S20230010225 LAB6(DBMS)

Scerenshots and queries

Derived tables 1

```sql
select branch_name,avg_balance
from (
select branch_name,avg(balance) as avg_balance
from account
group by branch_name
) as derived_table
Where avg_balance >=700;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

branch_name	avg_balance
Brighton	825.000000
Mianus	700.000000
Redwood	700.000000

Derived tables 2

```
select avg(balance1)
from (
select sum(balance) as balance1
from account group by branch_name
) as t1;
```

ult Grid | Filter Rows: | Export:

avg(balance1)
716.666667

Views cretaion

```
15    -- create view v as select branch_name, amount from loan;
16
17    select * from v
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

branch_name	amount
Round Hill	900
Downtown	1500
Perryridge	1500
Perryridge	1300
Downtown	1000
Redwood	2000
Mianus	500

v 4

Views deletion, updation

```
18
19      -- drop view v;
20
21 •    create view v as select * from loan;
22
```

Output

Action Output

#	Time	Action	Message
6	14:33:55	select v LIMIT 0, 1000	Error Code: 1054. Unknown column 'v' in 'field list'
7	14:34:05	select * from v LIMIT 0, 1000	7 row(s) returned
8	14:36:44	drop view v	0 row(s) affected
9	14:37:40	drop view v	Error Code: 1051. Unknown table 's20230010225_lab4_2.v'
10	14:37:57	create view v as select * from loan	0 row(s) affected

```
22
23 •    create or replace view v as select account_number, balance from account;
24 •    select * from v;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

account_number	balance
A-101	500.00
A-102	400.00
A-201	900.00
A-215	700.00
A-217	750.00
A-222	700.00

```
26      -- insert into v values("A-100", 500);
27      update v set balance=balance+100;
```

Output

Action Output

#	Time	Action	Message	Duration / Fetch
15	14:41:15	select * from v LIMIT 0, 1000	7 row(s) returned	0.000 sec / 0.00
16	14:42:19	insert into v values("A-100", 500)	1 row(s) affected	0.047 sec
17	14:42:52	update v set balance=balance+100	8 row(s) affected Rows matched: 8 Changed: 8 Warnings: 0	0.015 sec

Practice questions(ungraded ones)

1.

```
1 • select branch_name from customer_new natural join account where customer_city="pittsfield";
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

branch_name
Redwood

2.

```
1  select customername, balance from account natural join customer_new where balance>=700;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

customername	balance
Johnson	900
Jones	750
Lindsay	700
Smith	900

3.

```
3 •  select sum(amount) from borrower natural join loan where customer_name="Smith";
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

sum(amount)
2900

4.

```
4
5 •  select branch_city, count(branch_city) as c from branch group by branch_city having c>1;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

branch_city	c
Brooklyn	2
Horseneck	3

5.

```
6
7 •  select customername, branchname, branch_name, customer_city from customer_new
8    natural join account natural join branch where account.branch_name=branch.branchname;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

customername	branchname	branch_name	customer_city
Jones	Brighton	Brighton	Harrison
Johnson	Brighton	Brighton	Palo Alto
Smith	Brighton	Brighton	Rye
Johnson	Downtown	Downtown	Palo Alto
Hayes	Perryridge	Perryridge	Harrison
Lindsay	Redwood	Redwood	Pittsfield
Turner	Round Hill	Round Hill	Stamford

6.

```
10 •  select customer_city, sum(amount) as total_loan from
11    customer_new left join borrower on customer_name=customername
12    left join loan on borrower.loan_number=loan.loan_number
13    group by customer_city;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

customer_city	total_loan
Palo Alto	NULL
Harrison	2500
Stamford	NULL
Pittsfield	NULL
Rye	2900

7.

