Dimensions in Oracle SQL: star

Time
date
day_of_week
holiday_flag
calendar_month
calendar_month_number_in_year
calendar_year
fiscal_month
fiscal_year

Dimension definition

```
CREATE DIMENSION date_dim
  LEVEL day IS time.date
  LEVEL month IS time.calendar_month
  LEVEL year IS time.calendar_year
  LEVEL fis_month IS time.fiscal_month
  LEVEL fis_year IS time.fiscal_year
  HIERARCHY cal_rollup (
    day CHILD OF
    month CHILD OF
    year
  )
  HIERARCHY fis_rollup (
    day CHILD OF
    fis_month CHILD OF
    fis_quarter
  )
  ATTRIBUTE day DETERMINES
    (day_of_week, holiday_flag)
  ATTRIBUTE month DETERMINES
    (calendar_month_number_in_year)
;
```


Dimensions in Oracle SQL: snowflake

Products
prod_key (PK)
prod_name
prod_desc
category_key (FK)

Categories
cat_key (PK)
cat_name
cat_desc

Dimension definition

```
CREATE DIMENSION products_dim
  LEVEL product IS products.prod_key
  LEVEL category IS categories.cat_key
  HIERARCHY prod_rollup (
    product CHILD OF
    category
  JOIN KEY (product.category_key) REFERENCES category
  )
  ATTRIBUTE product DETERMINES
    (prod_name, prod_desc)
  ATTRIBUTE category DETERMINES
    (cat_name,cat_desc)
;
```


Dimensions in Oracle SQL: snowflake (2)

Products
prod_key (PK)
prod_name
prod_desc
subcategory_key (FK)
undividedcategory_key

SubCategories
subcat_key (PK)
subcat_name
category_key

Categories
cat_key (PK)
cat_name
cat_desc

Dimension definition (Oracle)

```
CREATE DIMENSION products_dim
  LEVEL product IS products.prod_key
  LEVEL subcategory IS subcategories.subcat_key SKIP WHEN NULL
  LEVEL category IS categories.cat_key
  HIERARCHY prod_rollup (
    product CHILD OF
    category
  JOIN KEY (products.subcategory_key) REFERENCES subcategory
  JOIN KEY (subcategories.category_key) REFERENCES category
  JOIN KEY (product.category_key) REFERENCES category
  )
;
```


Dimensions in Oracle SQL

Modifying dimensions (Oracle)

```
ALTER DIMENSION products_dim DROP HIERARCHY prod_rollup;
ALTER DIMENSION products_dim ADD LEVEL brand IS categories.brand;
ALTER DIMENSION products_dim COMPILE; -- to re-validate
DROP DIMENSION products_dim;
...
```

Dimensions in Oracle SQL: usage

Dimensions are viewed in Oracle as constraints, used for query rewriting.

Validating dimensions

```
BEGIN
  DBMS_DIMENSION.VALIDATE_DIMENSION(
  dimension => 'products_dim',
  incremental => false,
  check_nulls => true,
  statement_id=>'validation run 1');
END;
/
```

- incremental=true: validate new rows only
- check_nulls=true: NULLS occur only in columns with level 'SKIP WHEN NULL'
- statement_id: used to distinguish the rows created in table `dimension_exceptions`

Dimensions in Oracle SQL: usage

Viewing dimension information

```
EXECUTE DBMS_DIMENSION.DESCRIBE_DIMENSION('products_dim');
```