Lab 5

To perform OLAP cube operations.

Solution of Exercise1:

```sql
create table date_dim(
date_id int,
date_day int,
date_month int,
date_quarter char(2),
date_year int);

insert into date_dim values(20040101,01,01,'Q1',2004),
(20040201,01,02,'Q1',2004),
(20040301,01,03,'Q1',2004),
(20040401,01,04,'Q2',2004),
(20040501,01,05,'Q2',2004);

select * from date_dim;
```

	date_id	date_day	date_month	date_quarter	date_year
1	20040101	1	1	Q1	2004
2	20040201	1	2	Q1	2004
3	20040301	1	3	Q1	2004
4	20040401	1	4	Q2	2004
5	20040501	1	5	Q2	2004

```sql
create table spectetor_dim(
spectator_id int,
spectator_name char(10),
status char(20),
phobe int,
address char(30));

insert into spectetor_dim values(101,'aditya','students',123456789,'test'),
(102,'kumar','students',123456789,'test'),
(103,'ravi','teachers',123456789,'test'),
(104,'test','teachers',123456789,'test');
```

```sql
select * from spectetor_dim;
```

	spectator_id	spectator_name	status	phobe	address
1	101	aditya	students	123456789	test
2	102	kumar	students	123456789	test
3	103	ravi	teachers	123456789	test
4	104	test	teachers	123456789	test

```sql
create table game_dim(
game_id int,
game_name char(20),
game_desc char(20),
producer char(20));

insert into game_dim values(101,'cricket','test','aditya'),
(102,'football','test','kumar'),
(103,'hockey','test','ak'),
(104,'badminton','test','aadi');

select * from game_dim;
```

	game_id	game_name	game_desc	producer
1	101	cricket	test	aditya
2	102	football	test	kumar
3	103	hockey	test	ak
4	104	badminton	test	aadi

```sql
create table location_dim(
location_id int,
location_name char(20),
phone int,
street char(20),
city char(20),
provinence char(20),
country char(20)
);

insert into location_dim values(1001,'GM
Place',123456789,'pilani','pilani','rajasthan','india'),
(1002,'test Place',123456789,'pilani','pilani','rajasthan','india'),
(1003,'GM Place',123456789,'Patna','patna','bihar','india'),
(1004,'test Place',123456789,'Patna','patna','bihar','india');
```

```
select * from location_dim;
```

	location_id	location_name	phone	street	city	provinence	country
1	1001	GM Place	123456789	pilani	pilani	rajasthan	india
2	1002	test Place	123456789	pilani	pilani	rajasthan	india
3	1003	GM Place	123456789	Patna	patna	bihar	india
4	1004	test Place	123456789	Patna	patna	bihar	india

```
create table sales_fact_table(
date_id int,
spectator_id int,
game_id int,
location_id int,
count int,
charge int);

insert into sales_fact_table values(20040101,101,101,1001,50,100),
(20040201,102,102,1001,50,100),
(20040301,102,103,1002,50,100),
(20040401,103,101,1001,50,100),
(20040101,103,102,1002,50,100),
(20040201,104,103,1001,50,100),
(20040101,104,101,1003,50,100),
(20040101,101,101,1004,50,100);

SELECT * FROM sales_fact_table;
```

	date_id	spectator_id	game_id	location_id	count	charge
1	20040101	101	101	1001	50	100
2	20040201	102	102	1001	50	100
3	20040301	102	103	1002	50	100
4	20040401	103	101	1001	50	100
5	20040101	103	102	1002	50	100
6	20040201	104	103	1001	50	100
7	20040101	104	101	1003	50	100
8	20040101	101	101	1004	50	100

Question 1

```
SELECT
ddate.date_year,
sum(count) as total_count,
sum(charge) as total_charge
  FROM sales_fact_table AS fct
  join date_dim as ddate
  on fct.date_id = ddate.date_id
  GROUP BY ddate.date_year with rollup;
```

	date_year	total_count	total_charge
1	2004	400	800
2	NULL	400	800

Question 2

```sql
select fct.game_id,
sum(count) as total_count,
sum(charge) as total_charges
from  sales_fact_table AS fct
group by fct.game_id with rollup;
```

	game_id	total_count	total_charges
1	101	200	400
2	102	100	200
3	103	100	200
4	NULL	400	800

Question 3

```sql
SELECT
loc.location_name,
sum(count) as total_count,
sum(charge) as total_charge
  FROM sales_fact_table AS fct
  join location_dim as loc
  on fct.location_id = loc.location_id
  GROUP BY loc.location_name with rollup;
```

	location_name	total_count	total_charge
1	GM Place	250	500
2	test Place	150	300
3	NULL	400	800

Question 4

```sql
  SELECT
s.status ,
sum(count) as total_count,
sum(charge) as total_charge
  FROM sales_fact_table AS fct
  join spectetor_dim as s
  on fct.spectator_id = s.spectator_id
  GROUP BY s.status with rollup;
```

	status	total_count	total_charge
1	students	200	400
2	teachers	200	400
3	NULL	400	800

