



NATIONAL INSTITUTE OF TECHNOLOGY WARANGAL
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
MCA, IV Semester
KE Lab Assignment-05

Date :10/03/2022

-- Que 1)

```
/* ITEM TABLE */
create table item_dimension( item_key Number(5), item_name varchar(10), brand
varchar(10), type varchar(10), supplier_type varchar(10));
/* TIME TABLE */
create table timedimension ( time_key Number(5), day Number(5), day_of_the_week
Varchar(10), month Number(5), quarter Number(5), year Number(5));
/* BRANCH TABLE */
create table branch_dimension (branch_key Number(5),branch_name
varchar(20),branch_type varchar(20));
/* LOCATION TABLE */
create table location_dimension( location_key Number(5), street varchar(10), city
varchar(10), province varchar(10), country varchar(10));
/* SALES TABLE */
create table sales_fact(id Number(5), dollor_sold number(7,2), units_sold Number(5),
time_key Number(5), item_key Number(5), location_key Number(5), branch_key
Number(5));

-- ADD PRIMANY KEY TO time table
alter table timedimension add constraint pk_timedimension primary key(time_key);
-- ADD PRIMANY KEY TO branch table
alter table branch_dimension add constraint pk_branch_dimension primary key(branch_key);
-- ADD PRIMANY KEY TO item table
alter table item_dimension add constraint pk_item_dimension primary key(item_key);
-- ADD PRIMANY KEY TO location table
alter table location_dimension add constraint pk_location_dimension primary
key(location_key);

desc sales_fact;
desc timedimension;
desc branch_dimension;
desc location_dimension;
desc item_dimension;

-- Connecting all tables to sales table using Foreign Keys

alter table sales_fact add constraint fk_timedimension_sales_fact foreign key (time_key)
references timedimension(time_key);
```

```

alter table sales_fact add constraint fk_branch_dimension_sales_fact foreign key
(branch_key) references branch_dimension(branch_key);
alter table sales_fact add constraint fk_item_dimension_sales_fact foreign key (item_key)
references item_dimension(item_key);
alter table sales_fact add constraint fk_location_dimension_sales_fact foreign
key(location_key) references location_dimension(location_key);

-- INSERT DATA into location table
insert into location_dimension values(301,'RAMKRISHNA','PATNA','BIHAR','INDIA');
insert into location_dimension values(302,'MSDHONI ','RANCHI','JHARKHAND','INDIA');
insert into location_dimension values(303,'JOYPUR','KHARAK','WEST BENG','INDIA');
insert into location_dimension values(304,'RAMNAGAR','AYODHYA','UP','INDIA');
insert into location_dimension values(305,'CHROMPET','CHENNAI','TAMIL
NADU','INDIA');

-- INSERT DATA into branch table
insert into branch_dimension values(401,'IOT','SALES');
insert into branch_dimension values(402,'ELECTRICAL','SALES');
insert into branch_dimension values(403,'MECHANICAL','SALES');
insert into branch_dimension values(404,'EDIBLE','SALES');
insert into branch_dimension values(405,'ELETRONICS','SALES');

-- INSERT DATA into item table
insert into item_dimension values(101,'SMART','WIPRO','ELECTRIC','online');
insert into item_dimension values(102,'LAPTO','DELL','ELECTRIC','shop');
insert into item_dimension values(103,'DRILL','TATA','MECHANIC','online');
insert into item_dimension values(104,'NOODL','NESTLE','EDIBLE','online');
insert into item_dimension values(105,'FAN','USHA','ELECTRO','online');

-- INSERT DATA into time table
insert into timedimension values(201,2,'Monday',5,2,2021);
insert into timedimension values(202,23,'Saturday',9,3,2009);
insert into timedimension values(203,14,'Wednesday',12,4,2010);
insert into timedimension values(204,10,'Monday',12,4,2021);
insert into timedimension values(205,6,'Wednesday',2,1,2010);

-- INSERT DATA into sales table
insert into sales_fact values(1,1500,41,201,101,301,401);
insert into sales_fact values(2,1022,42,202,102,302,402);
insert into sales_fact values(3,1034,43,203,103,303,403);
insert into sales_fact values(4,1046,44,204,104,304,404);
insert into sales_fact values(5,1058,45,205,105,305,405);

select * from item_dimension;
select * from timedimension;
select * from branch_dimension;

