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(1)

use CS422Project;

```
CREATE VIEW view as SELECT books.book_id,books.name FROM books
inner join book_loans on books.book_id=book_loans.book_id
inner join borrowers on book_loans.card_id=borrowers.card_id
where borrowers.bor_type='Faculty' and borrowers.department='Electric Department';
select * from view;
```

The screenshot shows the MySQL Workbench interface. In the Navigator pane, under the 'Schemas' section, there is a tree view with 'cs422project' expanded, showing 'Tables', 'Views', 'Stored Procedures', and 'Functions'. A new view named 'view' has been created. The 'Query 1' tab contains the SQL code for creating the view:

```
1 use CS422Project;
2 CREATE VIEW view as SELECT books.book_id,books.name FROM books
3 inner join book_loans on books.book_id=book_loans.book_id
4 inner join borrowers on book_loans.card_id=borrowers.card_id
5 where borrowers.bor_type='Faculty' and borrowers.department='Electric Department';
6 select * from view;
```

The 'Result Grid' pane shows the structure of the view:

book_id	name
---------	------

The 'Output' pane at the bottom displays the execution log:

Action	Time	Message	Duration / Fetch
Management	97	22:53:31 insert INTO `CS422Project`.`borrowers`(`card_id`, `name`, `gender`, `bor_type`, `department`);	0.031 sec
Information	98	22:53:31 INSERT INTO CS422Project.`book_loans`(`card_id`, `book_id`, `branch_id`, `due_date`);	0.031 sec
No object selected	99	22:53:31 INSERT INTO CS422Project.`books`(`book_id`, `name`, `author`, `book_type`, `isbn`, `catalogue_no`);	0.016 sec
Object Info	100	22:54:06 use CS422Project	0.000 sec
Session	101	22:54:06 CREATE VIEW view as SELECT books.book_id,books.name FROM books inner join book_loans on books.book_id=book_loans.book_id inner join borrowers on book_loans.card_id=borrowers.card_id where borrowers.bor_type='Faculty' and borrowers.department='Electric Department';	0.125 sec
	102	22:54:06 select * from view LIMIT 0, 1000	0.000 sec / 0.000 sec

(2)

use CS422Project;

select avg(boc) from

(select * from borrowers where bor_type='Graduate Student' and department='Computer Science') as bo

inner join (select card_id,count(book_id)as boc from book_loans GROUP BY card_id) as bk on
bo.card_id=bk.card_id ;

The screenshot shows the MySQL Workbench interface with the following details:

- Query Editor:** Contains the SQL query from step 2.
- Result Grid:** Shows the output of the query, displaying a single row with "avg(boc)" and "1.0000".
- Action Output:** Shows the log of actions taken:
 - 130 23:05:53 use CS422Project
 - 131 23:05:53 CREATE VIEW view as SELECT books.book_id,books.name FROM books inner join book_loans on b... Error Code: 1050. Table 'view' already exists
 - 132 23:06:15 use CS422Project
 - 133 23:06:15 select avg(boc)from (select * from borrowers where bor_type='Graduate Student' and department='Com... 1 row(s) returned
- System Bar:** Includes the Windows taskbar with various application icons and system status.

(3)

use CS422Project;

SELECT b.name, el.Eng_count, fo.for_count, b.bor_type

FROM borrowers AS b INNER JOIN (SELECT book_loans.card_id, COUNT(*) AS Eng_count

FROM book_loans

WHERE (loan_type = 'English')

```

GROUP BY book_Loans.card_id) AS el on b.card_id=el.card_id
left JOIN
(SELECT Book_Loan_1.card_id, COUNT(*) AS for_count
FROM book_loans AS Book_Loan_1
WHERE (loan_type= 'foreign')
GROUP BY Book_Loan_1.card_id) as fo on el.card_id=fo.card_id
WHERE b.bor_type='vocational student'
GROUP BY b.name, el.Eng_count, fo.for_count, b.bor_type
HAVING ( el.Eng_count > CASE WHEN fo.for_count IS NULL THEN 0 ELSE fo.for_count END);

```

The screenshot shows the MySQL Workbench interface. The query editor window contains the SQL code provided above. The results grid shows one row of data:

name	Eng_count	for_count	bor_type
Kinjal	4	NULL	Vocational Student

The status bar at the bottom right indicates the time as 11:15 PM and the date as 8/31/2015.

