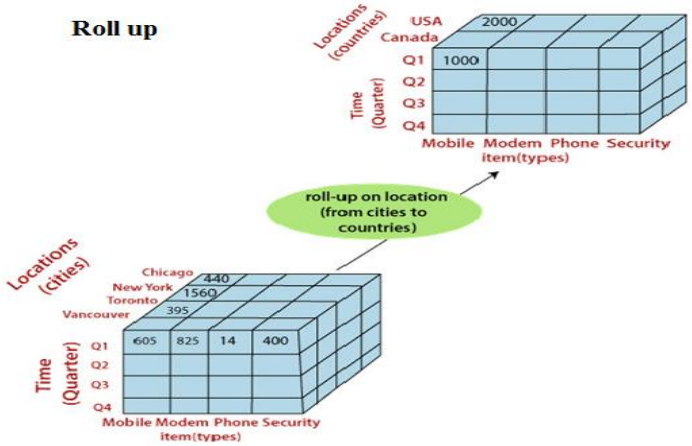
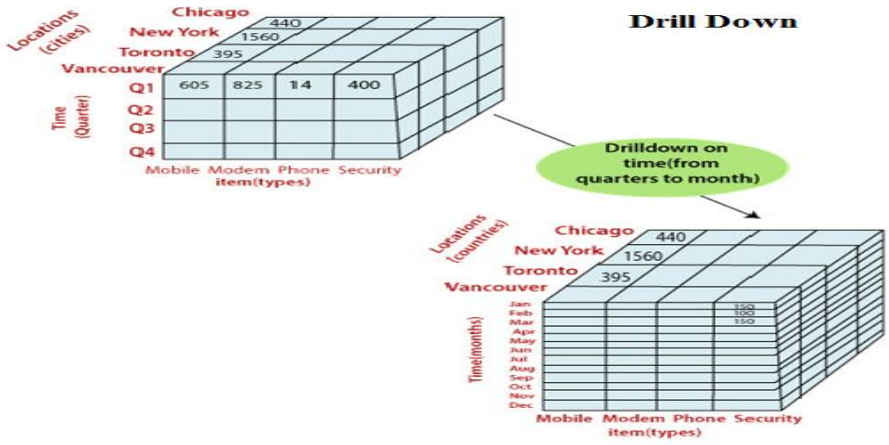
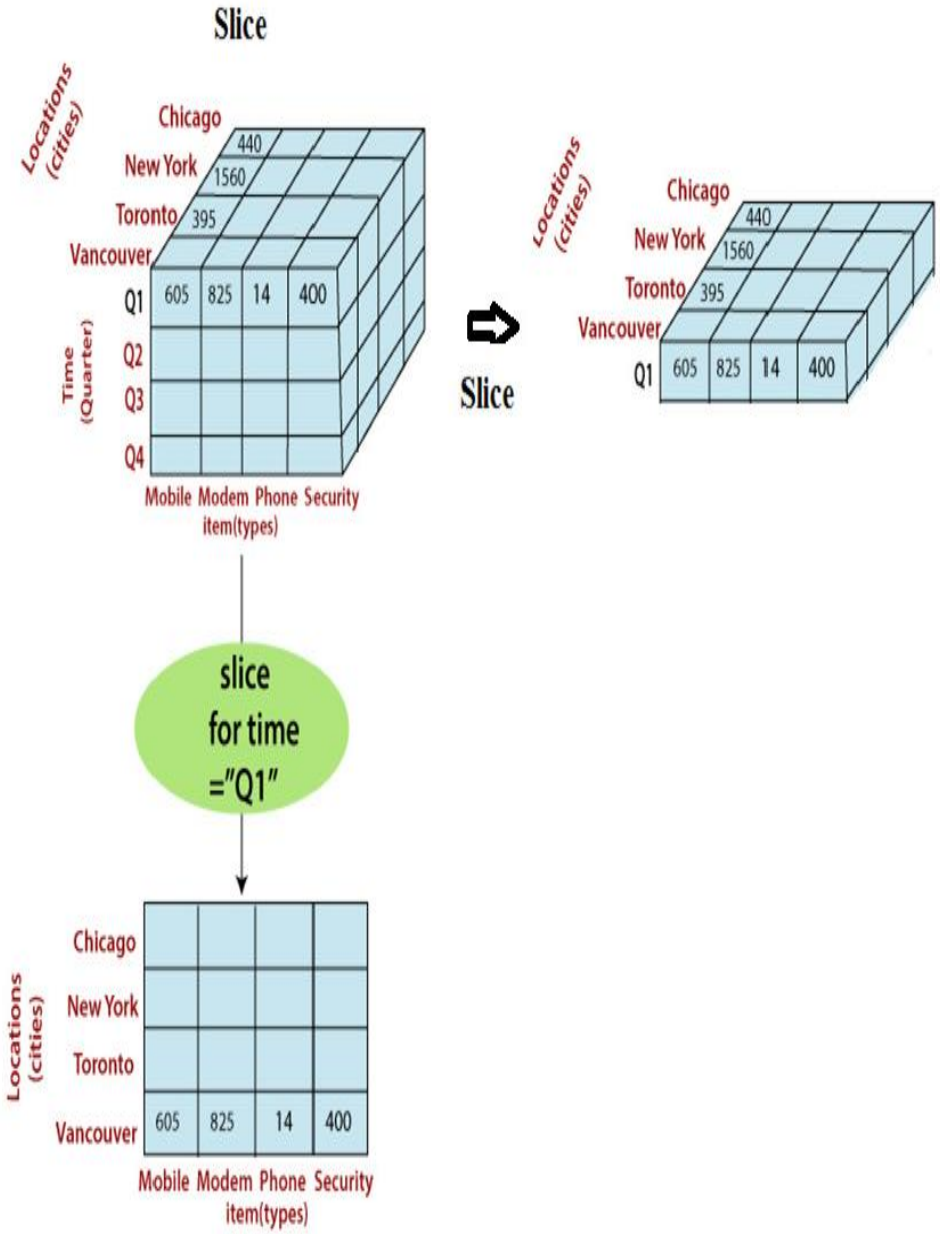
EXPERIMENT 3