```
15 •  select customer.customername, sum(balance) as total from account natural join depositor right join customer
16    on customer.customername=depositor.customername
17    group by customername
18
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

customername	total
Brooks	NULL
Curry	NULL
Glenn	NULL
Green	NULL
Hayes	4300
Johnson	8600
Jones	4300
Lindsay	4300
Smith	4300
Turner	4300
Williams	NULL

8.

```
19 •  select c.customername, sum(amount) as total from loan
20    inner join borrower on loan.loan_number=borrower.loan_number
21    right join customer as c on customername=borrower.customer_name
22    group by c.customername;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

customername	total
Adams	1300
Brooks	NULL
Curry	500
Glenn	NULL
Green	NULL
Hayes	1500
Johnson	NULL
Jones	1000
Lindsay	NULL
Smith	2900

9.

```
24 •  create view v1 as
25    select c.customername, acc.accountnumber, loan.loan_number from customer as c
26    left join depositor as dep on dep.customername=c.customername
27    left join account as acc on acc.accountnumber=dep.account_number
28    left join borrower as b on b.customer_name=c.customername
29    left join loan on loan.loan_number=b.loan_number;
30
31 •  select * from v1;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

customername	accountnumber	loan_number
Adams	NULL	L-16
Brooks	NULL	NULL
Curry	NULL	L-93
Glenn	NULL	NULL
Green	NULL	NULL
Hayes	A-102	L-15
Johnson	A-201	NULL
Johnson	A-101	NULL
Jones	A-217	L-17
Lindsay	A-222	NULL

10. Question is unclear.

Assignment questions part 1:

Q1;

```
71 • select emp_name, doj from employee where emp_dept=(select distinct emp_dept from employee where emp_name='mark')
72   and emp_name<>'mark'
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

emp_name	doj
Linklon	2008-08-08
Linklon	2000-01-01

Q2

```
74 • select emp_id, emp_name from employee where income > (select avg(income) from employee) order by income desc;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

emp_id	emp_name
2514	Vasin
2524	Vasin
2513	Manas
2523	Manas
2508	Obama
2518	Obama
2512	Mac
2522	Mac

Q3

```
76 • select emp_id, emp_name from employee where emp_dept in (select emp_dept from employee where emp_name like '%n%');
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

emp_id	emp_name
2505	peter
2506	Mark
2507	Donald
2509	Linklon
2510	Kane
2512	Mac
2513	Manas
2514	Vasin

Q4

```
78 •  select emp_name, emp_dept, emp_id from employee where place = 'india';
79
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

emp_name	emp_dept	emp_id
Manas	Accounts	2513
Vasin	Accounts	2514
Manas	Accounts	2523
Vasin	Accounts	2524

Q5

```
80 •  select max(income) from employee where income < (select max(income) from employee);
81
82
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

max(income)
600000

Assignment questions part 2(1-10)

Create table:

```
7
8     -- create table boats(
9     -- bid int,
10    -- bname varchar(50),
11    -- color varchar(20));
12
13 •  create table reserves(
14    sid int,
15    bid int,
16    day date);
```

Output

Action Output

#	Time	Action	Message	Duration / Fetch
1	16:15:20	create table sailors(sid int, sname varchar(50), rating int, age float)	0 row(s) affected	0.031 sec
2	16:16:48	create table boats(bid int, bname varchar(50), color varchar(20))	0 row(s) affected	0.015 sec
3	16:17:28	create table reserves(sid int, bid int, day date)	0 row(s) affected	0.016 sec

Insert into sailors

```
18 •  insert into sailors (sid, sname, rating, age) values
19    (22, 'Dustin', 7, 45),
20    (29, 'Brutus', 1, 33),
21    (31, 'Lubber', 8, 55.5),
22    (32, 'Andy', 8, 25.5),
23    (58, 'Rusty', 10, 35),
24    (64, 'Horatio', 7, 35),
25    (71, 'Zorba', 10, 16),
26    (74, 'Horatio', 9, 40),
27    (85, 'Art', 3, 25.5),
28    (95, 'Bob', 3, 63.5);
29
```

Output

Action Output

#	Time	Action	Message	Durat
1	16:15:20	create table sailors(sid int, sname varchar(50), rating int, age float)	0 row(s) affected	0.031
2	16:16:48	create table boats(bid int, bname varchar(50), color varchar(20))	0 row(s) affected	0.015
3	16:17:28	create table reserves(sid int, bid int, day date)	0 row(s) affected	0.016
4	16:19:37	insert into sailors (sid, sname, rating, age) values (22, 'Dustin', 7, 45), (29, 'Brutus', 1...	10 row(s) affected Records: 10 Duplicates: 0 Warnings: 0	0.016

Insert into boats