```

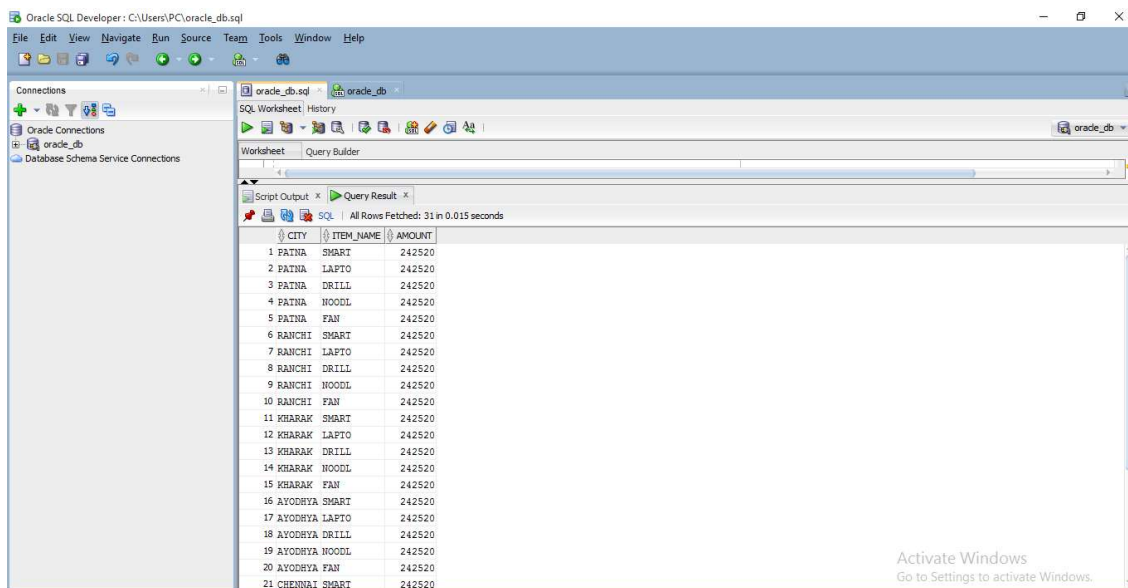
```
select * from location_dimension;  
select * from sales_fact;
```

-- RUNNING Queries

-- (A) "Compute the sum of sales, grouping by city and item."

```
SELECT  
  city,  
  item_name,  
  sum(dollor_sold * units_sold) amount  
FROM  
  sales_fact,location_dimension,  
  item_dimension  
GROUP BY  
  ROLLUP(city,  
  item_name);
```

Output→



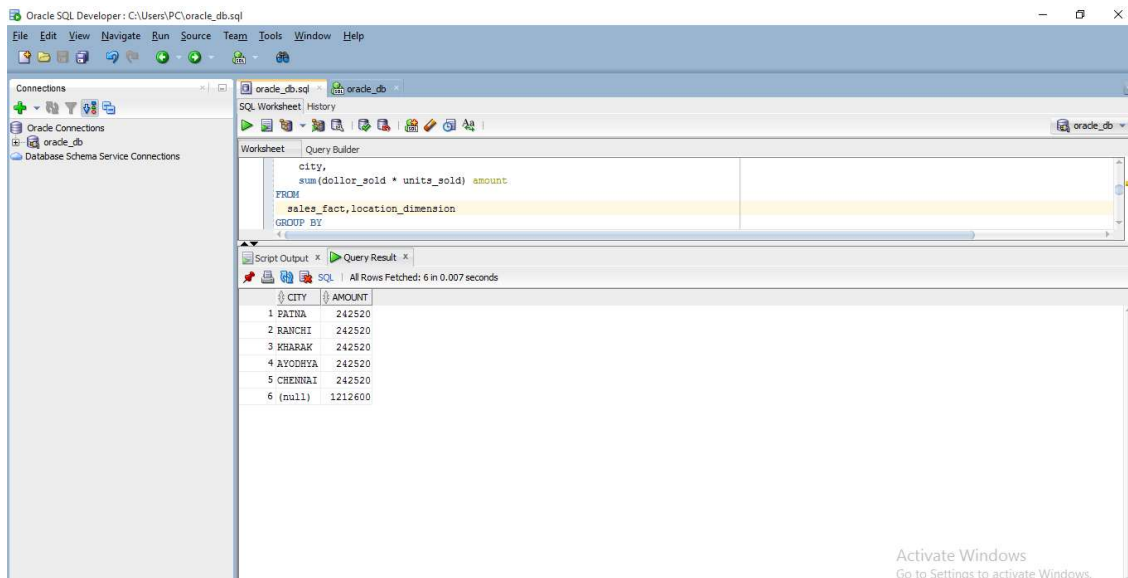
	CITY	ITEM_NAME	AMOUNT
1	PATNA	SMART	242520
2	PATNA	LAPTO	242520
3	PATNA	DRILL	242520
4	PATNA	NOODL	242520
5	PATNA	FAN	242520
6	RANCHI	SMART	242520
7	RANCHI	LAPTO	242520
8	RANCHI	DRILL	242520
9	RANCHI	NOODL	242520
10	RANCHI	FAN	242520
11	KHARAK	SMART	242520
12	KHARAK	LAPTO	242520
13	KHARAK	DRILL	242520
14	KHARAK	NOODL	242520
15	KHARAK	FAN	242520
16	AYODHYA	SMART	242520
17	AYODHYA	LAPTO	242520
18	AYODHYA	DRILL	242520
19	AYODHYA	NOODL	242520
20	AYODHYA	FAN	242520
21	CHENNAI	SMART	242520

