QUANTITY INTEGER NOT NULL,  
        GROSS_SALES FLOAT NOT NULL,  
        NET_SALES FLOAT NOT NULL,  
        COST NUMERIC(10,2) NOT NULL,  
        STORE_COUPON_AMT DECIMAL NOT NULL,  
        MFR_COUPON_AMOUNT DECIMAL NOT NULL  
);
```

```
ALTER TABLE TIME ADD CONSTRAINT QUARTER_TIME_fk  
FOREIGN KEY (QUART_ID)  
REFERENCES QUARTER (QUART_ID)  
ON DELETE NO ACTION  
ON UPDATE NO ACTION  
NOT DEFERRABLE;
```

```
ALTER TABLE STORE ADD CONSTRAINT ADDRESS_STORE_fk  
FOREIGN KEY (ADDRESS_KEY)  
REFERENCES ADDRESS (ADDRESS_KEY)  
ON DELETE NO ACTION  
ON UPDATE NO ACTION  
NOT DEFERRABLE;
```

```
ALTER TABLE SALES_FACT ADD CONSTRAINT PROMOTION_SALES_FACT_fk  
FOREIGN KEY (PROMOTION_KEY)  
REFERENCES PROMOTION (PROMOTION_KEY)  
ON DELETE NO ACTION  
ON UPDATE NO ACTION  
NOT DEFERRABLE;
```

```
ALTER TABLE SALES_FACT ADD CONSTRAINT TIME_SALES_FACT_fk  
FOREIGN KEY (TIME_KEY)  
REFERENCES TIME (TIME_KEY)  
ON DELETE NO ACTION  
ON UPDATE NO ACTION  
NOT DEFERRABLE;
```

```
ALTER TABLE SALES_FACT ADD CONSTRAINT STORE_SALES_FACT_fk  
FOREIGN KEY (STORE_KEY)  
REFERENCES STORE (STORE_KEY)  
ON DELETE NO ACTION  
ON UPDATE NO ACTION  
NOT DEFERRABLE;
```

```
ALTER TABLE SALES_FACT ADD CONSTRAINT PRODUCT_SALES_FACT_fk  
FOREIGN KEY (PRODUCT_KEY)  
REFERENCES PRODUCT (PRODUCT_KEY)  
ON DELETE NO ACTION  
ON UPDATE NO ACTION  
NOT DEFERRABLE;
```

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