## **1 Create and fill 3NF objects**

**Step 1: create tables and synonyms**

Example of code:

*DROP TABLE bl\_3nf.ce\_promotion\_categories CASCADE CONSTRAINTS;*

*CREATE TABLE bl\_3nf.ce\_promotion\_categories (*

*promotion\_category\_id NUMBER(38) NOT NULL,*

*promotion\_category\_srcid VARCHAR2(50 CHAR) NOT NULL,*

*promotion\_category\_source\_system VARCHAR2(50 CHAR) NOT NULL,*

*promotion\_category\_source\_entity VARCHAR2(50 CHAR) NOT NULL,*

*promotion\_category VARCHAR2(50 CHAR) NOT NULL,*

*TA\_UPDATE\_DT DATE NOT NULL,*

*TA\_INSERT\_DT DATE NOT NULL*

*);*

*ALTER TABLE bl\_3nf.ce\_promotion\_categories*

*ADD CONSTRAINT ce\_promotion\_category\_pk*

*PRIMARY KEY (promotion\_category\_id );*

*CREATE PUBLIC SYNONYM ce\_promotion\_categories*

*FOR bl\_3nf.ce\_promotion\_categories;*

*DROP TABLE bl\_3nf.ce\_promotions\_scd CASCADE CONSTRAINTS;*

*CREATE TABLE bl\_3nf.ce\_promotions\_scd (*

*promotion\_id NUMBER(38) NOT NULL,*

*promotion\_srcid VARCHAR2(50 CHAR) NOT NULL,*

*promotion\_source\_system VARCHAR2(50 CHAR) NOT NULL,*

*promotion\_source\_entity VARCHAR2(50 CHAR) NOT NULL,*

*promotion\_name VARCHAR2(50 CHAR) NOT NULL,*

*promotion\_category\_id NUMBER(38) NOT NULL,*

*begin\_sop\_DT DATE NOT NULL,*

*end\_eop\_DT DATE NOT NULL,*

*is\_active VARCHAR2(50 char) NOT NULL,*

*cost NUMBER(15,2) NOT NULL,*

*TA\_UPDATE\_DT DATE NOT NULL,*

*TA\_INSERT\_DT DATE NOT NULL*

*);*

*ALTER TABLE bl\_3nf.ce\_promotions\_scd*

*ADD CONSTRAINT ce\_promotions\_scd\_pk*

*PRIMARY KEY ( promotion\_id, begin\_sop\_dt );*

*ALTER TABLE bl\_3nf.ce\_promotions\_scd*

*ADD CONSTRAINT ce\_promotions\_scd\_ce\_promotion\_class\_fk*

*FOREIGN KEY ( promotion\_category\_id )*

*REFERENCES bl\_3nf.ce\_promotion\_categories ( promotion\_category\_id );*

Code for the rest tables in folder scripts

**Step 2: Fill tables**

I have used Merge function. I loaded data from 2 sources for *ce\_channels* and *ce\_customers* tables. For the rest tables I have choose dominant source - personnel\_sales and loaded data only from this source.

Example of code:

*MERGE INTO ce\_channel\_classes ch*

*USING (SELECT DISTINCT*

*channel\_class\_id AS channel\_class\_srcid,*

*'personnel\_sales' AS channel\_class\_source\_system,*

*'src\_channels' AS channel\_class\_source\_entity,*

*COALESCE(channel\_class,'N/A')AS channel\_class*

*FROM SA\_SOURCE\_SYSTEM\_1.src\_channels*

*) t*

*ON (ch.channel\_class\_srcid = t.channel\_class\_srcid*

*AND ch.channel\_class\_source\_system = t.channel\_class\_source\_system*

*AND ch.channel\_class\_source\_entity = t.channel\_class\_source\_entity)*

*WHEN NOT MATCHED THEN*

*INSERT( channel\_class\_id,channel\_class\_srcid, channel\_class\_source\_system, channel\_class\_source\_entity, channel\_class, ta\_update\_dt, ta\_insert\_dt)*

