

DADA BI
Assignment 5 – SQL Queries

Name – Krisha Lakhani

NUID - 002334794

USE ROLE MEDIA_ROLE;

USE DATABASE MEDIA_DB;

CREATE OR REPLACE SCHEMA DW;

USE SCHEMA DW;

SELECT CURRENT_DATE(), CURRENT_TIMESTAMP();

CREATE OR REPLACE TABLE DW.DATE_DIM (

DATE_KEY NUMBER(10) PRIMARY KEY,

FULL_DATE DATE,

DAY_NUM NUMBER(3),

WEEKDAY_ABBR VARCHAR(3),

WEEKDAY_NUM NUMBER(1),

DAY_OF_YEAR_NUM NUMBER(3),

WEEK_OF_YEAR NUMBER(2),

MONTH_NUM NUMBER(2),

MONTH_ABBR VARCHAR(3),

QUARTER_NUM NUMBER(1),

QUARTER_NAME VARCHAR(3),

YEAR_NUM NUMBER(4),

FIRST_DAY_OF_MONTH DATE,

LAST_DAY_OF_MONTH DATE,

IS_WEEKEND VARCHAR(1)

);

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```
CREATE OR REPLACE TABLE DW.TIME_DIM (  
    TIME_KEY NUMBER(4) PRIMARY KEY,  
    HOUR_NUM INTEGER,  
    MINUTE_NUM INTEGER,  
    TIME_24_HR STRING  
);
```

```
CREATE OR REPLACE TABLE DW.CUSTOMER_DIM(  
    CUSTOMER_KEY NUMBER(10) IDENTITY(1,1) PRIMARY KEY,  
    CUSTOMER_ID NUMBER(10),  
    FIRST_NAME VARCHAR(100),  
    LAST_NAME VARCHAR(100),  
    COMPANY_NAME VARCHAR(100),  
    CITY VARCHAR(100),  
    STATE VARCHAR(50),  
    COUNTRY VARCHAR(50),  
    ZIP_CODE VARCHAR(10),  
    EMPLOYEE_ID NUMBER(10),  
    IS_ACTIVE VARCHAR(1) DEFAULT 'Y',  
    SOURCE_ID VARCHAR(50),  
    DATE_TO_WAREHOUSE DATETIME DEFAULT CURRENT_TIMESTAMP()  
);  
  
CREATE OR REPLACE SEQUENCE CUSTOMER_DIM_SEQ START = 1 INCREMENT = 1;
```

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```
CREATE OR REPLACE TABLE DW.ARTIST_DIM(  
  ARTIST_KEY NUMBER(10) DEFAULT ARTIST_DIM_SEQ.NEXTVAL PRIMARY KEY,  
  ARTIST_ID NUMBER(10),  
  MEDIA_DB.DW.CUSTOMER_DIM  
  ARTIST_NAME VARCHAR(150),  
  SOURCE_ID VARCHAR(50),  
  DATE_TO_WAREHOUSE DATETIME DEFAULT CURRENT_TIMESTAMP()  
);  
CREATE OR REPLACE SEQUENCE ARTIST_DIM_SEQ START = 1 INCREMENT = 1;
```

```
CREATE TABLE DW.SALES_FACT(  
  SALES_KEY NUMBER(10) PRIMARY KEY,  
  CUSTOMER_KEY NUMBER(10),  
  INVOICE_ID NUMBER(10),  
  
  --SALE_DATE DATETIME,  
  DATE_DIM_KEY NUMBER(10),  
  TOTAL_SALE_AMT NUMBER(10,2),  
  SOURCE_ID NUMBER(10),  
  DATE_TO_WAREHOUSE DATETIME DEFAULT CURRENT_TIMESTAMP()  
);  
--CLUSTER BY (SALE_DATE);  
CREATE OR REPLACE SEQUENCE SALES_FACT_SEQ START = 1 INCREMENT = 1;
```

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-- validation

SHOW TABLES IN SCHEMA DW;

--2

CREATE OR REPLACE SCHEMA DW;

CREATE OR REPLACE SCHEMA STAGE;

CREATE OR REPLACE TABLE STAGE.Artist

(

ArtistId INTEGER,

Name STRING(120),

Created_By STRING(100),

Created_Dt date

);

CREATE OR REPLACE TABLE STAGE.Genre

(

GenreId INTEGER,

Name STRING(120),

Created_By STRING(100),

Created_Dt date);

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CREATE OR REPLACE TABLE STAGE.Album(

AlbumId INTEGER,

Title STRING(160),

ArtistId INTEGER,

Created_By STRING(100),

Created_Dt DATE);

CREATE OR REPLACE TABLE STAGE.Customer(

CustomerId INTEGER,

FirstName STRING(40) ,

LastName STRING(20) ,

Company STRING(80),

Address STRING(70),

City STRING(40),

State STRING(40),

Country STRING(40),

PostalCode STRING(10),

Phone STRING(24),

Fax STRING(24),

Email STRING(60),

SupportRepId INTEGER,

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Created_By STRING(100),
Created_Dt DATE
);

