

# DATABASE MANAGEMENT

## SYSTEM UE19CS301

### ASSIGNMENT-03

#### *COURIER MANAGEMENT SYSTEM*

DATE:

TEAM DETAILS

TEAM NUMBER-04

NAME	SRN
RAMYA C	PES1UG19CS379
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### SIMPLE QUERIES

❖ Name of all the route tracers.

➤ select username from C\_USER,C\_ROLE where C\_USER.roleid = C\_ROLE.Roleid and rolename = 'ROUTE TRACER';

```
courier_db=# select username from C_USER,C_ROLE where C_USER.roleid = C_ROLE.Roleid and rolename = 'ROUTE TRACER';
username
-----
jimjulietejam
(1 row)
```

❖ Name and description of the courier sent by a customer.

➤ select Couriername,Courierdescription from COURIER,CUSTOMER where COURIER.customer\_id = CUSTOMER.customer\_Id and fname = 'Helen';

```
courier_db=# select Couriername,Courierdescription from COURIER,CUSTOMER where COURIER.customer_id = CUSTOMER.customer_Id and fname = 'Helen';
 couriername | courierdescription
-----
Chocolate courier | Courier has exquisite variety of chocolates
(1 row)
```

❖ List the deliveries done on same day.

➤ select \* from DELIVERY where delivery\_type = 'Same Day Delivery';

```
courier_db=# select * from DELIVERY where delivery_type = 'Same Day Delivery';
 deliverycusid | deliveryid | delivery_description | delivery_date | delivery_type
-----
Helen2448 | 41 | Zepo delivery to MS HANNAH | 2021-08-23 | Same Day Delivery
alice7912 | 43 | Chocolate delivery to MS ALICE | 2021-09-02 | Same Day Delivery
taylor1892 | 45 | Vegetables delivery to MR TAYLOR | 2021-09-08 | Same Day Delivery
chris9932 | 48 | Fruits delivery to MR CHRIS | 2021-09-24 | Same Day Delivery
(4 rows)
```

❖ Select customers of maharashtra

- select customer\_ID, fname from CUSTOMER where customer\_address LIKE '%Maharashtra%';

```
courier_db=# select customer_ID, fname from CUSTOMER where customer_address LIKE '%Maharashtra%';
customer_id | fname
-----+-----
Helen2448   | Hannah
(1 row)
```

- ❖ list the couriers sent by Jake

- select couriername, Fname from COURIER, CUSTOMER where CUSTOMER.customer\_ID = COURIER.customer\_id and Fname = 'Jake';

```
courier_db=# select couriername, Fname from COURIER, CUSTOMER where CUSTOMER.customer_ID = COURIER.customer_id and Fname = 'Jake';
couriername | fname
-----+-----
Flora courier | Jake
(1 row)
```

### COMPLEX QUERIES

- ❖ Find minimum and maximum courier IDs in courier table.

- select max(CourierID) as highest, min(CourierID) as least from COURIER;

```
courier_db=# select max(CourierID) as highest,
courier_db=# min(CourierID) as least
courier_db=# from COURIER;
highest | least
-----+-----
28      | 21
(1 row)
```

- ❖ Select the parameters from the tables role and login that have even numbered role id

- SELECT \* FROM C\_ROLE as role01 INNER JOIN C\_LOGIN as user01 ON role01.RoleID=user01.roleid WHERE (role01.RoleID %2)= 0;

```
courier_db=# SELECT * FROM C_ROLE as role01
courier_db=# INNER JOIN C_LOGIN as user01
courier_db=# ON role01.RoleID=user01.roleid
courier_db=# WHERE (role01.RoleID %2)= 0;
roleid | rolename | roledescription | userid | loginid | loginusername | userpassword | userid | roleid
-----+-----+-----+-----+-----+-----+-----+-----+-----
2 | BILLING AGENT | Person who generates the bill and alters it | 268 | swajohn | JohnWeston | Westjohn1923 | 268 | 2
6 | SCHEDULE INITIATOR | Prepares a schedule for the courier and makes sure that it is adhered | 864 | lulisa | LisaParker | lisali$2821 | 864 | 6
4 | TRACKER AGENT | Tracks the courier until it reaches the customer | 888 | joshyjoshua | Joseph Joshua | joshua$1878 | 888 | 4
8 | ROUTE TRACER | Finds the optimum route between the courier system and the customer location | 546 | pb&julie | Juliette Hannigan | Juli*ette | 546 | 8
(4 rows)
```

- ❖ Deliveries that had their courier delivered in September

- SELECT \* FROM DELIVERY WHERE to\_char(delivery\_date, 'MM')='09';

```
courier_db=# SELECT * FROM DELIVERY
courier_db=# WHERE
courier_db=# to_char(delivery_date, 'MM')='09';
deliverycusid | deliveryid | delivery_description | delivery_date | delivery_type
-----+-----+-----+-----+-----
alice7912 | 43 | Chocolate delivery to MS ALICE | 2021-09-02 | Same Day Delivery
tom7281 | 44 | Fruits delivery to MR TOM | 2021-09-08 | Next Day Delivery
taylor1892 | 45 | Vegetables delivery to MR TAYLOR | 2021-09-08 | Same Day Delivery
robin8733 | 46 | Clothes delivery to MR ROBIN | 2021-09-16 | Next Day Delivery
helly9238 | 47 | Chocolate Delivery to MS HELEN | 2021-09-17 | Next Day Delivery
chris9932 | 48 | Fruits delivery to MR CHRIS | 2021-09-24 | Same Day Delivery
(6 rows)
```

- ❖ Display the username and the mail id of the user that have the product of userid and role id greater than 1000