*VALUES(seq\_ce\_channel\_class\_id.NEXTVAL,t.channel\_class\_srcid, t.channel\_class\_source\_system, t.channel\_class\_source\_entity, t.channel\_class, SYSDATE,SYSDATE);*

*MERGE INTO ce\_channel\_classes ch*

*USING (SELECT DISTINCT*

*-1 AS channel\_class\_id,*

*-1 AS channel\_class\_srcid,*

*'personnel\_sales' AS channel\_class\_source\_system,*

*'src\_channels' AS channel\_class\_source\_entity,*

*'N/A' AS channel\_class*

*FROM DUAL*

*) t*

*ON (ch.channel\_class\_srcid = t.channel\_class\_srcid*

*AND ch.channel\_class\_source\_system = t.channel\_class\_source\_system*

*AND ch.channel\_class\_source\_entity = t.channel\_class\_source\_entity)*

*WHEN NOT MATCHED THEN*

*INSERT( channel\_class\_id,channel\_class\_srcid, channel\_class\_source\_system, channel\_class\_source\_entity, channel\_class, ta\_update\_dt, ta\_insert\_dt)*

*VALUES(t.channel\_class\_id,t.channel\_class\_srcid, t.channel\_class\_source\_system, t.channel\_class\_source\_entity, t.channel\_class, SYSDATE,SYSDATE);*

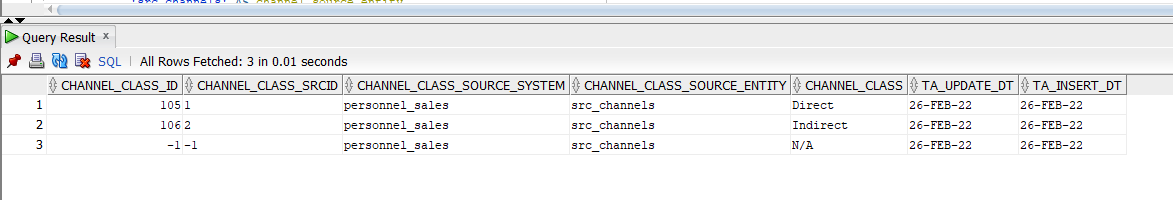
*SELECT \* FROM ce\_channel\_classes;*

*commit;*

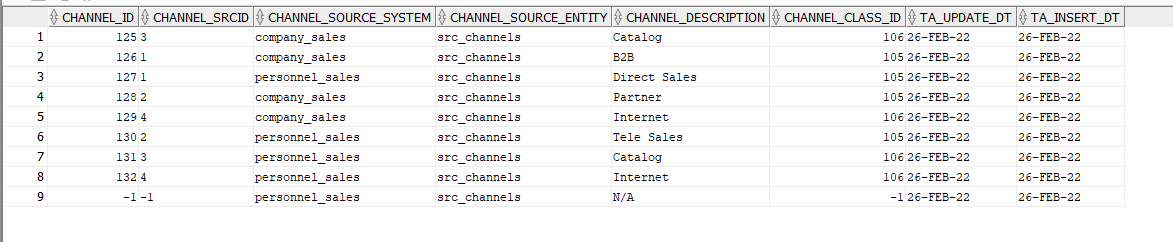
Code for the rest tables in folder scripts

**Step3: results**

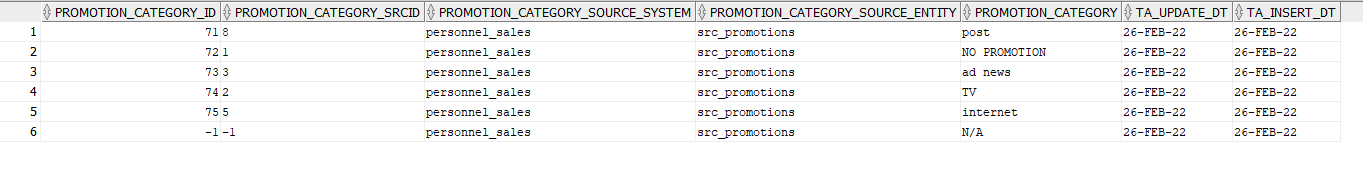
SELECT \* FROM ce\_channel\_classes;