```
30 •  insert into boats (bid, bname, color)values
31    (101, 'Interlake', 'blue'),
32    (102, 'Interlake', 'red'),
33    (103, 'Clipper', 'green'),
34    (104, 'Marine', 'red');
35
```

Action Output

#	Time	Action	Message
1	16:15:20	create table sailors(sid int, sname varchar(50), rating int, age float)	0 row(s) affected
2	16:16:48	create table boats(bid int, bname varchar(50), color varchar(20))	0 row(s) affected
3	16:17:28	create table reserves(sid int, bid int, day date)	0 row(s) affected
4	16:19:37	insert into sailors (sid, sname, rating, age) values (22, 'Dustin', 7, 45), (29, 'Brutus', 1...	10 row(s) affected Records: 10 Duplicates: 0 Warnings: 0
5	16:20:40	insert into boats (bid, bname, color)values (101, 'Interlake', 'blue'), (102, 'Interlake', '...	4 row(s) affected Records: 4 Duplicates: 0 Warnings: 0

Insert into reserves

```
insert into reserves (sid, bid, day) values
(22, 101, '1998-10-10'),
(22, 102, '1998-10-10'),
(22, 103, '1998-10-08'),
(22, 104, '1998-10-07'),
(31, 102, '1998-11-10'),
(31, 103, '1998-11-06'),
(31, 104, '1998-11-12'),
(64, 101, '1998-09-05'),
(64, 102, '1998-09-08'),
(74, 103, '1998-09-08');
```

Q1

```
48  select sid, sname, rating, age from sailors natural join reserves where bid=101;
49
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

sid	sname	rating	age
22	Dustin	7	45
64	Horatio	7	35

Q2

```
50  select * from boats natural join sailors natural join reserves where sname='bob';
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

bid	sid	bname	color	sname	rating	age	day

Q3

```
52 •  select sname from sailors natural join reserves natural join boats
53    where color='red' order by age;
54
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

sname
Horatio
Dustin
Dustin
Lubber
Lubber

Q4

```
55 •  select sname from sailors where sid in (select sid from reserves);
56
57
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

sname
Dustin
Lubber
Horatio
Horatio

Q5

```
56
57 •  select distinct s.sid, s.sname from sailors s, reserves r1, reserves r2
58    where s.sid = r1.sid and s.sid = r2.sid and r1.day = r2.day and r1.bid <> r2.bid;
59
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

sid	sname
22	Dustin

Q6

```
60 •  select distinct r.sid from reserves r join boats b on r.bid = b.bid
61    where b.color = 'red' or b.color = 'green';
62
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

sid
22
31
64
74

Q7

```
63 •  select sname, age from sailors where age = (select min(age) from sailors);
64
65
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

sname	age
Zorba	16

Q8

```
65 •  select count(distinct(sname)) from sailors;
66
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

count(distinct(sname))
9

Q9

```
66
67 •  select rating, avg(age) from sailors group by rating;
68
69
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

rating	avg(age)
7	40
1	33
8	40.5
10	25.5
9	40
3	44.5

Q10

```
68
69 •  select rating, avg(age) from sailors group by rating having count(rating) >= 2;
70
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

rating	avg(age)
7	40
8	40.5
10	25.5
3	44.5

SQL code:

```
-- create table sailors(
-- sid int,
-- sname varchar(50),
-- rating int,
-- age float
-- );

-- create table boats(
-- bid int,
-- bname varchar(50),
-- color varchar(20));