➤ SELECT username AS user\_name ,useremail AS user\_email\_id FROM C\_USER WHERE userID\*roleid>1000;

```
courier_db=# SELECT username as user_name
courier_db=# ,useremail as user_email_id
courier_db=# from C_USER
courier_db=# where userID*roleid>1000;
 user_name |      user_email_id
-----|-----
 livilisa  | lisaparker559@gmail.com
 brewjoseph | josephjoshua326@yahoo.com
 aureliava | avawinters2534@yahoo.com
 bekybeth  | bethsummers290@gmail.com
 jimjulietejam | juliettehannigan3892@gmail.com
(5 rows)
```

- ❖ Use LEFT OUTER JOIN on tables role and login

➤ SELECT \* FROM C\_ROLE LEFT OUTER JOIN C\_LOGIN ON C\_ROLE.RoleID=C\_LOGIN.roleid;

```
courier_db=# SELECT * FROM C_ROLE LEFT OUTER JOIN C_LOGIN ON C_ROLE.RoleID=C_LOGIN.roleid;
roleid | rolename | roledescription | userid | loginid | loginusername | userpassword | userid | roleid
-----|-----|-----|-----|-----|-----|-----|-----|-----
3 | PACKAGE CHECKER | Person who checks the quality and efficiency of the courier to be delivered | 258 | alexerrol | Alexicalvert | AlexCalv@24 | 258 | 3
2 | BILLING AGENT | Person who generates the bill and alters it | 268 | swajohn | JohnMeston | WestJohn1923 | 268 | 2
1 | ADMINISTRATOR | manages the entire working of the system efficiently | 235 | macmary | MaryWhite | mariani#7112 | 235 | 1
6 | SCHEDULE INITIATOR | Prepares a schedule for the courier and makes sure that it is adhered | 864 | julisa | LisaParker | lisali52021 | 864 | 6
4 | TRACKER AGENT | Tracks the courier until it reaches the customer | 888 | joshyjoshua | Joseph Joshua | joshua#1878 | 888 | 4
5 | CRITIC | Accounts to the entire performance of the team and states pros and cons of the strategies applied | 937 | aweava | Ava Winters | vani^ava | 937 | 5
7 | PLAN AGENT | Plans the entire blueprint of the courier until it reaches the customer | 762 | bossbeth | Beth Summers | beth&ilie | 762 | 7
8 | ROUTE TRACER | Finds the optimum route between the courier system and the customer location | 546 | pb&julie | Juliette Hannigan | Juli*ette | 546 | 8
(8 rows)
```

## NESTED QUERIES

- ❖ Display the names and the customerID of the customer with the courier named "Chocolate courier"

➤ select fname, lname, customer\_ID from customer as cus where exists ( select cus.customer\_ID from customer cus, courier cr where cus.customer\_ID = cr.customer\_id and cr.couriername = 'Chocolate courier');

```
courier_db=# select fname, lname, customer_ID
courier_db=# from customer as cus
courier_db=# where exists ( select cus.customer_ID
courier_db=# from customer cus, courier cr
courier_db=# where cus.customer_ID = cr.customer_id
courier_db=# and cr.couriername = 'Chocolate courier');
 fname |  lname  | customer_id
-----|-----|-----
 Hannah | Dawson  | Helen2448
 Jake   | Rainfold | Jake2386
 Alice  | Autumn  | alice7912
 Tom    | Sawyer  | tom7281
 Taylor | Longfield | taylor1892
 Robin  | Hood    | robin8733
 Helen  | Wright  | helly9238
 Chris  | Hemisworth | chris9932
(8 rows)
```

- ❖ List all the customer details whose delivery was received on the next day

➤ select fname, customer\_id, customer\_mobile, customer\_email from customer as cus where exists ( select deliveryID from delivery d where d.deliverycusid = cus.customer\_id and delivery\_type = 'Next Day Delivery');

```
courier_db=# select fname, customer_id, customer_mobile, customer_email from customer as cus where exists ( select deliveryID from delivery d where d.deliverycusid = cus.customer_id and delivery_type = 'Next Day Delivery');
 fname | customer_id | customer_mobile | customer_email
-----|-----|-----|-----
 Helen | helly9238 | 9727938364 | helenwright9839@yahoo.com
 Jake  | Jake2386 | 9953916935 | jakeraifold3279@yahoo.com
 Tom   | tom7281 | 6328393490 | tomsawyer307@yahoo.com
 Robin | robin8733 | 7829384673 | greenhood8932@yahoo.com
(4 rows)
```

- ❖ List the customer names whose deliveries were obtained in the month of August.

➤

- select fname, lname, customer\_id from customer cus where exists( select deliveryID from delivery d where d.deliverycusid = cus.customer\_id and delivery\_date <= '2021-09-01' and delivery\_date >= '2021-08-01');

```
courier_db=# select fname, lname, customer_id from customer cus where exists( select deliveryID from delivery d where d.deliverycusid = cus.customer_id and delivery_date <= '2021-09-01' and delivery_date >= '2021-08-01');
fname | lname | customer_id
-----+-----+-----
Jake   | Rainfold | Jake2386
Hannah | Dawson | Helen2448
(2 rows)
```

- ❖ Display the usernames of the users with the roles "SCHEDULE INITIATOR" or "BILLING AGENT".

- select username from c\_user where roleid in( select roleid from c\_role where rolename = 'SCHEDULE INITIATOR' or rolename = 'BILLING AGENT');

```
courier_db=# select username
courier_db=# from c_user
courier_db=# where roleid in( select roleid
courier_db=# from c_role
courier_db=# where rolename = 'SCHEDULE INITIATOR' or rolename = 'BILLING AGENT');
username
-----
hogjohn
livilisa
(2 rows)
```

- ❖ List of all the users with exactly 1 role.