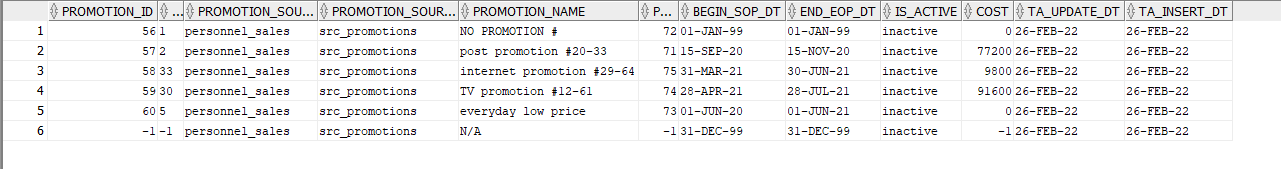
SELECT \* FROM ce\_channels;



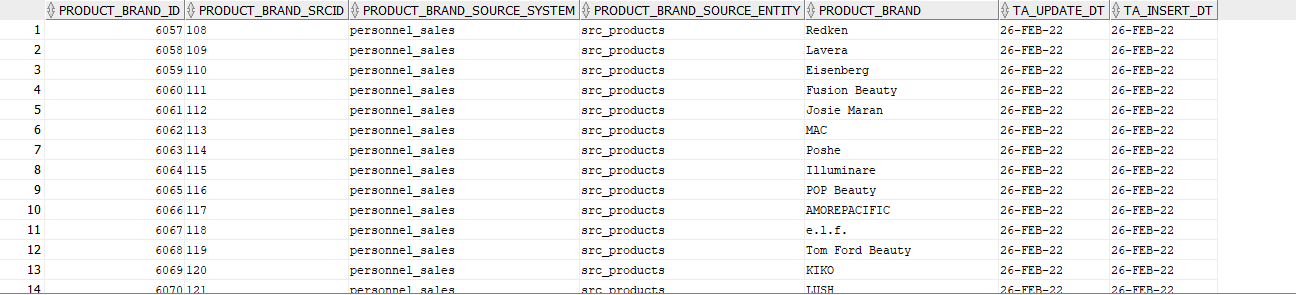
SELECT \* FROM ce\_promotion\_categories;



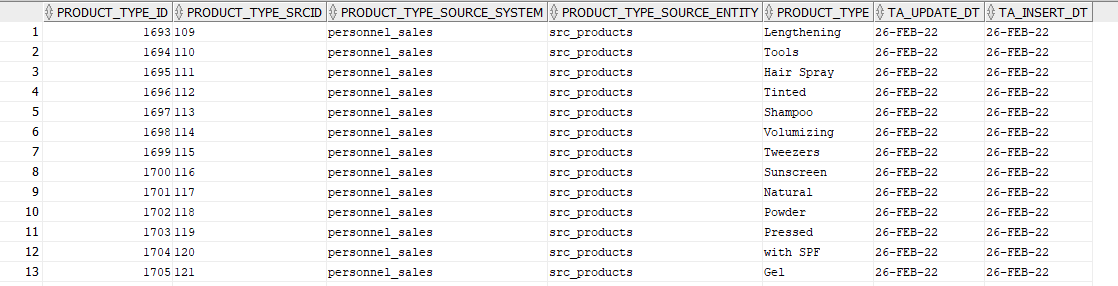
SELECT \* FROM ce\_promotions\_scd;



