NATIONAL INSTITUTE OF TECHNOLOGY WARANGAL
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
MCA, IV Semester

KE Lab Assignment-05

Date :10/03/2022

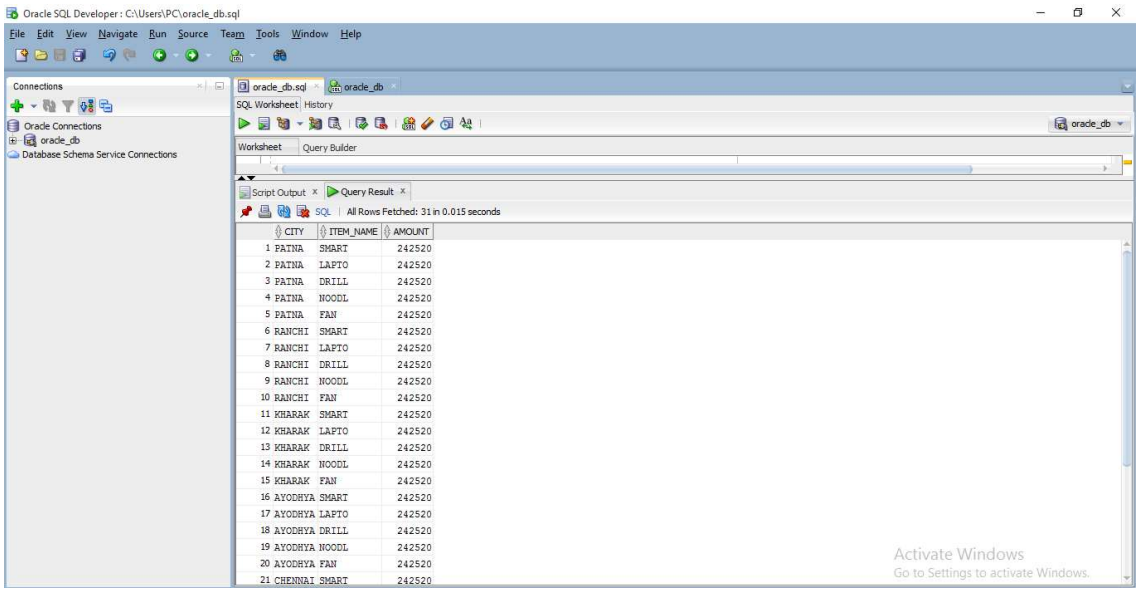
-- Que 1)

```
/* 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);
```

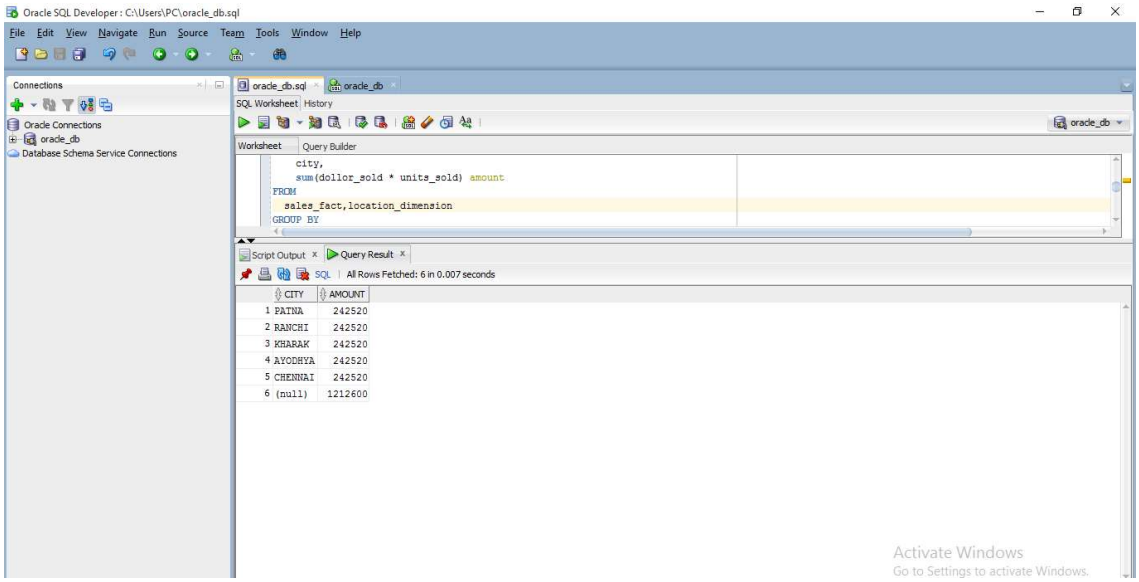
Output→




```
-- (B)  “Compute the sum of sales, grouping by city.”
SELECT
    city,
    sum(dollor_sold * units_sold) amount
FROM
  sales_fact,location_dimension
GROUP BY
```