-- create table reserves(
-- sid int,
-- bid int,
-- day date);

-- insert into sailors (sid, sname, rating, age) values
-- (22, 'Dustin', 7, 45),
-- (29, 'Brutus', 1, 33),
-- (31, 'Lubber', 8, 55.5),
-- (32, 'Andy', 8, 25.5),
-- (58, 'Rusty', 10, 35),
-- (64, 'Horatio', 7, 35),
-- (71, 'Zorba', 10, 16),
-- (74, 'Horatio', 9, 40),
```

```
-- (85, 'Art', 3, 25.5),
-- (95, 'Bob', 3, 63.5);

-- insert into boats (bid, bname, color)values
-- (101, 'Interlake', 'blue'),
-- (102, 'Interlake', 'red'),
-- (103, 'Clipper', 'green'),
-- (104, 'Marine', 'red');

-- insert into reserves (sid, bid, day) values
-- (22, 101, '1998-10-10'),
-- (22, 102, '1998-10-10'),
-- (22, 103, '1998-10-08'),
-- (22, 104, '1998-10-07'),
-- (31, 102, '1998-11-10'),
-- (31, 103, '1998-11-06'),
-- (31, 104, '1998-11-12'),
-- (64, 101, '1998-09-05'),
-- (64, 102, '1998-09-08'),
-- (74, 103, '1998-09-08');

-- select sid, sname, rating, age from sailors natural join reserves where bid=101;

-- select * from boats natural join sailors natural join reserves where sname='bob';

-- select sname from sailors natural join reserves natural join boats
-- where color='red' order by age;
```

```
-- select sname from sailors where sid in (select sid from reserves);

-- select distinct s.sid, s.sname from sailors s, reserves r1, reserves r2
-- where s.sid = r1.sid and s.sid = r2.sid and r1.day = r2.day and r1.bid <> r2.bid;

-- select distinct r.sid from reserves r join boats b on r.bid = b.bid
-- where b.color = 'red' or b.color = 'green';

-- select sname, age from sailors where age = (select min(age) from sailors);

-- select count(distinct(sname)) from sailors;

-- select rating, avg(age) from sailors group by rating;

-- select rating, avg(age) from sailors group by rating having count(rating) >= 2;

-- select emp_name, doj from employee where emp_dept=(select distinct emp_dept
from employee where emp_name='mark')
-- and emp_name<>'mark'

-- select emp_id, emp_name from employee where income > (select avg(income) from
employee) order by income desc;

-- select emp_id, emp_name from employee where emp_dept in (select emp_dept from
employee where emp_name like '%n%');

-- select emp_name, emp_dept, emp_id from employee where place = 'india';
```

-- select max(income) from employee where income < (select max(income) from employee);

Ungraded queires:

-- select customername, balance from account natural join customer_new where balance>=700;

-- select sum(amount) from borrower natural join loan where customer_name="Smith";

-- select branch_city, count(branch_city) as c from branch group by branch_city having c>1;

-- select customername, branchname, branch_name, customer_city from customer_new

-- natural join account natural join branch where account.branch_name=branch.branchname;

-- select customer_city, sum(amount) as total_loan from

-- customer_new left join borrower on customer_name=customername

-- left join loan on borrower.loan_number=loan.loan_number

-- group by customer_city;

-- select customer.customername, sum(balance) as total from account natural join depositor right join customer

-- on customer.customername=depositor.customername

-- group by customername

-- select c.customername, sum(amount) as total from loan

```
-- inner join borrower on loan.loan_number=borrower.loan_number
-- right join customer as c on customername=borrower.customer_name
-- group by c.customername;


-- create view v1 as
-- select c.customername, acc.accountnumber, loan.loan_number from customer as c
-- left join depositor as dep on dep.customername=c.customername
-- left join account as acc on acc.accountnumber=dep.account_number
-- left join borrower as b on b.customer_name=c.customername
-- left join loan on loan.loan_number=b.loan_number;


-- select * from v1;
```