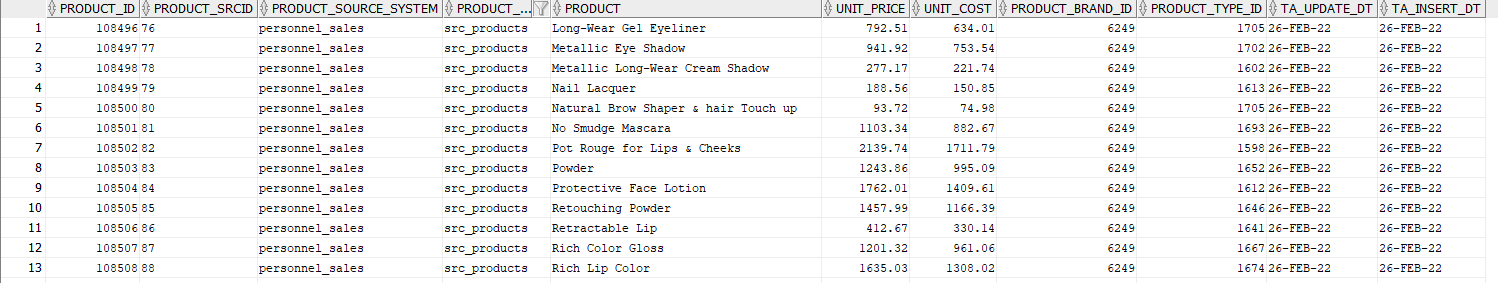
SELECT \* FROM ce\_brands;



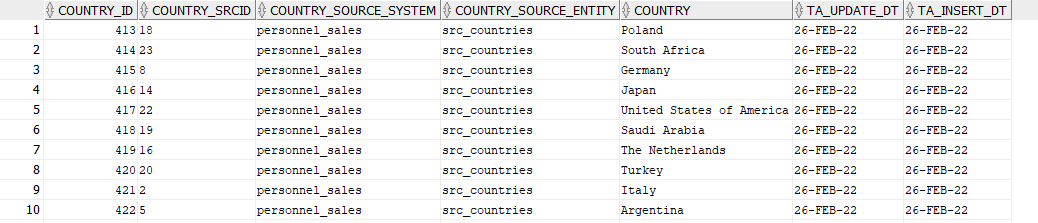
SELECT \* FROM ce\_product\_types;



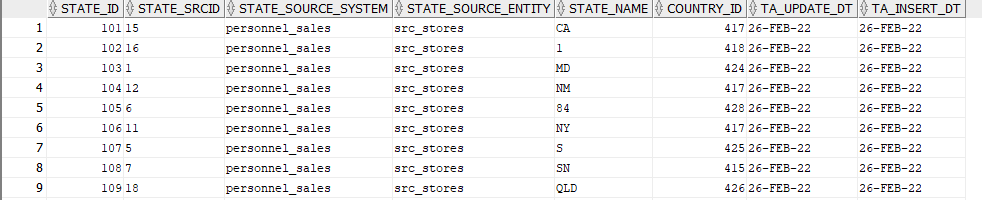
SELECT \* FROM ce\_products;



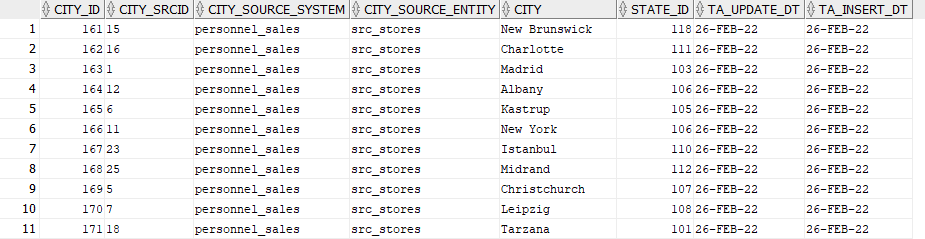
SELECT \* FROM ce\_countries;