CREATE OR REPLACE TABLE STAGE.Invoice(

InvoiceId INTEGER ,
CustomerId INTEGER ,
InvoiceDate DATETIME ,
BillingAddress STRING(70),
BillingCity STRING(40),
BillingState STRING(40),
BillingCountry STRING(40),
BillingPostalCode STRING(10),
Total NUMBER(10, 2) ,
Created_By STRING(100),
Created_Dt DATE
);

CREATE OR REPLACE TABLE STAGE.InvoiceLine(

InvoiceLineId INTEGER,
InvoiceId INTEGER ,
TrackId INTEGER ,

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UnitPrice NUMBER(10, 2) ,

Quantity INTEGER ,

Created_By STRING(100),

Created_Dt DATE

);

--Validation

SHOW TABLES IN SCHEMA STAGE;

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DATE_DIM

USE ROLE MEDIA_ROLE;

USE WAREHOUSE MEDIA_WH;

USE DATABASE MEDIA_DB;

USE SCHEMA DW;

INSERT INTO DATE_DIM

(

DATE_KEY,

FULL_DATE,

DAY_NUM,

WEEKDAY_ABBR,

WEEKDAY_NUM,

DAY_OF_YEAR_NUM,

WEEK_OF_YEAR,

MONTH_NUM,

MONTH_ABBR,

QUARTER_NUM,

QUARTER_NAME,

YEAR_NUM,

FIRST_DAY_OF_MONTH,

LAST_DAY_OF_MONTH,

IS_WEEKEND

)

SELECT

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```
    ROW_NUMBER() OVER (ORDER BY SEQ4()) AS DATE_KEY,

    DATEADD(DAY, SEQ4(), '2010-01-01') AS FULL_DATE,

    EXTRACT(DAY FROM DATEADD(DAY, SEQ4(), '2010-01-01')) AS DAY_NUM,

    TO_VARCHAR(TO_CHAR(DATEADD(DAY, SEQ4(), '2010-01-01'), 'DY')) AS
WEEKDAY_ABBR,

    EXTRACT(DAYOFWEEK FROM DATEADD(DAY, SEQ4(), '2010-01-01')) AS
WEEKDAY_NUM,

    EXTRACT(DOY FROM DATEADD(DAY, SEQ4(), '2010-01-01')) AS
DAY_OF_YEAR_NUM,

    EXTRACT(WEEK FROM DATEADD(DAY, SEQ4(), '2010-01-01')) AS WEEK_OF_YEAR,

    EXTRACT(MONTH FROM DATEADD(DAY, SEQ4(), '2010-01-01')) AS MONTH_NUM,

    TO_VARCHAR(TO_CHAR(DATEADD(DAY, SEQ4(), '2010-01-01'), 'MON')) AS
MONTH_ABBR,

    EXTRACT(QUARTER FROM DATEADD(DAY, SEQ4(), '2010-01-01')) AS
QUARTER_NUM,

    CONCAT('Q', EXTRACT(QUARTER FROM DATEADD(DAY, SEQ4(), '2010-01-01'))) AS
QUARTER_NAME,

    EXTRACT(YEAR FROM DATEADD(DAY, SEQ4(), '2010-01-01')) AS YEAR_NUM,

    DATE_TRUNC('MONTH', DATEADD(DAY, SEQ4(), '2010-01-01')) AS
FIRST_DAY_OF_MONTH,

    LAST_DAY(DATEADD(DAY, SEQ4(), '2010-01-01')) AS LAST_DAY_OF_MONTH,

    CASE

        WHEN DAYOFWEEK(DATEADD(DAY, SEQ4(), '2010-01-01')) IN (6,7) THEN 'Y'

        ELSE 'N'

    END AS IS_WEEKEND

FROM TABLE(GENERATOR(ROWCOUNT => 7300)); -- ~20 years
```

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TIME_DIM

USE ROLE MEDIA_ROLE;

USE WAREHOUSE MEDIA_WH;

USE DATABASE MEDIA_DB;

USE SCHEMA DW;

-- Load hour + minute combinations

INSERT INTO TIME_DIM (TIME_KEY, HOUR_NUM, MINUTE_NUM, TIME_24_HR)

SELECT

(HOUR_NUM * 100) + MINUTE_NUM AS TIME_KEY,

HOUR_NUM,

MINUTE_NUM,

LPAD(HOUR_NUM, 2, '0') || ':' || LPAD(MINUTE_NUM, 2, '0') AS TIME_24_HR

FROM (

SELECT HOUR_NUM, MINUTE_NUM

FROM TABLE(GENERATOR(ROWCOUNT => 1440)) g,

LATERAL (

SELECT FLOOR(ROW_NUMBER() OVER (ORDER BY SEQ4()) / 60) AS

HOUR_NUM,

MOD(ROW_NUMBER() OVER (ORDER BY SEQ4()), 60) AS MINUTE_NUM

)

)

WHERE HOUR_NUM < 24;

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The screenshot shows the Snowflake SQL Editor interface. The main query window displays the following SQL code:

```
1  USE ROLE MEDIA_ROLE;  
2  USE WAREHOUSE MEDIA_WH;  
3  USE DATABASE MEDIA_DB;  
4  USE SCHEMA DW;  
5  
6  INSERT INTO DATE_DIM  
7  (  
8    DATE_KEY,  
9    FULL_DATE,  
10   DAY_NUM,  
11   WEEKDAY_ABBR,  
12   WEEKDAY_NUM,  
13   DAY_OF_YEAR_NUM,  
14   WEEK_OF_YEAR,  
15   MONTH_NUM,  
16   MONTH_ABBR,  
17   QUARTER_NUM,  
18   QUARTER_NAME,  
19   YEAR_NUM,  
20   FIRST_DAY_OF_MONTH,  
21   LAST_DAY_OF_MONTH,  
22   IS_WEEKEND  
23 )  
24 AS  
25 (  
26   SELECT  
27     TO_DATE('2018-01-01', 'YYYY-MM-DD') AS DATE_KEY,  
28     TO_DATE('2018-01-01', 'YYYY-MM-DD') AS FULL_DATE,  
29     1 AS DAY_NUM,  
30     'SUNDAY' AS WEEKDAY_ABBR,  
31     1 AS WEEKDAY_NUM,  
32     1 AS DAY_OF_YEAR_NUM,  
33     1 AS WEEK_OF_YEAR,  
34     1 AS MONTH_NUM,  
35     'JAN' AS MONTH_ABBR,  
36     1 AS QUARTER_NUM,  
37     'Q1' AS QUARTER_NAME,  
38     2018 AS YEAR_NUM,  
39     TO_DATE('2018-01-01', 'YYYY-MM-DD') AS FIRST_DAY_OF_MONTH,  
40     TO_DATE('2018-01-31', 'YYYY-MM-DD') AS LAST_DAY_OF_MONTH,  
41     0 AS IS_WEEKEND  
42   )  
43 )
```

The Database Explorer on the left shows the schema structure, including the DATE_DIM table. The Object Details panel on the right shows the table's columns and data types.

name	type
TIME_KEY	NUMBER(4,0)
HOUR_NUM	NUMBER(38,0)
MINUTE_NUM	NUMBER(38,0)
TIME_24_HR	VARCHAR(167772)

The screenshot shows the Snowflake SQL Editor interface. The main query window displays the following SQL code:

```
1  USE ROLE MEDIA_ROLE;  
2  USE WAREHOUSE MEDIA_WH;  
3  USE DATABASE MEDIA_DB;  
4  USE SCHEMA DW;  
5  
6  -- Load hour + minute combinations  
7  INSERT INTO TIME_DIM (TIME_KEY, HOUR_NUM, MINUTE_NUM, TIME_24_HR)  
8  SELECT  
9    (HOUR_NUM * 100) + MINUTE_NUM AS TIME_KEY,  
10   HOUR_NUM,  
11   MINUTE_NUM,  
12   LPAD(HOUR_NUM, 2, '0') || '-' || LPAD(MINUTE_NUM, 2, '0') AS TIME_24_HR  
13 FROM (  
14   SELECT HOUR_NUM, MINUTE_NUM  
15   FROM TABLE(Generator(rowcount => 1440)) g,  
16   LATERAL (  
17     SELECT FLOOR(ROW_NUMBER() OVER (ORDER BY SEQ4()) / 60) AS HOUR_NUM,  
18            MOD(ROW_NUMBER() OVER (ORDER BY SEQ4()), 60) AS MINUTE_NUM  
19   )  
20 )
```

The Database Explorer on the left shows the schema structure, including the TIME_DIM table. The Object Details panel on the right shows the table's columns and data types.

name	type
TIME_KEY	NUMBER(4,0)
HOUR_NUM	NUMBER(38,0)
MINUTE_NUM	NUMBER(38,0)
TIME_24_HR	VARCHAR(167772)

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```
ALTER TABLE DW.SALES_FACT
ADD CONSTRAINT SALESFACT_DATE
FOREIGN KEY (DATE_DIM_KEY) REFERENCES DW.DATE_DIM(DATE_KEY);

CREATE OR REPLACE TABLE DW.SALES_FACT(
  SALES_KEY      NUMBER(10) PRIMARY KEY,      -- (optionally: DEFAULT
  SALES_FACT_SEQ.NEXTVAL)
  CUSTOMER_KEY   NUMBER(10),
  INVOICE_ID     NUMBER(10),
  DATE_DIM_KEY   NUMBER(10) NOT NULL,         -- matches DATE_DIM.DATE_KEY
  TOTAL_SALE_AMT NUMBER(10,2),
  SOURCE_ID      NUMBER(10),
  DATE_TO_WAREHOUSE DATETIME DEFAULT CURRENT_TIMESTAMP(),
  CONSTRAINT FK_SALESFACT_DATE
  FOREIGN KEY (DATE_DIM_KEY) REFERENCES DW.DATE_DIM(DATE_KEY)
);
```