Title:	Implementation of OLAP operation Slice, Dice, Rollup, Drilldown and Pivot based on experiment 1 case study.
Theory:	Online Analytical Processing Server (OLAP) is based on the multidimensional data model. It allows managers, and analysts to get an insight of the information through fast, consistent, and interactive access to information. You have to use concepts of OLAP operation like slice, dice,roll-up, drill-down etc. Roll-up Roll-up performs aggregation on a data cube in any of the following ways • By climbing up a concept hierarchy for a dimension • By dimension reduction  Drill-down It is the reverse operation of roll-up. It is performed by either of the following ways By stepping down a concept hierarchy for a dimension By introducing a new dimension. 

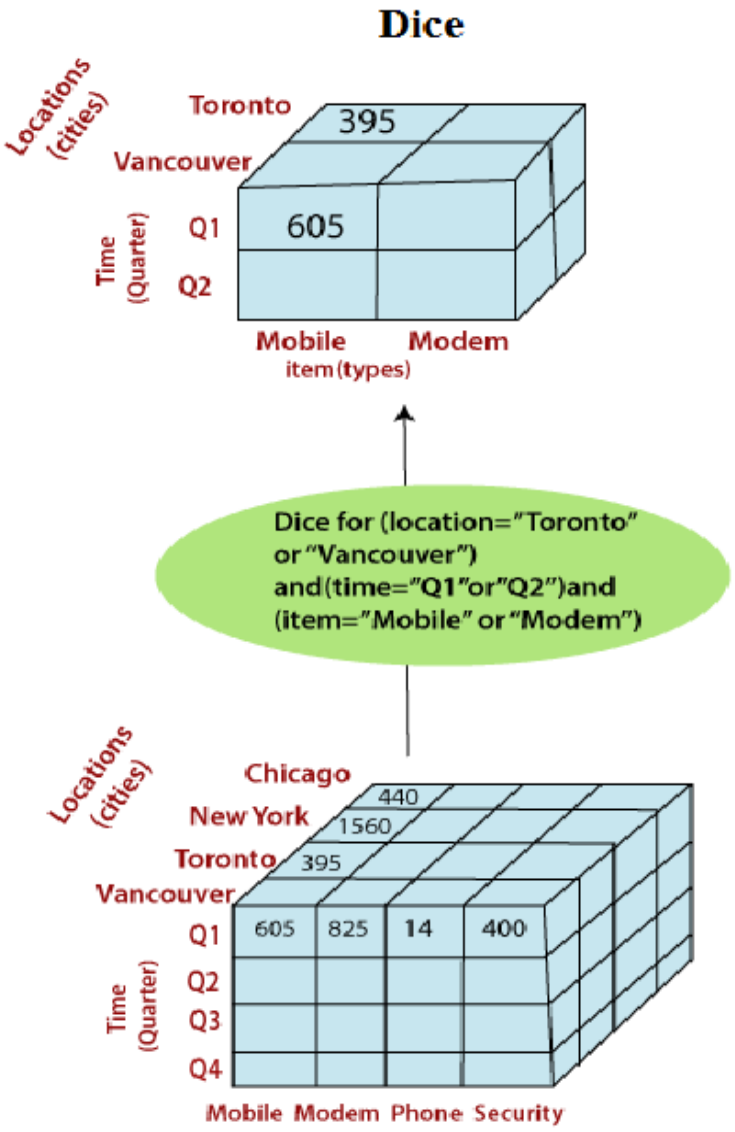
Slice

The slice operation selects one particular dimension from a given cube and provides a new sub-cube. Consider the following diagram that shows how slice works.