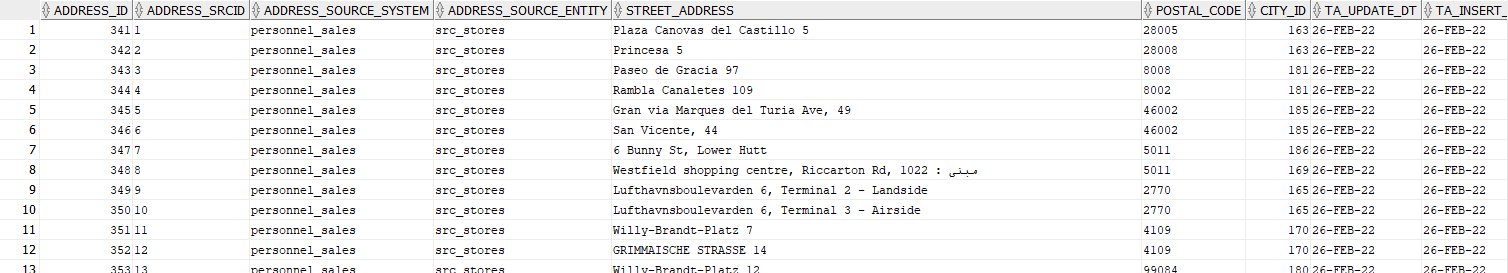
SELECT \* FROM ce\_states;



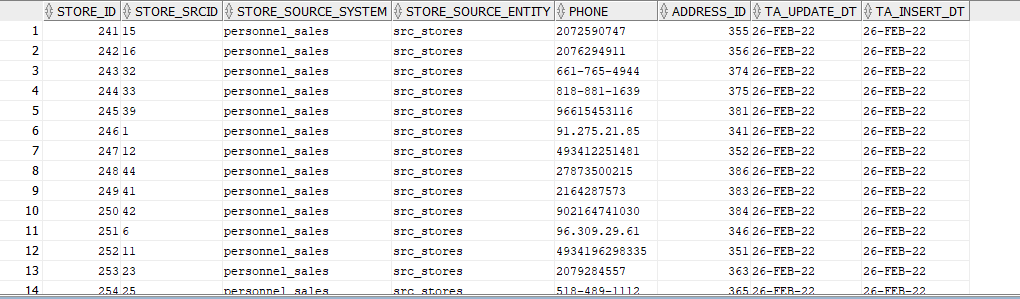
SELECT \* FROM ce\_cities;



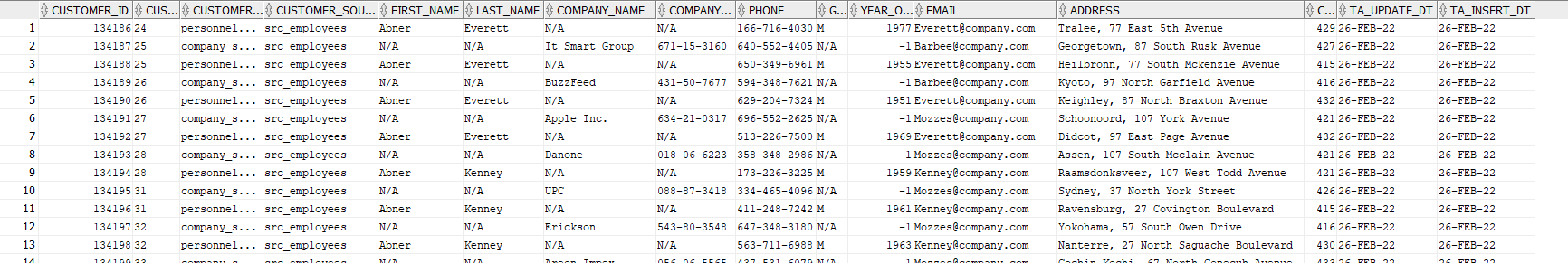
SELECT \* FROM ce\_addresses;



