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CS425 - HW2
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I. SQL DDL (6 Points)

Question I. 1 (6 Points)
Write an SQL statement that creates a new table user that stores the userName, password, phone, email. The primary key being the userName. The phone must be filled, If the agent or customer is deleted it is removed from the user table. The email address must contain @.

```
create table user (
    userName varchar(15) NOT NULL
        constraint user_pk
            primary key,
    password varchar(20) NOT NULL,
    phone int NOT NULL
        constraint user_agentphone_fk
            references agent(phone),
        constraint user_customerphone_fk
    email varchar(255) NOT NULL
        constraint emailcheck
            check ((email)::text ~~ '_%@_'::text)
```

II. SQL Query (32 points)

Question I. 1 (2.5 Points) Write the SQL statement that returns the name of the customer that flew to Boston.

```
SELECT customerName
FROM customer
INNER JOIN booking ON
        customer.phone = booking.phone
INNER JOIN flight  ON
        booking.airlineCode = flight.airlineCode
WHERE flight.IATA = 'BOS';
```

Question II. 2 (3.5 Points) Write the SQL statement that returns the total amount of money spent by each customer for ticket booking.

```
SELECT sum(price) as total
FROM booking
GROUP BY phone
```

Question II.3 (3.5 Points) Write the SQL statement that returns the name of the customer that booked tickets via the agent 'Aline'. The query shall return the booking of the customer even if that particular booking was made by other agents, as long as the customer once booked with agent 'Aline'.

```
SELECT customer.customerName from customer
INNER JOIN booking ON
        customer.phone = booking.phone
WHERE booking.agentName = 'Aline'
```

Question II.4 (4 Points)
Write the SQL statement that returns the airlinecode that never flies via Boston city.

```
SELECT *
FROM flight
WHERE IATA NOT IN 'BOS' AND IATALands NOT IN 'BOS'
```

Question II.5 (4.5 Points)
Write the SQL statement that returns customer names that spent more than 500 on average for ticket purchase.

```
SELECT customer.name, avg(price)
FROM customer
INNER JOIN booking ON
        phone = booking.phone
GROUP BY customer.phone
HAVING avg(price) >= 500
```

Question II.6 (4.5 Points)
Write the SQL statement that returns the flightNumber from BOS to EWR whose price is less than 400 booked via the agent Aline. The price shall include agent booking fee + flight cost.

```
SELECT booking.flightNumber
FROM flight
INNER JOIN booking ON
        flight.flightNumber = booking.flightNumber
INNER JOIN agent ON
        booking.agentName = agent.agentName
WHERE IATA = 'BOS' AND
        'IATALands' = 'EWR' AND
        booking.agentName = 'Aline' AND
        (booking.price + flight.price) < 400
```

Question II.7 (4.5 Points)
Write the SQL statement that returns the customer names that have spent less than 500 on individual ticket booking.

```
SELECT DISTINCT customer.name
FROM customer
INNER JOIN booking ON
        customer.phone = booking.phone
WHERE price < 500
```

Question II.8 (5 Points)
Write the SQL expression that returns the average price of items bought by each customer from each agent.

```
SELECT agent.agentName, avg(price)
FROM agent
INNER JOIN booking ON
        agent.agentName = booking.agentName
```

```
GROUP BY agent.agentName
```

III SQL updates (12 points)

Question III.1 (4 Points) Write the SQL statement that inserts UA flights with a similar schedule to AA flights.

```
INSERT INTO flight
        SELECT 'UA', 707, price, seat, IATA, IATALands, timeDep, timeArr, data
        FROM flight
        WHERE flightNumber = 'AA'
```

Note: In above query, it is assumed that price for UA flight is same as AA flight.

Q III 2.

```
delete from flight where flightNumber not in (select flightNumber from Booking where agentName = 'John');
```

Q III 3.

```
update flight set price = case when IATA ='BOS' and flightNumber='AA' then price * 1.1;
      when IATA='FLL' and flightNumber='AA' then price * 0.95; else price END;
```

Question III.2 (4 Points) Write the SQL statement that deletes the flights which agent 'John ' did not book.

```
DELETE FROM flight
WHERE flightnumber NOT IN (SELECT flightNumber
                                    FROM booking
                                    WHERE agentName = 'John')
```

Question III.3 (4 Points) Write the SQL statement (only one statement) that increases the price of the AA flight going to Boston by 10% and reduces the price of the AA flight going to Florida by 5%.

```
UPDATE flight
SET price = case
WHEN IATA = 'BOS' AND flightNumber = 'AA' THEN price*1.1
WHEN IATA = 'FLL' AND flightNumber = 'AA' THEN price*0.95
ELSE price
END
```