- select username, roleid from c\_user cu where( select count(roleid) from c\_role cr where cu.userid = cr.userid) =1;

```
courier_db=# select username, roleid
courier_db=# from c_user cu
courier_db=# where( select count(roleid)
courier_db=# from c_role cr
courier_db=# where cu.userid = cr.userid) =1;
username | roleid
-----+-----
crabeealex | 3
hogjohn | 2
hueremary | 1
livilisa | 6
brewjoseph | 4
aureliava | 5
beckybeth | 7
jimjulietejam | 8
(8 rows)
```

## PERFORMANCE ANALYSIS

1 Display the names and the customerID of the customer with the courier named "Chocolate courier"

```
select fname, lname, customer_ID
from customer as cus
where exists ( select cus.customer_ID
```

```

from courier cr

where cus.customer_ID = cr.customer_id

and cr.couriername = 'Chocolate courier');

```

```

courier_db=# explain analyze select fname, lname, customer_ID
courier_db=# from customer as cus
courier_db=# where exists ( select cus.customer_ID
courier_db=# from courier cr
courier_db=# where cus.customer_ID = cr.customer_id
courier_db=# and cr.couriername = 'Chocolate courier');

               QUERY PLAN
-----
Nested Loop  (cost=12.89..21.12 rows=1 width=134) (actual time=0.038..0.045 rows=2 loops=1)
-> HashAggregate  (cost=12.75..12.76 rows=1 width=58) (actual time=0.024..0.025 rows=2 loops=1)
    Group Key: (cr.customer_id)::text
    -> Seq Scan on courier cr  (cost=0.00..12.75 rows=1 width=58) (actual time=0.015..0.018 rows=2 loops=1)
        Filter: ((couriername)::text = 'Chocolate courier'::text)
        Rows Removed by Filter: 7
    -> Index Scan using customer_pkey on customer cus  (cost=0.14..8.16 rows=1 width=134) (actual time=0.007..0.007 rows=1 loops=2)
        Index Cond: ((customer_id)::text = (cr.customer_id)::text)
Planning Time: 0.393 ms
Execution Time: 0.088 ms
(10 rows)

```

2 List all the customer details whose delivery was received on the next day

```

select fname, customer_id, customer_mobile, customer_email

from customer as cus

where exists ( select deliveryID

from delivery d

where d.deliverycusid = cus.customer_id

and delivery_type = 'Next Day Delivery');

```

```

courier_db=# explain analyze select fname, customer_id, customer_mobile, customer_email
courier_db=# from customer as cus
courier_db=# where exists ( select deliveryID
courier_db=# from delivery d
courier_db=# where d.deliverycusid = cus.customer_id
courier_db=# and delivery_type = 'Next Day Delivery');

               QUERY PLAN
-----
Nested Loop  (cost=12.14..20.37 rows=1 width=252) (actual time=2.249..2.263 rows=4 loops=1)
-> HashAggregate  (cost=12.00..12.01 rows=1 width=58) (actual time=2.196..2.199 rows=4 loops=1)
    Group Key: (d.deliverycusid)::text
    -> Seq Scan on delivery d  (cost=0.00..12.00 rows=1 width=58) (actual time=2.180..2.183 rows=4 loops=1)
        Filter: ((delivery type)::text = 'Next Day Delivery'::text)
        Rows Removed by Filter: 4
    -> Index Scan using customer_pkey on customer cus  (cost=0.14..8.16 rows=1 width=252) (actual time=0.012..0.012 rows=1 loops=4)
        Index Cond: ((customer_id)::text = (d.deliverycusid)::text)
Planning Time: 2.663 ms
Execution Time: 2.446 ms
(10 rows)

```

3 List the customer names whose deliveries were obtained in the month of August.

```

select fname, lname, customer_id

from customer cus

where exists( select deliveryID

from delivery d

```



where d.deliverycusid = cus.customer\_id

and delivery\_date <= '2021-09-01' and delivery\_date >= '2021-08-01');

```
courier_db=# explain analyze select fname, lname, customer_id
courier_db=# from customer cus
courier_db=# where exists( select deliveryID
courier_db=# from delivery d
courier_db=# where d.deliverycusid = cus.customer_id
courier_db=# and delivery_date <= '2021-09-01' and delivery_date >= '2021-08-01');
QUERY PLAN
-----
Nested Loop (cost=12.54..20.77 rows=1 width=134) (actual time=0.036..0.042 rows=2 loops=1)
-> HashAggregate (cost=12.40..12.41 rows=1 width=58) (actual time=0.021..0.022 rows=2 loops=1)
    Group Key: (d.deliverycusid)::text
    -> Seq Scan on delivery d (cost=0.00..12.40 rows=1 width=58) (actual time=0.011..0.014 rows=2 loops=1)
        Filter: ((delivery_date <= '2021-09-01'::date) AND (delivery_date >= '2021-08-01'::date))
        Rows Removed by Filter: 6
    -> Index Scan using customer_pkey on customer cus (cost=0.14..8.16 rows=1 width=134) (actual time=0.007..0.007 rows=1 loops=2)
        Index Cond: ((customer_id)::text = (d.deliverycusid)::text)
Planning Time: 0.187 ms
Execution Time: 0.096 ms
(10 rows)
```