-- (B) "Compute the sum of sales, grouping by city."

```
SELECT  
  city,  
  sum(dollor_sold * units_sold) amount  
FROM  
  sales_fact,location_dimension  
GROUP BY  
  city;
```

ROLLUP(city);

Output→



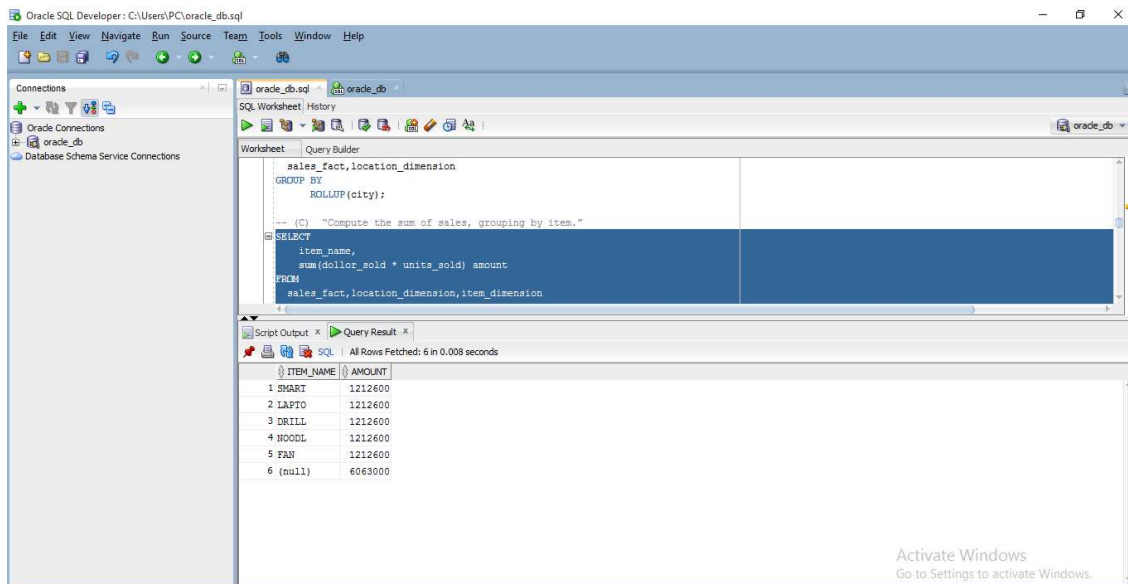
The screenshot shows the Oracle SQL Developer interface. The 'Query Result' window displays the following data:

	CITY	AMOUNT
1	PATNA	242520
2	RANCHI	242520
3	KHARAK	242520
4	AYODHYA	242520
5	CHENNAI	242520
6	(null)	1212600

-- (C) "Compute the sum of sales, grouping by item."

```
SELECT
    item_name,
    sum(dollar_sold * units_sold) amount
FROM
    sales_fact,location_dimension,item_dimension
GROUP BY
    ROLLUP(item_name);
```

Output→



-- (D) What is the maximum number of cells in the base cuboid.
 -- $(p+1)^n$ Here $p=4$, $n = 4$
 -- So $(p+1)^n \Rightarrow (4+1)^4$ -->so, maximum number of cells in base cuboid is = 625

-- (E) What is the minimum number of cells in base cuboid.
 -- Here $p=4$ --> so, minimum number of cells in base cuboid is = 4

-- Que 2)
 -- CREATE game table
 create table Game(Game_Id Number(5), Name varchar(20));

-- CREATE location table
 create table Location(Location_Id Number(5), City varchar(20), state Varchar(15));

-- CREATE date table
 create table Date_Game(date_Id Number(5), Day Number(5),Month Number(5), Year Number(5));

--CREATE spectator table
 create table spectator(spectator_Id Number(5),Name Varchar(15), Type varchar(20));

-- CREATE Sales table which also contain COUNT and CHARGE
 create table sales_game(sales_id Number(5),Game_Id Number(5),Date_Id Number(5),Spectator_Id Number(5),Location_Id Number(5), Count Number(5), Charge Number(5));

-- ADD Primary Key to game table

```

alter table Game add constraint pk_Game primary key(Game_Id);
-- ADD Primary Key to location table
alter table Location add constraint pk_Location primary key(Location_Id);
-- ADD Primary Key to date table
alter table Date_Game add constraint pk_Date_Game primary key(date_id);
-- ADD Primary Key to spectator table
alter table spectator add constraint pk_spectator primary key(spectator_Id);
-- ADD Primary Key to sales table
alter table sales_game add constraint pk_sales_game primary key(sales_Id);

-- Connecting all tables to sales table By Foreign keys
alter table sales_game add constraint fk_Game_sales_game foreign key (Game_Id)
references Game(Game_Id);
alter table sales_game add constraint fk_Location_sales_game foreign key(Location_Id)
references Location(Location_id);
alter table sales_game add constraint fk_Date_Game_sales_game foreign key(Date_Id)
references Date_game(Date_id);
alter table sales_game add constraint fk_spectator_sales_game foreign key(spectator_Id)
references spectator(spectator_id);

desc Game;
desc Location;
desc Date_Game;
desc spectator;
desc sales_game;

-- Insert DATA into Game table
insert into Game values (101,'Cricket');
insert into Game values (102,'Football');
insert into Game values (103,'Kabaddi');
insert into Game values (104,'Basket Ball');

-- Insert DATA into location table
insert into Location values(201,'Patna','Bihar');
insert into Location values(202,'Ranchi','Jharkhand');
insert into Location values(203,'GM_Place','West Bengal');
insert into Location values(204,'Mumbai','Maharashtra');

-- Insert DATA into Date table
insert into Date_Game values(301,23,11,2009);
insert into Date_Game values(302,12,4,2010);
insert into Date_Game values(303,5,9,2019);
insert into date_Game values(304,30,6,2021);

-- Insert DATA into spectator table
insert into spectator values(401,'Gaurav','Student');
insert into spectator values(402,'Sunny','Adult');
insert into spectator values(403,'Pankaj','Senior');
insert into spectator values(404,'Abhishek','Student');