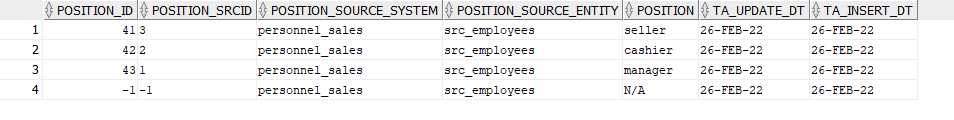
SELECT \* FROM ce\_stores;



SELECT \* FROM ce\_customers;



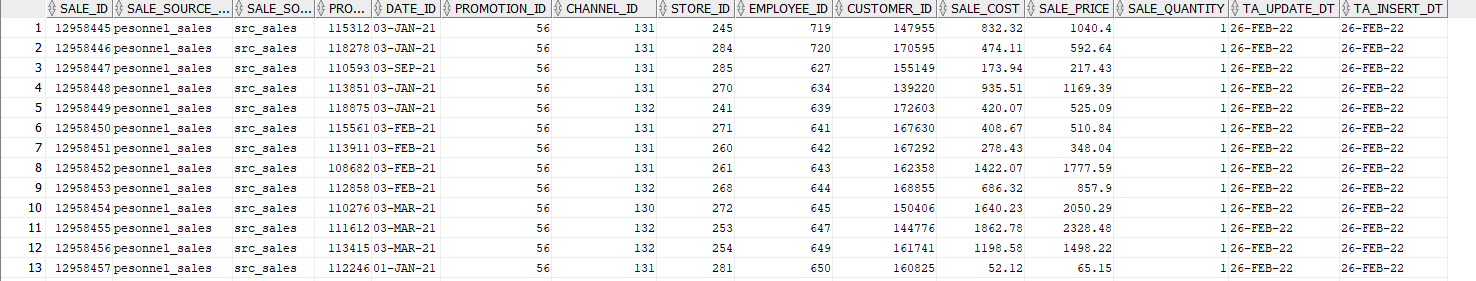
SELECT \* FROM ce\_positions;



SELECT \* FROM ce\_employees;



SELECT \* FROM ce\_sales;



## **1 Create objects for star schema**

**Step 1: create objects**

*drop table dim\_channels CASCADE CONSTRAINTS;*

*CREATE TABLE dim\_channels (*

*channel\_surr\_id NUMBER(38) NOT NULL,*

*channel\_id VARCHAR2(50) NOT NULL,*

*source\_system VARCHAR2(50) NOT NULL,*

*source\_entity VARCHAR2(50) NOT NULL,*

*channel\_description VARCHAR2(50) NOT NULL,*

*channel\_class\_id NUMBER(38) NOT NULL,*

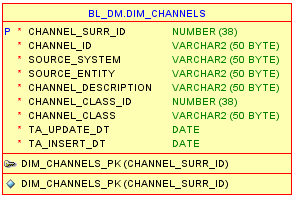
*channel\_class VARCHAR2(50) NOT NULL,*

*ta\_update\_dt DATE NOT NULL,*

*ta\_insert\_dt DATE NOT NULL*

*);*

*ALTER TABLE dim\_channels ADD CONSTRAINT dim\_channels\_pk PRIMARY KEY ( channel\_surr\_id );*