Dice

Dice selects two or more dimensions from a given cube and provides a new sub-cube. Consider the following diagram that shows the dice operation.



Deliverables:

1. For the tables created in experiment 2, write SQL DML queries to demonstrate following operations
   SLICE
   DICE
   ROLL UP
   DRILL DOWN
2. Screen shots of the queries and the query output.

Sample Output:

Table Customer

cid	cname	age	gender
cust1	Steve	20	M
cust2	Emma	25	F
cust3	Peter	23	M
cust4	Alice	22	F

Table Item

itid	category	color
item1	Tshirt	blue
item2	jacket	blue
item3	Tshirt	red
item4	Jacket	red

Table Store

sid	scity	scountry
store1	new york	USA
store2	chicago	USA
store3	delhi	India
store4	mumbai	India

Sales_Fact Table

sales_id	sid	cid	itid	price
1	store1	cust1	item1	30
2	store1	cust1	item2	35
3	store1	cust1	item3	25
4	store1	cust1	item4	40
5	store1	cust2	item4	40
6	store1	cust2	item3	25
7	store1	cust2	item2	35
8	store1	cust2	item1	30
9	store1	cust3	item1	30
10	store1	cust3	item2	35
11	store1	cust3	item3	25
12	store1	cust3	item4	40
13	store1	cust4	item4	40
14	store1	cust4	item3	25
15	store1	cust4	item2	35
16	store1	cust4	item1	30
17	store2	cust1	item1	30
18	store2	cust1	item2	35
19	store2	cust1	item3	25
20	store2	cust1	item4	40
21	store2	cust2	item4	40
22	store2	cust2	item3	25
23	store2	cust2	item2	35
24	store2	cust2	item1	30
25	store2	cust3	item1	30
26	store2	cust3	item2	35
27	store2	cust3	item3	25
28	store2	cust3	item4	40
29	store2	cust4	item4	40
30	store2	cust4	item3	25
31	store2	cust4	item2	35
32	store2	cust4	item1	30
33	store3	cust4	item1	30
34	store3	cust4	item2	35
35	store3	cust4	item3	25
36	store3	cust4	item4	40
38	store3	cust3	item4	40
39	store3	cust3	item3	25
40	store3	cust3	item2	35
41	store3	cust3	item1	30
42	store3	cust2	item1	30
43	store3	cust2	item2	35
44	store3	cust2	item3	25
45	store3	cust2	item4	40
46	store3	cust1	item4	40
47	store3	cust1	item3	25
48	store3	cust1	item2	35
49	store3	cust1	item1	30
50	store4	cust1	item1	30
51	store4	cust1	item2	35
52	store4	cust1	item3	25
53	store4	cust1	item4	40
54	store4	cust2	item4	40
55	store4	cust2	item3	25
56	store4	cust2	item2	35
57	store4	cust2	item1	30
58	store4	cust3	item1	30
59	store4	cust3	item2	35
60	store4	cust3	item3	25
61	store4	cust3	item4	40
62	store4	cust4	item4	40
63	store4	cust4	item3	25
64	store4	cust4	item2	35
65	store4	cust4	item1	30

Sample Queries

Slicing :

Show the total sales for every customer in Mumbai Store.

mysql>

```
select Sl.sid, cid sum(price)
from sales Sl, store s
where Sl.sid=s.sid and scity='mumbai'
group by Sl.sid, cid;
```

Dicing :
Show the total sales for every customer in Mumbai Store for red color item.

mysql>

```
select Sl.sid, Sl.itid, cid ,sum(price)
from sales Sl, store s, item i
where Sl.sid=s.sidand Sl.itid=i.itid and scity='mumbai' and color='red'
group by Sl.sid, Sl.itid, cid;
```

Roll up:
Get country wise sales for each category of product.

```
select scountry, category, sum(price)
from sales Sl, store s, item i
where Sl.sid=s.sid and Sl.itid=i.itid
group by scountry, category;
```

Drill-down:
Analyse in details country wise sales for each category of product.

```
select scountry , scity, gender, category ,sum(price)
from sales Sl, store s, item i, customer c
where Sl.sid=s.sid and Sl.itid=i.itid and Sl.cid=c.cid
group by scountry ,scity ,gender,category;
```

Conclusion:

Summarise the understanding from this experiment in your own words