4 Display the usernames of the users with the roles "SCHEDULE INITIATOR" or "BILLING AGENT".

select username, userID, useremail

from c\_user

where roleid in( select roleid

from c\_role

where rolename = 'SCHEDULE INITIATOR' or rolename = 'BILLING AGENT');

```
courier_db=# explain analyze select username, userID, useremail
courier_db=# from c_user
courier_db=# where roleid in( select roleid
courier_db=# from c_role
courier_db=# where rolename = 'SCHEDULE INITIATOR' or rolename = 'BILLING AGENT');
QUERY PLAN
-----
Hash Join (cost=12.88..23.76 rows=1 width=380) (actual time=2.623..2.628 rows=2 loops=1)
    Hash Cond: (c_user.roleid = c_role.roleid)
    -> Seq Scan on c_user (cost=0.00..10.70 rows=70 width=384) (actual time=1.949..1.951 rows=8 loops=1)
    -> Hash (cost=12.85..12.85 rows=2 width=4) (actual time=0.627..0.628 rows=2 loops=1)
        Buckets: 1024 Batches: 1 Memory Usage: 9kB
        -> Seq Scan on c_role (cost=0.00..12.85 rows=2 width=4) (actual time=0.615..0.618 rows=2 loops=1)
            Filter: (((rolename)::text = 'SCHEDULE INITIATOR'::text) OR ((rolename)::text = 'BILLING AGENT'::text))
            Rows Removed by Filter: 6
Planning Time: 6.968 ms
Execution Time: 2.658 ms
(10 rows)
```

5 Display all the usernames and the roles of the users with exactly 1 role.

select cu.username, cu.roleid, rolename

from c\_user cu inner join c\_role cr

on cu.userID = cr.userID

where (select count(roleid)

from c\_role cr where cu.userid = cr.userid) =1;

```
courier_db=# explain analyze select cu.username, cu.roleid, rolename
courier_db=# from c_user cu inner join c_role cr
courier_db=# on cu.userID = cr.userID
courier_db=# where (select count(roleid)
courier_db=# from c_role cr where cu.userid = cr.userid) =1;
               QUERY PLAN
-----
Nested Loop  (cost=0.00..892.27 rows=3 width=120) (actual time=0.027..0.071 rows=8 loops=1)
  Join Filter: (cu.userid = cr.userid)
  Rows Removed by Join Filter: 56
  -> Seq Scan on c_user cu (cost=0.00..878.00 rows=1 width=66) (actual time=0.022..0.046 rows=8 loops=1)
      Filter: ((SubPlan 1) = 1)
      SubPlan 1
        -> Aggregate (cost=12.38..12.39 rows=1 width=8) (actual time=0.003..0.003 rows=1 loops=8)
            -> Seq Scan on c_role cr_1 (cost=0.00..12.38 rows=1 width=4) (actual time=0.001..0.002 rows=1 loops=8)
                Filter: (cu.userid = userid)
                Rows Removed by Filter: 7
        -> Seq Scan on c_role cr (cost=0.00..11.90 rows=190 width=62) (actual time=0.001..0.001 rows=8 loops=8)
Planning Time: 0.278 ms
Execution Time: 0.108 ms
(13 rows)
```

## MULTIPLE USERS WITH DIFFERENT ACCESS PRIVILEGES

### ➤ CREATE USERS

- create user user01 with password 'abcd' createdb;
- create user user02 with password 'bcde' createdb;
- create user user03 with password 'cdef' createdb;
- create user user04 with password 'defg' createdb;
- create user user05 with password 'efgh' createdb;

```
courier_db=# create user user01 with password 'abcd' createdb;
CREATE ROLE
courier_db=# create user user02 with password 'bcde' createdb;
CREATE ROLE
courier_db=# create user user03 with password 'cdef' createdb;
CREATE ROLE
courier_db=# create user user04 with password 'defg' createdb;
CREATE ROLE
courier_db=# create user user05 with password 'efgh' createdb;
CREATE ROLE
```

### ➤ PRIVILEGES GIVEN TO EACH USER

- grant select on COURIER to user01;
- grant select on C\_LOGIN to user01;
- grant select(userID) on C\_USER to user02;
- grant select(RoleID) on C\_ROLE to user02;
- grant select(customer\_ID) on CUSTOMER to user02;
- grant select(loginID) on C\_LOGIN to user02;
- grant select(PermissionID) on PERMISSION to user02;
- grant select(ManagerID) on MANAGER to user02;
- grant select(DeliveryID) on DELIVERY to user02;
- grant select,delete,update on PERMISSION to user03;
- grant select,insert on MANAGER to user04;
- grant all on all tables in schema public to user05;

```

courier_db=# grant select on COURIER to user01;
GRANT
courier_db=# grant select on C_LOGIN to user01;
GRANT
courier_db=# grant select(userID) on C_USER to user02;
GRANT
courier_db=# grant select(RoleID) on C_ROLE to user02;
GRANT
courier_db=# grant select(customer_ID) on CUSTOMER to user02;
GRANT
courier_db=# grant select(loginID) on C_LOGIN to user02;
GRANT
courier_db=# grant select(PermissionID) on PERMISSION to user02;
GRANT
courier_db=# grant select(ManagerID) on MANAGER to user02;
GRANT
courier_db=# grant select(DeliveryID) on DELIVERY to user02;
GRANT
courier_db=# grant select,delete,update on PERMISSION to user03;
GRANT
courier_db=# grant insert on MANAGER to user04;
GRANT
courier_db=# grant all on all tables in schema public to user05;
GRANT

```

## ➤ USER 01 ACCESS

```

PS C:\Users\User\Desktop\dbms_lab\dbms_assignment> psql courier_db user01
Password for user user01:
psql (12.8)
WARNING: Console code page (437) differs from windows code page (1252)
        8-bit characters might not work correctly. See psql reference
        page "Notes for Windows users" for details.
Type "help" for help.

courier_db=> select * from courier;

```

```

courier_db=> select * from courier;
 courierid | couriername | courierdescription | customer_id
-----
21 | Zepo Courier | Courier contains the electronic goods | Helen2448
22 | Flora courier | The courier contains the best picked flowers and plants | Jake2386
23 | chocolate courier | Courier has exquisite variety of chocolates | alicia0912
24 | Fruits Courier | Courier consists of fruits | tom7281
25 | Vegetables Courier | Courier contains vegetables | taylor1892
26 | clothes courier | courier that contains cloths | robin8733
27 | chocolate courier | Courier has exquisite variety of chocolates | helly9238
28 | Fruits Courier | Courier consists of fruits | chris9932
(8 rows)

