

CSC 461 ASMT 6.c

Jiaming Su NetID:jsu11

A

member_id	member_name	time_of_day	court_id	court_name	court_location	type_of_action
11331003	Tim Yu	20:00:00	1	Central Court	River Campus	booked

(1 row)

I only select the 'booked' or 'confirmed' reservation of today.

B

member_id	member_name	day	time_of_day	court_id	court_name	type_of_action	penalty_point
11331276	Jiaming SU	2016-04-17	08:00:00	1	Central Court	dropped	2
11331276	Jiaming SU	2016-04-18	10:00:00	1	Central Court	dropped	2
11331276	Jiaming SU	2016-04-19	10:00:00	1	Central Court	booked	2
11331276	Jiaming SU	2016-04-20	10:00:00	1	Central Court	booked	2

(4 rows)

member_id 11331276 's reservation is as shown. He has two dropped reservation and thus has 2 penalty point.

C

```
INSERT INTO reservation
VALUES (11019,11331276, now(),'booked',1,now()::date + integer '6', TIME '10:00');
Time: 5.298 ms
INSERT INTO reservation
VALUES (11020,11331276, now(),'booked',1,now()::date + integer '5', TIME '11:00');
INSERT 0 1
Time: 3.963 ms
```

First insert, because 11331276 has 2 penalty point, he do not have enough lead time to book a reservation in 6 days.

Second insert, insert successfully.

D

```
CREATE OR REPLACE VIEW m_s_next_reservation AS
SELECT reservation_id, day, time_of_day
FROM reservation
WHERE member_id = 11331276 AND
      type_of_action = 'booked'
ORDER BY day, time_of_day ASC
LIMIT 1;
CREATE VIEW
Time: 7.083 ms
UPDATE reservation
SET type_of_action = 'confirmed',
    time_stamp = ((SELECT day FROM m_s_next_reservation) +
                  (SELECT time_of_day FROM m_s_next_reservation))
WHERE reservation_id = (SELECT reservation_id FROM m_s_next_reservation);
UPDATE 1
Time: 3.423 ms
```

I create a view for the convenience of getting the next booked reservation.
I confirmed it on the reservation day and time_of_day.

E

```
UPDATE reservation
SET type_of_action = 'canceled',
    time_stamp = ((SELECT day FROM m_s_next_reservation) +
                  (SELECT time_of_day FROM m_s_next_reservation) -
                  interval '1 minutes')
WHERE reservation_id = (SELECT reservation_id FROM m_s_next_reservation);
UPDATE 1
Time: 2.586 ms
```

I use the view created in D.
I cancel the reservation 1 minute before the reservation day and time_of_day.

F

member_id	member_name	day	time_of_day	court_id	court_name	type_of_action	penalty_point
11331276	Jlaming SU	2016-04-17	08:00:00	1	Central Court	dropped	2
11331276	Jlaming SU	2016-04-18	10:00:00	1	Central Court	dropped	2
11331276	Jlaming SU	2016-04-20	11:00:00	1	Central Court	booked	2
11331276	Jlaming SU	2016-04-19	10:00:00	1	Central Court	confirmed	2
11331276	Jlaming SU	2016-04-20	10:00:00	1	Central Court	canceled	2

After Insert a tuple, confirmed a tuple and canceled a tuple, this is the result viewing member 11331276 again.

G

```
-- Trigger initially insertion should be 'booked'
INSERT INTO reservation
VALUES (10009,11331276, now(),'confirmed',1,now()::date + integer '5', TIME '08:00');
Time: 0.470 ms
-- Trigger Reservations can only be made on the working hour 8AM to 9PM.
INSERT INTO reservation
VALUES (12012,11331177, now(),'booked',1,now()::date + integer '5', TIME '08:02');
Time: 2.068 ms
-- Trigger No 2 reservation should be on the same court same day same time.
INSERT INTO reservation
VALUES (11012,11331177, now(),'booked',1,now()::date + integer '5', TIME '08:00');
Time: 0.746 ms
-- Trigger Reservation exceed the lead time.
INSERT INTO reservation
VALUES (10013,11331177, now(),'booked',1,now()::date + integer '8', TIME '08:00');
Time: 1.153 ms
-- Trigger confirm not within the time near the reservation.
UPDATE reservation
SET type_of_action = 'confirmed', time_stamp = now()
WHERE reservation_id = 10012;
Time: 0.671 ms
-- Trigger cancel reservation not before the time of the reservation.
UPDATE reservation
SET type_of_action = 'canceled', time_stamp = (now()::date + integer '5' + TIME '08:01')
WHERE reservation_id = 10012;
Time: 0.470 ms
-- Trigger Drop not after the time.
UPDATE reservation
SET type_of_action = 'dropped', time_stamp = (now()::date + integer '4' + TIME '08:59')
WHERE reservation_id = 10012;
Time: 0.439 ms
-- Trigger not enough lead day.
INSERT INTO reservation
VALUES (10016,11331079, now(),'booked',2,now()::date + integer '7', TIME '10:00');
Time: 1.619 ms
```

This are the insertion and updates I use to check my triggers and constraints.

```
psql:./crsdb-query-jsu11.sql:91: ERROR:  type_of_action in a reservation tuple should initially be booked.
psql:./crsdb-query-jsu11.sql:95: ERROR:  new row for relation "reservation" violates check constraint "reservation_time_of_day_check"
DETAIL:  Failing row contains (12012, 11331177, 2016-04-15 20:25:47.019314, booked, 1, 2016-04-20, 08:02:00).
psql:./crsdb-query-jsu11.sql:100: ERROR:  The Time Slot of that court is Not Available!
psql:./crsdb-query-jsu11.sql:104: ERROR:  Making a reservation exceeds maximum lead time
psql:./crsdb-query-jsu11.sql:109: ERROR:  Illegal Update on reservation
psql:./crsdb-query-jsu11.sql:114: ERROR:  Illegal Update on reservation
psql:./crsdb-query-jsu11.sql:119: ERROR:  Illegal Update on reservation
psql:./crsdb-query-jsu11.sql:124: ERROR:  Please make a reservation within your lead time!
postgres@vincentsjm-UX305FA:/home/vincentsjm/Developer/dbsys-461-jsu11-asmt-6c$
```