ROLLUP(city);

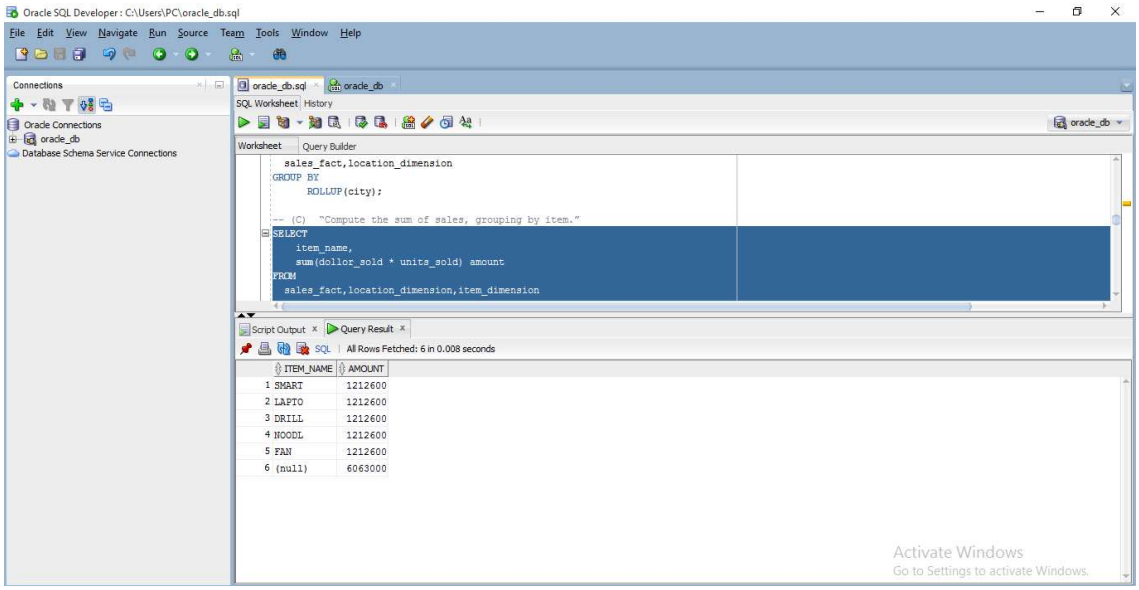
Output→



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

```
SELECT
    item_name,
    sum(dollor_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 => (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));

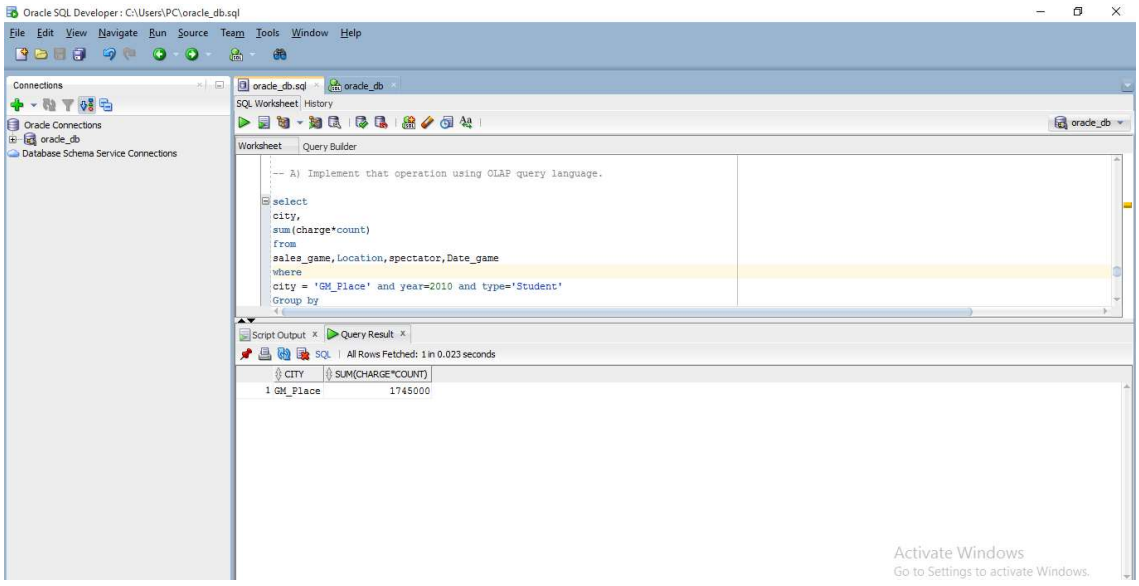
-- CREATE Sales table which also contain COUNT and CHARGE
create table sales_game(sales_id Number(5),Game_Id Number(5),Date_Id Number(5),Spectator_Id Number(5),Location_Id Number(5), Count Number(5), Charge Number(5));

-- 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;
```