```

```

courier_db=> select courierid from courier;

```

```

 courierid
-----
21
22
23
24
25
26
27
28
(8 rows)

```

```

courier_db=> select * from c_login;

```

loginid	loginusername	userpassword	userid	roleid
alexerrol	Alexicalvert	Alexicalv@24	258	3
swejohn	JohnWeston	westjohn1923	268	2
mccary	MaryWhite	mariam17112	235	1
julisa	LisaParker	lisa142821	864	6
joshyjoshua	Joseph Joshua	joshua41878	888	4
aweava	Ava Winters	vaniava	937	5
bossbeth	Beth Summers	beth1111	762	7
p08julie	Juliette Hannigan	juli'ette	546	8

(8 rows)

```

courier_db=> select * from delivery;
ERROR: permission denied for table delivery

```

Activate Windows  
Go to Settings to activate Windows.

## ➤ USER 02 ACCESS

```

PS C:\Users\User\Desktop\dbms_lab\dbms_assignment> psql courier_db user02
Password for user user02:
psql (12.8)
WARNING: Console code page (437) differs from windows code page (1252)
        8-bit characters might not work correctly. See psql reference
        page "Notes for Windows users" for details.
Type "help" for help.

courier_db=>

```



```
courier_db=> select userID from c_user;
userid
-----
258
268
235
864
888
937
762
546
(8 rows)
```

```
courier_db=> select RoleID from C_ROLE;
roleid
-----
1
2
3
4
5
6
7
8
(8 rows)
```

```
courier_db=> select LoginID from C_LOGIN;
loginid
-----
alexerrol
swajohn
macmary
lulisa
joshyjoshua
aweava
bossbeth
pb&julie
(8 rows)
```

```
courier_db=> select username from C_USER;
ERROR: permission denied for table c_user
courier_db=>
```

### ➤ USER 03 ACCESS

```
PS C:\Users\User\Desktop\dbms_lab\dbms_assignment> psql courier_db user03
Password for user user03:
psql (12.8)
WARNING: Console code page (437) differs from windows code page (1252)
8-bit characters might not work correctly. See psql reference
page "Notes for Windows users" for details.
Type "help" for help.
courier_db=> █
```

```
courier_db-> select * from PERMISSION;
permissionid | permissionmodule | permissionname
-----+-----+-----
11 | Payment module | Paytz
12 | SMS Notification module | Chatbotz
13 | Email Notification module | Mailzzz
14 | Delivery module | delizap
15 | Billing module | killBill
16 | Rate Monitor Module | Starzzz
17 | Service analysis Module | Buzzery
18 | Schedule Module | Notifier
(8 rows)
```

```
courier_db-> select PermissionID from PERMISSION;
permissionid
-----
11
12
13
14
15
16
17
18
(8 rows)
```

```
courier_db-> DELETE FROM PERMISSION WHERE PermissionID=15;
DELETE 1
courier_db-> DELETE FROM PERMISSION WHERE PermissionID=13;
DELETE 1
courier_db-> SELECT * FROM PERMISSION;
permissionid | permissionmodule | permissionname
-----+-----+-----
11 | Payment module | Paytz
12 | SMS Notification module | Chatbotz
14 | Delivery module | delizap
16 | Rate Monitor Module | Starzzz
17 | Service analysis Module | Buzzery
18 | Schedule Module | Notifier
(6 rows)
```

```
courier_db-> UPDATE PERMISSION
courier_db-> SET Permissionname='PayTzzz'
courier_db-> WHERE PermissionID=11;
UPDATE 1
courier_db-> SELECT * FROM PERMISSION;
permissionid | permissionmodule | permissionname
-----+-----+-----
12 | SMS Notification module | Chatbotz
14 | Delivery module | delizap
16 | Rate Monitor Module | Starzzz
17 | Service analysis Module | Buzzery
18 | Schedule Module | Notifier
11 | Payment module | PayTzzz
(6 rows)
```

```
courier_db-> SELECT * FROM MANAGER;
ERROR: permission denied for table manager
courier_db-> DELETE FROM CUSTOMER WHERE customer_id='Helen2448';
ERROR: permission denied for table customer
courier_db-> UPDATE MANAGER
courier_db-> SET ManagerID=12
courier_db-> WHERE ManagerID=11;
ERROR: permission denied for table manager
```

## > USER 04 ACCESS

```
PS C:\Users\User\Desktop\dbms_lab\dbms_assignment> psql courier_db user04
Password for user user04:
psql (12.8)
WARNING: Console code page (437) differs from Windows code page (1252)
8-bit characters might not work correctly. See psql reference
page "Notes for Windows users" for details.
Type "help" for help.
courier_db-> |
```

```
courier_db=> select * from MANAGER;
courier_db-> ;
```

managerid	manager_name	manager_addr	manager_phoneno	manager_email
31	Alex Calvert	40/44,corporation Shopping Comple, 1st Floot, R A Puram Chennai Tamil Nadu 600028	6127977399	alexcalvert2635@gmail.com

(1 row)

```
courier_db-> INSERT INTO MANAGER VALUES(32,'John Weston','Jagatram Tiwari Chwl, Main Kasturba Rd, Borivali (east),Mumbai, MAharashtra, 400066 ','7471491095','johnweston2298@yahoo.com');
INSERT 0 1
courier_db-> select * from MANAGER;
```

managerid	manager_name	manager_addr	manager_phoneno	manager_email
31	Alex Calvert	40/44,corporation Shopping Comple, 1st Floot, R A Puram Chennai Tamil Nadu 600028	6127977399	alexcalvert2635@gmail.com
32	John Weston	Jagatram Tiwari Chwl, Main Kasturba Rd, Borivali (east),Mumbai, MAharashtra, 400066	7471491095	johnweston2298@yahoo.com