(4)

use CS422Project;

```
select bol.card_id,sum(fine_amount) from( (select * from borrowers where bor_type='Undergraduate Student') as bor
```

```
inner join (select * from book_loans where due_date < curdate() group by card_id) as bol on bor.card_id = bol.card_id);
```

The screenshot shows the MySQL Workbench interface. In the top-left pane, the 'Schemas' tree shows the 'cs422project' schema selected. The main area contains a 'Query 1' tab with the following SQL code:

```
1. use CS422Project;
2. select bol.card_id,sum(fine_amount) from( (select * from borrowers where bor_type='Undergraduate Student') as bor
   inner join (select * from book_loans where due_date < curdate() group by card_id) as bol on bor.card_id = bol.card_id);
```

The 'Result Grid' below the query shows one row of data:

card_id	sum(fine_amount)
302659632	10

At the bottom of the interface, the 'Information' pane displays the history of actions taken in the session:

Action	Time	Message	Duration / Fetch
use CS422Project	132 23:06:15	0 row(s) affected	0.000 sec
select avg(bor) from (select * from borrowers where bor_type='Graduate Student' and department='Com...' as b1	133 23:06:15	1 row(s) returned	0.000 sec / 0.000 sec
use CS422Project	134 23:07:43	0 row(s) affected	0.000 sec
select bol.card_id,sum(fine_amount) from((select * from borrowers where bor_type='Undergraduate Stud...' as bol	135 23:07:43	1 row(s) returned	0.000 sec / 0.000 sec

(5)

use CS422Project;

UPDATE book_loans as bl

```
SET due_date=STR_TO_DATE( '4/8/2015', '%m/%d/%Y' )
```

```
WHERE book_id= (select book_id as b from books as b
```

```
where bl.card_id=101202505 and b.book_id=bl.book_id and b.name='Convex Optimization') ;
```

```
select * from book_loans;
```

(6)

use CS422Project;

```
select DISTINCT b1.name from (select DISTINCT isbn,name from books where branch_id=(select branch_id from lib_branches where branch_name='Branch A')) as b1
```

```
where NOT EXISTS (select * from
```

(select DISTINCT isbn from books where branch_id=(select branch_id from lib_branches where branch_name='Branch A') and NOT EXISTS (select * from book_loans where books.book_id=book_loans.book_id))

as b2 where b1.isbn=b2.isbn);

The screenshot shows the MySQL Workbench interface. The 'Query 1' tab contains the following SQL code:

```
1 use CS422Project;
2 select DISTINCT b1.name from (select DISTINCT isbn,name from books where branch_id=(select branch_id from lib_branches where branch_name='Branch A')) b1
3 where NOT EXISTS (select * from
4 (select DISTINCT isbn from books where branch_id=(select branch_id from lib_branches where branch_name='Branch A'))
5 as b2 where b1.isbn=b2.isbn);
```

The 'Result Grid' shows one row of data:

card_id	sum(fine_amount)
302659632	10

The 'Output' tab shows the execution log:

Action	Time	Message	Duration / Fetch
use CS422Project	132 23:06:15	0 rows(s) affected	0.000 sec
select avg(bod) from (select *from borrowers where bor_type='Graduate Student' and department='Com...' 1 row(s) returned	133 23:06:15	0.000 sec / 0.000 sec	
use CS422Project	134 23:07:43	0 rows(s) affected	0.000 sec
select bol.card_id,sum(fine_amount)from(select *from borrowers where bor_type='Undergraduate Stud...' 1 row(s) returned	135 23:07:43	0.000 sec / 0.000 sec	