**

*drop table dim\_customers CASCADE CONSTRAINTS;*

*CREATE TABLE dim\_customers (*

*customer\_surr\_id NUMBER(38) NOT NULL,*

*customer\_id VARCHAR2(50) NOT NULL,*

*source\_system VARCHAR2(50) NOT NULL,*

*source\_entity VARCHAR2(50) NOT NULL,*

*first\_name VARCHAR2(50) NOT NULL,*

*last\_name VARCHAR2(50) NOT NULL,*

*company\_name VARCHAR2(50) NOT NULL,*

*phone VARCHAR2(50) NOT NULL,*

*company\_number VARCHAR2(50) NOT NULL,*

*gender VARCHAR2(50) NOT NULL,*

*yeart\_of\_birth NUMBER(38) NOT NULL,*

*email VARCHAR2(50) NOT NULL,*

*country VARCHAR2(50) NOT NULL,*

*country\_id NUMBER(38) NOT NULL,*

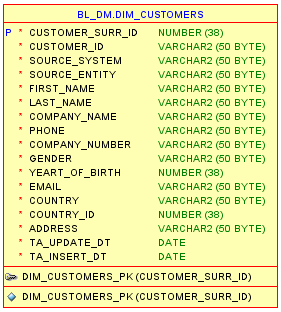
*address VARCHAR2(50) NOT NULL,*

*ta\_update\_dt DATE NOT NULL,*

*ta\_insert\_dt DATE NOT NULL*

*);*

*ALTER TABLE dim\_customers ADD CONSTRAINT dim\_customers\_pk PRIMARY KEY ( customer\_surr\_id );*

**

*drop table dim\_employees CASCADE CONSTRAINTS;*

*CREATE TABLE dim\_employees (*

*employee\_surr\_id NUMBER(38) NOT NULL,*

*employee\_id VARCHAR2(50) NOT NULL,*

*source\_system VARCHAR2(50) NOT NULL,*

*source\_entity VARCHAR2(50) NOT NULL,*

*first\_name VARCHAR2(50) NOT NULL,*

*last\_name VARCHAR2(50) NOT NULL,*

*day\_of\_birthday\_dt DATE NOT NULL,*

*position\_id NUMBER(38) NOT NULL,*

*position VARCHAR2(50) NOT NULL,*

*phone VARCHAR2(50) NOT NULL,*

*email VARCHAR2(50) NOT NULL,*

*address VARCHAR2(50) NOT NULL,*

*country\_id NUMBER(38) NOT NULL,*

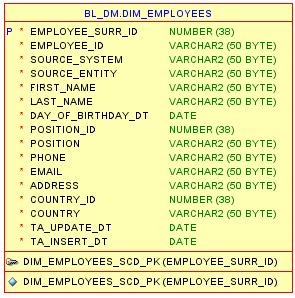
*country VARCHAR2(50) NOT NULL,*

*ta\_update\_dt DATE NOT NULL,*

*ta\_insert\_dt DATE NOT NULL*

*);*

*ALTER TABLE dim\_employees ADD CONSTRAINT dim\_employees\_scd\_pk PRIMARY KEY ( employee\_surr\_id );*

**

*drop table dim\_products CASCADE CONSTRAINTS;*

*CREATE TABLE dim\_products (*

*product\_surr\_id NUMBER(38) NOT NULL,*

*product\_id VARCHAR2(50) NOT NULL,*

*source\_system VARCHAR2(50) NOT NULL,*

*source\_entity VARCHAR2(50) NOT NULL,*

*product\_name VARCHAR2(50) NOT NULL,*

*product\_brand\_id NUMBER(38) NOT NULL,*

*product\_brand VARCHAR2(50) NOT NULL,*

*product\_type\_id NUMBER(38) NOT NULL,*

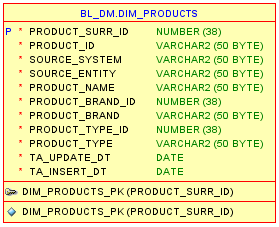
*product\_type VARCHAR2(50) NOT NULL,*

*ta\_update\_dt DATE NOT NULL,*

*ta\_insert\_dt DATE NOT NULL*

*);*

*ALTER TABLE dim\_products ADD CONSTRAINT dim\_products\_pk PRIMARY KEY ( product\_surr\_id );*