Question 5

```sql
SELECT coalesce (s.status,'Status') AS Sta,coalesce (l.location_name,'location_name') AS
Loca,coalesce (d.date_year,0) AS yea,
  sum(P.count) as countno, sum(P.charge) as charge
  FROM sales_fact_table P , spectetor_dim s,date_dim d,game_dim g,location_dim l
  where P.date_id = d.date_id
  and P.game_id = g.game_id
  and P.location_id = l.location_id
  and P.spectator_id = s.spectator_id
  GROUP BY CUBE(s.status,l.location_name,d.date_year)
  HAVING s.status ='students' AND l.location_name='GM Place' AND d.date_year = 2004
```

	Sta	Loca	yea	countno	charge
1	students	GM Place	2004	100	200

Solution of Exercise2:

```sql
Create table PurchaseItem(
PurchaseId int,
Supplier varchar(50),
PurchaseType varchar(50),
PurchaseAmt int,
PurchaseDate date);


INSERT INTO PurchaseItem VALUES(1, 'Supplier1', 'P1', 1500,  '2009-11-02')
INSERT INTO PurchaseItem VALUES(2, 'Supplier1', 'P1', 2000,  '2009-10-02')
INSERT INTO PurchaseItem VALUES(3, 'Supplier1', 'P1', 800, '2009-11-02')
INSERT INTO PurchaseItem VALUES(4, 'Supplier1', 'P1', 1200,  '2009-8-02')
INSERT INTO PurchaseItem VALUES(5, 'Supplier1', 'P1', 3000,  '2009-11-02')
INSERT INTO PurchaseItem VALUES(6, 'Supplier1', 'P2', 10000,  '2009-10-02')
INSERT INTO PurchaseItem VALUES(7, 'Supplier1', 'P2', 1300,  '2009-11-02')
INSERT INTO PurchaseItem VALUES(8, 'Supplier1', 'P2', 200,  '2009-10-02')
INSERT INTO PurchaseItem VALUES(9, 'Supplier1', 'P2', 3000,  '2009-11-02')
INSERT INTO PurchaseItem VALUES(10, 'Supplier1', 'P2', 7600,  '2009-8-02')
INSERT INTO PurchaseItem VALUES(11, 'Supplier1', 'P2', 1500,  '2009-8-02')
INSERT INTO PurchaseItem VALUES(12, 'Supplier1', 'P3', 5000,  '2009-8-02')
INSERT INTO PurchaseItem VALUES(13, 'Supplier1', 'P3', 1500,  '2009-10-02')
INSERT INTO PurchaseItem VALUES(14, 'Supplier1', 'P3', 5300, '2009-11-02')
INSERT INTO PurchaseItem VALUES(15, 'Supplier1', 'P3', 500,  '2009-11-02')

SELECT * FROM PurchaseItem;
```

	PurchaseId	Supplier	PurchaseType	PurchaseAmt	PurchaseDate
1	1	Supplier1	P1	1500	2009-11-02
2	2	Supplier1	P1	2000	2009-10-02
3	3	Supplier1	P1	800	2009-11-02
4	4	Supplier1	P1	1200	2009-08-02
5	5	Supplier1	P1	3000	2009-11-02
6	6	Supplier1	P2	10000	2009-10-02
7	7	Supplier1	P2	1300	2009-11-02
8	8	Supplier1	P2	200	2009-10-02
9	9	Supplier1	P2	3000	2009-11-02
10	10	Supplier1	P2	7600	2009-08-02
11	11	Supplier1	P2	1500	2009-08-02
12	12	Supplier1	P3	5000	2009-08-02
13	13	Supplier1	P3	1500	2009-10-02
14	14	Supplier1	P3	5300	2009-11-02
15	15	Supplier1	P3	500	2009-11-02

Question1

```
SELECT coalesce (P.PurchaseType, 'All Purchase Type') AS Purchase,
  sum(P.PurchaseAmt) as PurchaseSum
  FROM PurchaseItem P
  GROUP BY ROLLUP (P.PurchaseType)
```

	Purchase	PurchaseSum
1	P1	8500
2	P2	23600
3	P3	12300
4	All Purchase Type	44400

Question2

```
  Select sum(P.PurchaseAmt) as Purchase_amt, P.PurchaseType, Month(P.PurchaseDate) as month
from PurchaseItem P Group by P.PurchaseType, month(P.PurchaseDate);
```

	Purchase_amt	PurchaseType	month
1	1200	P1	8
2	9100	P2	8
3	5000	P3	8
4	2000	P1	10
5	10200	P2	10
6	1500	P3	10
7	5300	P1	11
8	4300	P2	11
9	5800	P3	11

Question3

```
SELECT
  coalesce (P.PurchaseType,'Purchase Type') AS PurchaseType,
  coalesce ( month(P.PurchaseDate), 29) AS PurcMonth,
  sum(P.PurchaseAmt) as Purchase_Sum
  FROM PurchaseItem P
  GROUP BY ROLLUP (P.PurchaseType, month(P.PurchaseDate))

  Select  sum(P.PurchaseAmt)  as  Monthly_total,  Month(P.PurchaseDate)  as  month  from
PurchaseItem P Group by Month(P.PurchaseDate);
```

	PurchaseType	PurcMonth	Purchase_Sum
1	P1	8	1200
2	P1	10	2000
3	P1	11	5300
4	P1	29	8500
5	P2	8	9100
6	P2	10	10200
7	P2	11	4300
8	P2	29	23600
9	P3	8	5000
10	P3	10	1500

	Monthly_total	month
1	15300	8
2	13700	10
3	15400	11