(7)

use CS422Project;

select name from books as b1 where branch_id=(select branch_id from lib_branches where branch_name='Branch B')

and NOT exists

(select name from books as b2 where branch_id<>(select branch_id from lib_branches where branch_name='Branch B'))

and b1.name=b2.name);

The screenshot shows the MySQL Workbench interface. In the Query Editor (Query 1), a stored procedure named CS422Project is defined:

```

1 • use CS422Project;
2 • select name from books as b1 where branch_id=(select branch_id from lib_branches where branch_name='Branch B')
   and NOT exists
3   (select name from books as b2 where branch_id<>(select branch_id from lib_branches where branch_name='Branch B')
   and b1.name=b2.name);

```

The Results Grid shows the output of the query:

name
web programming
Computer Network

The Output pane displays the history of actions:

Action	Time	Message	Duration / Fetch
use CS422Project	23:07:43	0 row(s) affected	0.000 sec
select * from borrowers where bor_type='Undergraduate Stud...	23:07:43	1 row(s) returned	0.000 sec / 0.000 sec
use CS422Project	23:08:53	0 row(s) affected	0.000 sec
select name from books as b1 where branch_id=(select branch_id from lib_branches where branch_name='Branch B')	23:08:53	2 row(s) returned	0.000 sec / 0.000 sec

(8)

use CS422Project;

select name from borrowers inner join book_loans on borrowers.card_id=book_loans.card_id
and borrowers.department='Finance Department' and book_loans.renew_status=1;

MySQL Workbench

Local instance wampmysqld64 x

File Edit View Query Database Server Tools Scripting Help

Navigator: SCHEMAS
Filter objects
cs422project
Tables Views Stored Procedures Functions test

Query 1 x

```
1 use CS422Project;
2 select name from borrowers inner join book_loans on borrowers.card_id=book_loans.card_id
and borrowers.department='Finance Department' and book_loans.renew_status=1;
```

SQLAdditions: Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Result Grid | Read Only | Context Help | Snippets

name
John

Result 16 x

Action Output

Time	Action	Message	Duration / Fetch
119	23:02:27 use CS422Project	0 row(s) affected	0.000 sec
120	23:02:27 select DISTINCT b1.name from (select DISTINCT isbn.name from books where branch_id=(select branch_id from lib_branches where branch_name='Branch C') and ls_new=1 and NOT EXISTS (select * from books as b2 where EXISTS (select * from book_loans where branch_id=(select branch_id from lib_branches where branch_name='Branch C') and book_loans.book_id=b2.book_id) and b2.isbn=b1.isbn) ;	1 row(s) returned	0.000 sec / 0.000 sec
121	23:02:44 use CS422Project	0 row(s) affected	0.000 sec
122	23:02:44 select name from books as b1 where branch_id=(select branch_id from lib_branches where branch_name='Branch C') and ls_new=1 and NOT EXISTS (select * from books as b2 where EXISTS (select * from book_loans where branch_id=(select branch_id from lib_branches where branch_name='Branch C') and book_loans.book_id=b2.book_id) and b2.isbn=b1.isbn) ;	2 row(s) returned	0.016 sec / 0.000 sec
123	23:03:29 DROP DATABASE `cs422`	7 row(s) affected	0.843 sec
124	23:03:57 use CS422Project	0 row(s) affected	0.000 sec
125	23:03:57 select name from borrowers inner join book_loans on borrowers.card_id=book_loans.card_id and borrowers.department='Finance Department' and book_loans.renew_status=1;	1 row(s) returned	0.000 sec / 0.000 sec

Management Schemas Information Object Info Session

Search the web and Windows 11:04 PM 8/31/2015

(9)

use CS422Project;

select DISTINCT name from books as b1 where branch_id=(select branch_id from lib_branches where branch_name='Branch C') and ls_new=1 and

NOT EXISTS (select * from books as b2 where EXISTS

(select * from book_loans where branch_id=(select branch_id from lib_branches where branch_name='Branch C') and book_loans.book_id=b2.book_id) and b2.isbn=b1.isbn) ;

The screenshot shows the MySQL Workbench interface. The Query Editor window contains the following SQL code:

```

1 use CS422Project;
2 select DISTINCT name from books as b1 where branch_id=(select branch_id from lib_branches where branch_name='Branch A');
3 NOT EXISTS (select * from books as b2 where EXISTS
4 (select * from book_loans where branch_id=(select branch_id from lib_branches where branch_name='Branch C')) and bo
5

```

The Results Grid shows the output of the query, with columns for name and Networking.