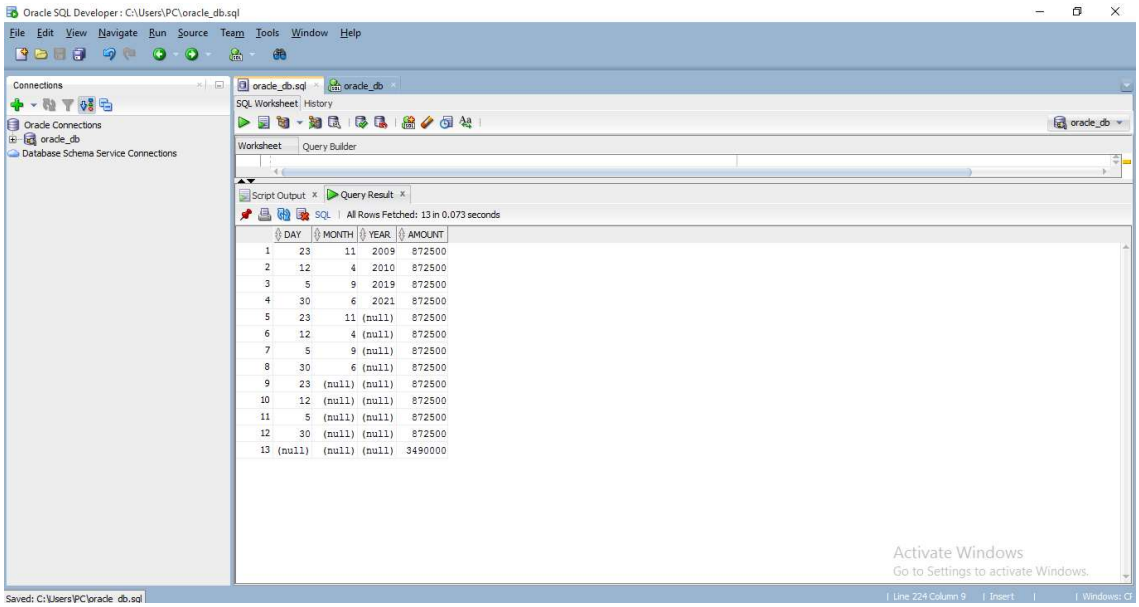
Output→



-- 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);
```

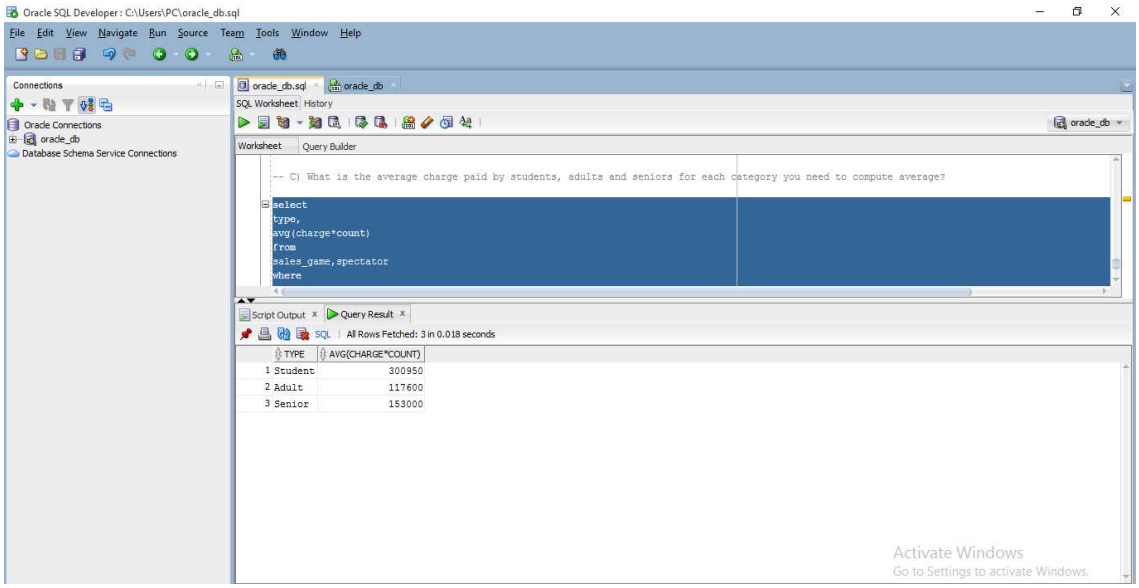
Output→



-- 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→



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

Answer →