(2 rows)

## ➤ USER 05 ACCESS

```
PS C:\Users\User\Desktop\dbms_lab\dbms_assignment> psql courier_db user05
Password for user user05:
psql (12.8)
WARNING: Console code page (437) differs from Windows code page (1252)
8-bit characters might not work correctly. See psql reference
page "Notes for Windows users" for details.
Type "help" for help.

courier_db=>
```

```
courier_db=> select * from Customer;
```

fname	mname	lname	customer_id	customer_mobile	customer_email	customer_address	customer_password
Hannah	Melen	Dawson	Helen2448	9673918831	hannahdawson3872@gmail.com	46/44,corporation Shopping Kasturba, 1st Floot, lonavala Pune Maharashtra 629028	Hannah38
Jake	Mering	Rainfold	Jake2386	9953916935	jakerainfold3279@yahoo.com	56-1-581, Hallakunta,Hyderabad, Telangana,198101	rainfold32
Alice	Green	Autumn	alice7912	8978232387	aliceautumn2168@gmail.com	Opposite Blue Lotus Restaurant, Near Peeling, Darjeling, West Bengal-738279	Alice#26
Tom	Cruise	Sawyer	tom7281	6328393498	tomcruise3872@yahoo.com	Kundazh Rd, Tiruvanthapuram, Kerala,283822	cruise!
Taylor	Cuss	Longfield	taylor1892	9837284039	taylorcuss8392@yahoo.com	D 13/6, Punjabi Basti, Chandigarh,Punjab 238746	taylor3
Robin	Green	Hood	robin8733	7829384673	greenthoo8932@yahoo.com	176/3 , Srinagar, Jammu and Kashmir, 232891	robin*
Helen	Bright	Wright	helly9238	9727938364	helenwright9839@yahoo.com	Jagatram Tiwari Chwl, Main Kasturba Rd, Borivali (east),Mumbai, MAharashtra, 400066	&height
Chris	Evan	Hemsworth	chris9932	7489323743	chrismiss3298@yahoo.com	#634/28, Bhopal ,Madhya Pradesh,783110	*83chris

(8 rows)

```
courier_db=> select * from Manager;
```

managerid	manager_name	manager_addr	manager_phoneno	manager_email
31	Alex Calvert	40/44,corporation Shopping Comple, 1st Floot, R A Puram Chennai Tamil Nadu 600028	6127977399	alexcalvert2635@gmail.com
32	John Weston	Jagatram Tiwari Chwl, Main Kasturba Rd, Borivali (east),Mumbai, MAharashtra, 400066	7471491095	johnweston2298@yahoo.com

(2 rows)

```
courier_db=> SELECT * FROM PERMISSION;
```

permissionid	permissionmodule	permissionname
11	Payment module	Paytz
12	SMS Notification module	Chatbotz
14	Delivery module	delizap
16	Rate Monitor Module	Starzzz
17	Service analysis Module	Buzzery
18	Schedule Module	Notifier

(6 rows)

```
courier_db=> INSERT INTO PERMISSION VALUES(13,'Email Notification module','Mailzzz');
INSERT 0 1
courier_db=> SELECT * FROM PERMISSION;
```

permissionid	permissionmodule	permissionname
12	SMS Notification module	Chatbotz
14	Delivery module	delizap
16	Rate Monitor Module	Starzzz
17	Service analysis Module	Buzzery
18	Schedule Module	Notifier
11	Payment module	PayTZzz
13	Email Notification module	Mailzzz

(7 rows)

```
courier_db-> SELECT * FROM MANAGER;
```

managerid	manager_name	manager_addr	manager_phoneno	manager_email
31	Alex Calvert	40/44,corporation Shopping Comple, 1st Floot, R A Puram Chennai Tamil Nadu 600028	6127977399	alexcalvert2635@gmail.com
32	John Weston	Jagatram Tiwari Chwl, Main Kasturba Rd, Borivali (east),Mumbai, MAharashtra, 400066	7471491095	johnweston2298@yahoo.com

(2 rows)

```
courier_db-> UPDATE MANAGER
courier_db-> SET manager_name='Alexis Calvert'
courier_db-> WHERE managerid=31;
UPDATE 1
courier_db-> SELECT * FROM MANAGER;
```

managerid	manager_name	manager_addr	manager_phoneno	manager_email
32	John Weston	Jagatram Tiwari Chwl, Main Kasturba Rd, Borivali (east),Mumbai, MAharashtra, 400066	7471491095	johnweston2298@yahoo.com
31	Alexis Calvert	40/44,corporation Shopping Comple, 1st Floot, R A Puram Chennai Tamil Nadu 600028	6127977399	alexcalvert2635@gmail.com

(2 rows)

```
courier_db-> DELETE
courier_db-> FROM MANAGER
courier_db-> WHERE managerid=31;
DELETE 1
courier_db-> SELECT * FROM MANAGER;
```

managerid	manager_name	manager_addr	manager_phoneno	manager_email
32	John Weston	Jagatram Tiwari Chwl, Main Kasturba Rd, Borivali (east),Mumbai, MAharashtra, 400066	7471491095	johnweston2298@yahoo.com

(1 row)

## INITIATE CONCURRENT TRANSACTIONS AND DEMONSTRATE THE CONCURRENCY CONTROL FOR THE CONFLICTING ACTIONS.

### ➤ TRANSACTION INSERT

The screenshot shows a terminal window with the following commands and output:

```
courier_db=# select * from PERMISSION;
```

permissionid	permissionmodule	permissionname
11	Payment module	Paytz
12	SMS Notification module	Chatbotz
13	Email Notification module	Mailzzz
14	Delivery module	delizap
16	Rate Monitor Module	Starzzz
17	Service analysis Module	Buzzery
18	Schedule Module	Notifier
15	Payment module	killBill