The History pane at the bottom lists the following actions:

Action	Time	Message	Duration / Fetch
use CS422Project	121 23:02:44	0 row(s) affected	0.000 sec
select name from books as b1 where branch_id=(select branch_id from lib_branches where branch_name='Branch A');	122 23:02:44	2 row(s) returned	0.016 sec / 0.000 sec
DROP DATABASE `cs422`	123 23:03:29	7 row(s) affected	0.843 sec
use CS422Project	124 23:03:57	0 row(s) affected	0.000 sec
select name from borrowers inner join book_loans on borrowers.card_id=book_loans.card_id and borrows...	125 23:03:57	1 row(s) returned	0.000 sec / 0.000 sec
use CS422Project	126 23:04:25	0 row(s) affected	0.000 sec
select DISTINCT name from books as b1 where branch_id=(select branch_id from lib_branches where ...)	127 23:04:25	1 row(s) returned	0.000 sec / 0.000 sec

(10)

```

use CS422Project;

select lb.branch_name,fl.Maximum_book ,fl.pu from lib_branches as lb inner join
(select b1.cp as branchID,b1.max_br as Maximum_book,b2.publishpress as pu from (select
copo.branch_id as cp,max(copo.co) as max_br from
(select publishpress ,branch_id ,count(*) as co from books group by publishpress ,branch_id)
as copo group by copo.branch_id) as b1
inner join
(
select publishpress ,branch_id ,count(*) as co from books group by publishpress ,branch_id) as b2
on

```

b1.max_br=b2.co and b1.cp=b2.branch_id) as fl on fl.branchID=lb.branch_id;

MySQL Workbench

Local instance wampmysqld64

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

Filter objects

cs422project

- Tables
- Views
- Stored Procedures
- Functions

test

Query 1

```
1 use CS422Project;
2 select lb.branch_name,f1.Maximum_book ,f1.pu from lib_branches as lb inner join
3 (select b1.cp as branchID,b1.max_br as Maximum_book,b2.publishpress as pu from (select copo.branch_id as cp,max(co
4 (select publishpress ,branch_id ,count(*) as co from books group by publishpress ,branch_id)
5 as copo group by copo.branch_id ) as b1
6 inner join
7 (
8 -select publishpress ,branch_id ,count(*) as co from books group by publishpress ,branch_id) as b2
9 -on
10 b1.max_br=b2.co and b1.cp=b2.branch_id) as fl on fl.branchID=lb.branch_id;
```

Result Grid

branch_name	Maximum_book	pu
Branch A	9	Microsoft
Branch B	6	Meboo
Branch B	6	Microsoft
Branch C	9	Technical

Result 18

Action Output

Time	Action	Message	Duration / Fetch
123 23:03:29	DROP DATABASE `cs422`	7 row(s) affected	0.843 sec
124 23:03:57	use CS422Project	0 row(s) affected	0.000 sec
125 23:03:57	select name from borrowers inner join book_loans on borrowers.card_id=book_loans.card_id and borro...	1 row(s) returned	0.000 sec / 0.000 sec
126 23:04:25	use CS422Project	0 row(s) affected	0.000 sec
127 23:04:25	select DISTINCT name from books as b1 where branch_id=(select branch_id from lib_branches where ...	1 row(s) returned	0.000 sec / 0.000 sec

Management Schemas

Information

No object selected

Object Info Session

Search the web and Windows

11:05 PM
8/31/2015