**

*drop table dim\_promotions\_scd CASCADE CONSTRAINTS;*

*CREATE TABLE dim\_promotions\_scd (*

*promotion\_surr\_id NUMBER(38) NOT NULL,*

*promotion\_id VARCHAR2(50) NOT NULL,*

*source\_system VARCHAR2(50) NOT NULL,*

*source\_entity VARCHAR2(50) NOT NULL,*

*promotion\_name VARCHAR2(50) NOT NULL,*

*promotion\_category\_id NUMBER(38) NOT NULL,*

*promotion\_categoty VARCHAR2(50) NOT NULL,*

*begin\_sop\_dt DATE NOT NULL,*

*end\_eop\_dt DATE NOT NULL,*

*is\_active VARCHAR2(50) NOT NULL,*

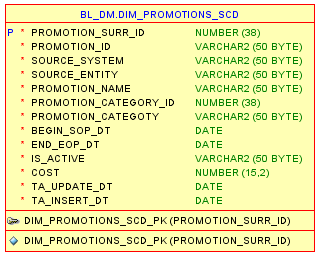
*cost NUMBER(15, 2) NOT NULL,*

*ta\_update\_dt DATE NOT NULL,*

*ta\_insert\_dt DATE NOT NULL*

*);*

*ALTER TABLE dim\_promotions\_scd ADD CONSTRAINT dim\_promotions\_scd\_pk PRIMARY KEY ( promotion\_surr\_id );*

**

*drop table dim\_stores CASCADE CONSTRAINTS;*

*CREATE TABLE dim\_stores (*

*store\_surr NUMBER(38) NOT NULL,*

*store\_id VARCHAR2(50) NOT NULL,*

*source\_system VARCHAR2(50) NOT NULL,*

*source\_entity VARCHAR2(50) NOT NULL,*

*phone VARCHAR2(50) NOT NULL,*

*street\_address VARCHAR2(50) NOT NULL,*

*postal\_code VARCHAR2(50) NOT NULL,*

*city\_id NUMBER(38) NOT NULL,*

*city VARCHAR2(50) NOT NULL,*

*state\_id NUMBER(38) NOT NULL,*

*state VARCHAR2(50) NOT NULL,*

*country\_id NUMBER(38) NOT NULL,*

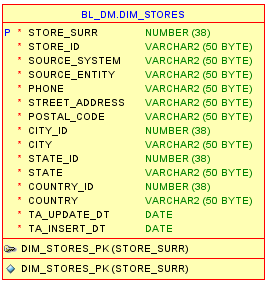
*country VARCHAR2(50) NOT NULL,*

*ta\_update\_dt DATE NOT NULL,*

*ta\_insert\_dt DATE NOT NULL*

*);*

*ALTER TABLE dim\_stores ADD CONSTRAINT dim\_stores\_pk PRIMARY KEY ( store\_surr );*

**

*drop table fct\_sales CASCADE CONSTRAINTS;*

*CREATE TABLE fct\_sales (*

*source\_system VARCHAR2(50) NOT NULL,*

*soutce\_entity VARCHAR2(50) NOT NULL,*

*product\_surr\_id NUMBER(38) NOT NULL,*

*promotion\_surr\_id NUMBER(38) NOT NULL,*

*channel\_surr\_id NUMBER(38) NOT NULL,*

*store\_surr\_id NUMBER(38) NOT NULL,*

*employee\_surr\_id NUMBER(38) NOT NULL,*

*customer\_surr\_id NUMBER(38) NOT NULL,*

*date\_id DATE NOT NULL,*

*unit\_cost NUMBER(15, 2),*

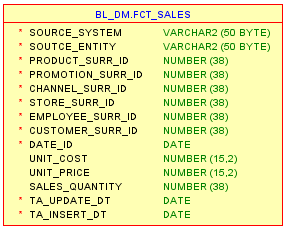
*unit\_price NUMBER(15, 2),*

*sales\_quantity NUMBER(38),*

*ta\_update\_dt DATE NOT NULL,*

*ta\_insert\_dt DATE NOT NULL*

*);*

****