(8 rows)

```
courier_db=# insert into PERMISSION values(19,'Delivery module','Chris');
INSERT 0 1
courier_db=# select * from PERMISSION;
```

permissionid	permissionmodule	permissionname
11	Payment module	Paytz
12	SMS Notification module	Chatbotz
13	Email Notification module	Mailzzz
14	Delivery module	delizap
15	Billing module	killBill
16	Rate Monitor Module	Starzzz
17	Service analysis Module	Buzzery
18	Schedule Module	Notifier
19	Delivery module	Chris

(9 rows)

The terminal window also shows a file explorer on the right side of the desktop environment, displaying a list of files and folders.

### ➤ TRANSACTION UPDATE



The screenshot shows a terminal window with the following content:

```

rajeshwari@PES1UG19CS375: ~
File Edit View Search Terminal Help
(8 rows)
courier_db=# update PERMISSION set permissionmodule = 'Payment module' where per
missionid = 15;
UPDATE 1
courier_db=# update PERMISSION set permissionmodule = 'Payment module' where per
missionid = 15;
UPDATE 1
courier_db=# select * from PERMISSION;
permissionid | permissionmodule | permissionname
-----
11 | Payment module | Paytz
12 | SMS Notification module | Chatbotz
13 | Email Notification module | Mailzzz
14 | Delivery module | dellzap
15 | Billing module | killBill
16 | Rate Monitor Module | Starzzz
17 | Service analysis Module | Buzzery
18 | Schedule Module | Notifier
(8 rows)
courier_db=#
INSERT INTO COURIER VALUES(26,'Clothes courier','courier that co
INSERT INTO COURIER VALUES(27,'Chocolate courier','Courier has e
INSERT INTO COURIER VALUES(28,'Fruits Courier','Courier consists
INSERT INTO MANAGER VALUES(31,'Alex Calvert','40/44,corporation
','6127977399','alexcalvert263@gmail.com');
INSERT INTO DELIVERY VALUES('Hannah2448','41','Zepo delivery to MS
INSERT INTO DELIVERY VALUES('Jake2386','42','Flora delivery to MR
INSERT INTO DELIVERY VALUES('alice7912','43','Chocolate delivery t
INSERT INTO DELIVERY VALUES('ton7281','44','Fruits delivery to MR
INSERT INTO DELIVERY VALUES('taylor1892','45','Vegetables delivery

```

On the right, there is a table view titled 'insert.sql' showing the same data as the terminal output.

## ➤ TRANSACTION ATOMICITY

The screenshot shows a terminal window with the following content:

```

rajeshwari@PES1UG19CS375: ~
File Edit View Search Terminal Help
(8 rows)
courier_db=# update PERMISSION set permissionmodule = 'Payment module' where per
missionid = 15;
UPDATE 1
courier_db=# update PERMISSION set permissionmodule = 'Payment module' where per
missionid = 15;
UPDATE 1
courier_db=# select * from PERMISSION;
permissionid | permissionmodule | permissionname
-----
11 | Payment module | Paytz
12 | SMS Notification module | Chatbotz
13 | Email Notification module | Mailzzz
14 | Delivery module | dellzap
15 | Billing module | killBill
16 | Rate Monitor Module | Starzzz
17 | Service analysis Module | Buzzery
18 | Schedule Module | Notifier
(8 rows)
courier_db=#
courier_db=# insert into table PERMISSION values(19,'Delivery module','Chris');
ERROR: syntax error at or near "table"
LINE 1: insert into table PERMISSION values(19,'Delivery module','Ch...
^
courier_db=# insert into PERMISSION values(19,'Delivery module','Chris');
ERROR: current transaction is aborted, commands ignored until end of transactio
n block
courier_db=# end;
ROLLBACK
courier_db=#

```

On the right, there is a file explorer window showing a list of files and folders.

## ➤ LOCK IN TRANSACTION



Activities Terminal Tue 7:18 PM

rajeshwari@PES1UG19CS37S: ~

```
File Edit View Search Terminal Help
14 | Delivery module | dellzap
16 | Rate Monitor Module | Starzzz
17 | Service analysis Module | Buzzery
18 | Schedule Module | Notifier
15 | Payment module | killBill
(8 rows)

courier_db=# select * from PERMISSION;
permissionid | permissionmodule | permissionname
-----
11 | Payment module | Paytz
12 | SMS Notification module | Chatbotz
13 | Email Notification module | Mailzzz
14 | Delivery module | dellzap
16 | Rate Monitor Module | Starzzz
17 | Service analysis Module | Buzzery
18 | Schedule Module | Notifier
15 | Payment module | killBill
(8 rows)

courier_db=# update PERMISSION set permissionmodule = 'P
missionid = 15;
UPDATE 1
courier_db=#
```

rajeshwari@PES1UG19CS37S: ~

```
File Edit View Search Terminal Help
15 | Billing module | killBill
16 | Rate Monitor Module | Starzzz
17 | Service analysis Module | Buzzery
18 | Schedule Module | Notifier
(8 rows)

courier_db=# insert into PERMISSION values(19,'Delivery module','Chris');
INSERT 0 1
courier_db=# select * from PERMISSION;
permissionid | permissionmodule | permissionname
-----
11 | Payment module | Paytz
12 | SMS Notification module | Chatbotz
13 | Email Notification module | Mailzzz
14 | Delivery module | dellzap
15 | Billing module | killBill
16 | Rate Monitor Module | Starzzz
17 | Service analysis Module | Buzzery
18 | Schedule Module | Notifier
19 | Delivery module | Chris
(9 rows)

courier_db=# update PERMISSION set permissionmodule = 'Billing module' where per
missionid = 15;
UPDATE 1
courier_db=#
```