```

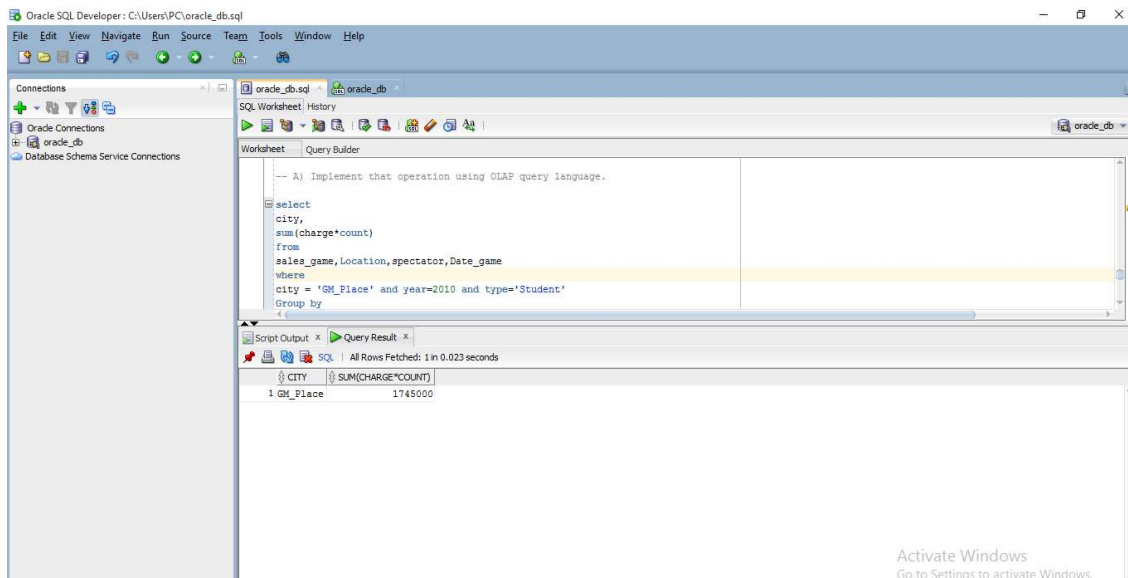
```
-- Insert DATA into sales table
insert into sales_game values(1,101,301,401,201,34,4500);
insert into sales_game values(2,102,302,402,202,12,9800);
insert into sales_game values(3,103,303,403,203,45,3400);
insert into sales_game values(4,104,304,404,204,67,6700);
```

```
select* from Game;
select* from Location;
select* from Date_Game;
select* from spectator;
select* from sales_game;
```

-- A) Implement that operation using OLAP query language.

```
select
city,
sum(charge*count)
from
sales_game,Location,spectator,Date_game
where
city = 'GM_Place' and year=2010 and type='Student'
Group by
city;
```

Output→



-- B) Perform roll up operation from date to year.

```

SELECT
    day,month,year,
    sum(charge * count) amount
FROM
    sales_game,date_game

GROUP BY
    ROLLUP(day,month,year);

```

Output→

Oracle SQL Developer: C:\Users\PC\oracle_db.sql

Connections: Oracle Connections, oracle_db, Database Schema Service Connections

SQL Worksheet: History, Worksheet, Query Builder

Script Output: x, Query Result: x

SQL | All Rows Fetched: 13 in 0.073 seconds

	DAY	MONTH	YEAR	AMOUNT
1	23	11	2009	872500
2	12	4	2010	872500
3	5	9	2019	872500
4	30	6	2021	872500
5	23	11	(null)	872500
6	12	4	(null)	872500
7	5	9	(null)	872500
8	30	6	(null)	872500
9	23	(null)	(null)	872500
10	12	(null)	(null)	872500
11	5	(null)	(null)	872500
12	30	(null)	(null)	872500
13	(null)	(null)	(null)	3490000

Activate Windows
Go to Settings to activate Windows.

Saved: C:\Users\PC\oracle_db.sql | Line 224 Column 9 | Insert | Windows: G

-- C) What is the average charge paid by students, adults and seniors for each category you need to compute average?

```

select
type,
avg(charge*count)
from
sales_game,spectator
where
spectator.spectator_id = sales_game.spectator_Id
group by
type;

```

Output→

Oracle SQL Developer: C:\Users\PC\oracle_db.sql

File Edit View Navigate Run Source Team Tools Window Help

Connections

Oracle Connections

Oracle DB

Database Schema Service Connections

SQL Worksheet History

Worksheet Query Builder

-- C) What is the average charge paid by students, adults and seniors for each category you need to compute average?

```

select
type,
avg(charge*count)
from
sales_game,spectator
where

```

Script Output x Query Result x

SQL | All Rows Fetched: 3 in 0.018 seconds

TYPE	AVG(CHARGE*COUNT)
1 Student	300950
2 Adult	117600
3 Senior	153000

Activate Windows
Go to Settings to activate Windows.

-- D) Draw the snowflake schema diagram for the data ware house.

Answer →