"transaction\_t2.sql" selected (174 bytes)

Activities Terminal Tue 7:18 PM

rajeshwari@PES1UG19CS37S: ~

```
File Edit View Search Terminal Help
17 | Service analysis Module | Buzzery
18 | Schedule Module | Notifier
15 | Payment module | killBill
(8 rows)

courier_db=# select * from PERMISSION;
permissionid | permissionmodule | permissionname
-----
11 | Payment module | Paytz
12 | SMS Notification module | Chatbotz
13 | Email Notification module | Mailzzz
14 | Delivery module | dellzap
16 | Rate Monitor Module | Starzzz
17 | Service analysis Module | Buzzery
18 | Schedule Module | Notifier
15 | Payment module | killBill
(8 rows)

courier_db=# update PERMISSION set permissionmodule = 'P
missionid = 15;
UPDATE 1
courier_db=# end transaction;
COMMIT
courier_db=#
```

rajeshwari@PES1UG19CS37S: ~

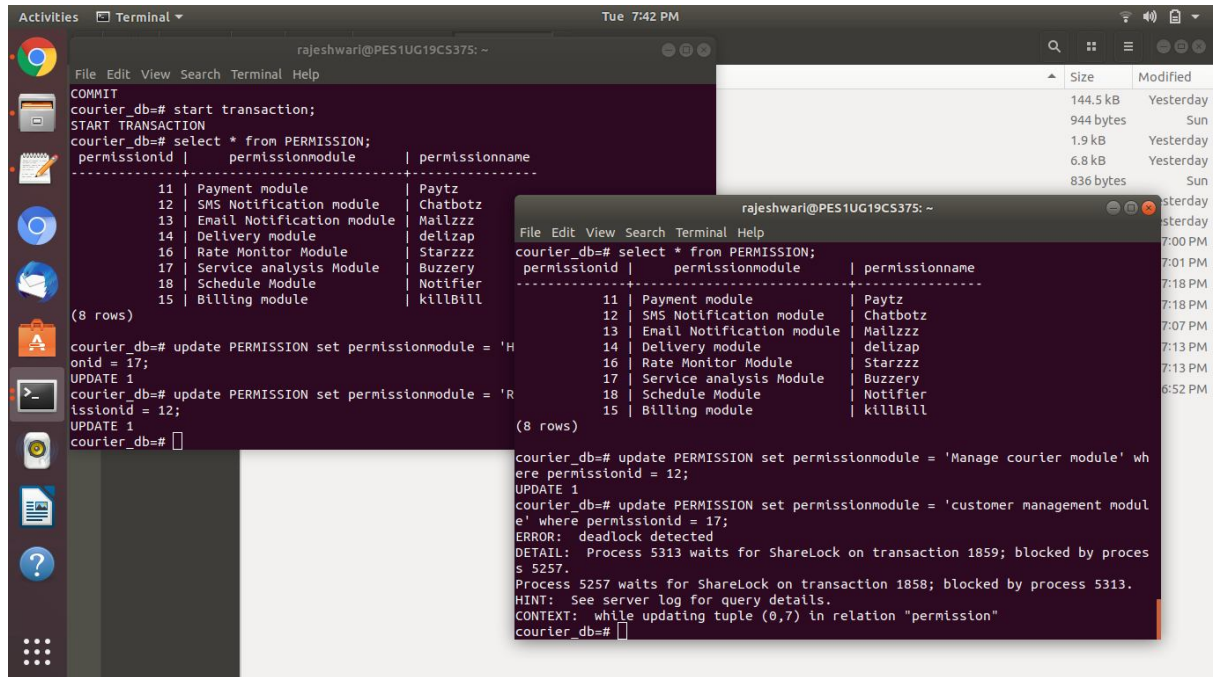
```
File Edit View Search Terminal Help
16 | Rate Monitor Module | Starzzz
17 | Service analysis Module | Buzzery
18 | Schedule Module | Notifier
(8 rows)

courier_db=# insert into PERMISSION values(19,'Delivery module','Chris');
INSERT 0 1
courier_db=# select * from PERMISSION;
permissionid | permissionmodule | permissionname
-----
11 | Payment module | Paytz
12 | SMS Notification module | Chatbotz
13 | Email Notification module | Mailzzz
14 | Delivery module | dellzap
15 | Billing module | killBill
16 | Rate Monitor Module | Starzzz
17 | Service analysis Module | Buzzery
18 | Schedule Module | Notifier
19 | Delivery module | Chris
(9 rows)

courier_db=# update PERMISSION set permissionmodule = 'Billing module' where per
missionid = 15;
UPDATE 1
courier_db=#
```

"transaction\_t2.sql" selected (174 bytes)

## ➤ DEADLOCK IN TRANSACTION



## CONTRIBUTION OF INDIVIDUAL MEMBERS OF THE TEAM

NAME	CONTRIBUTION	NO OF HOURS
RAMYA C	<ul style="list-style-type: none"> <li>→ COMPLEX QUERIES</li> <li>→ MULTIPLE USERS WITH DIFFERENT ACCESS PRIVILEGES.</li> <li>→ REPORT</li> </ul>	<u>2</u>
RAJESHWARI R	<ul style="list-style-type: none"> <li>→ SIMPLE QUERIES</li> <li>→ INITIATE CONCURRENT TRANSACTIONS AND DEMONSTRATE THE CONCURRENCY CONTROL FOR THE CONFLICTING ACTIONS.</li> </ul>	<u>2</u>
RUCHITHA V R	<ul style="list-style-type: none"> <li>→ NESTED QUERIES</li> </ul>	<u>2</u>