

Ashna Saju

### DBMS Task 3

#### Automated Car Parking Management System

##### Table Details:

##### parking\_Location

|   | parking_id | Location |
|---|------------|----------|
| ▶ | 12         | Floor 1  |
|   | 13         | Floor 1  |
|   | 14         | Floor 2  |
|   | 15         | Floor 3  |
|   | 16         | Floor 10 |
| * | NULL       | NULL     |

##### parking\_space

|   | space_id | space |
|---|----------|-------|
| ▶ | 12       | Slot1 |
|   | 13       | Slot1 |
|   | 14       | Slot3 |
|   | 15       | Slot5 |
|   | 16       | Slot2 |
| * | NULL     | NULL  |

##### parking\_space\_slot

|   | slot_id | parking_id | space_id |
|---|---------|------------|----------|
| ▶ | 23      | 12         | 12       |
|   | 24      | 13         | 13       |
|   | 25      | 14         | 14       |
|   | 26      | 15         | 15       |
|   | 27      | 16         | 16       |
| * | NULL    | NULL       | NULL     |

## vehicle

|   | vehide_id | license_plate | make      | model   | color  |
|---|-----------|---------------|-----------|---------|--------|
| ▶ | 13        | PQR123        | BMW       | X5      | Silver |
|   | 14        | STU456        | Mercedes  | E-Class | Black  |
|   | 17        | JKL567        | Chevrolet | Malibu  | Silver |
|   | 18        | MNO890        | Hyundai   | Elantra | White  |
|   | 21        | VWX789        | Toyota    | Corolla | Gray   |
| ✱ | NULL      | NULL          | NULL      | NULL    | NULL   |

## parking\_slot\_allocation

|   | allocation_id | slot_id | vehide_id | entry_time          | exit_time           |
|---|---------------|---------|-----------|---------------------|---------------------|
| ▶ | 17            | 23      | 17        | 2023-12-25 13:30:00 | 2023-12-25 16:30:00 |
|   | 18            | 24      | 18        | 2023-12-25 10:00:00 | 2023-12-25 22:00:00 |
|   | 19            | 25      | 13        | 2023-12-25 10:00:00 | 2023-12-25 21:30:00 |
|   | 20            | 26      | 14        | 2023-12-25 10:30:00 | 2023-12-25 22:00:00 |
|   | 21            | 27      | 21        | 2023-12-25 16:00:00 | 2023-12-25 19:00:00 |
| ✱ | NULL          | NULL    | NULL      | NULL                | NULL                |

## User

|   | user_id | username      | password      |
|---|---------|---------------|---------------|
| ▶ | 17      | emma_davis    | pass1234      |
|   | 18      | nathan_wilson | secure5678    |
|   | 19      | oliver_jones  | password9999  |
|   | 20      | ava_smith     | securepass123 |
|   | 21      | mia_brown     | pass4567      |
| ✱ | NULL    | NULL          | NULL          |

## payment

|   | payment_id | allocation_id | amount_paid | payment_method | time                |
|---|------------|---------------|-------------|----------------|---------------------|
| ▶ | 17         | 17            | 18.00       | Credit Card    | 2023-07-25 14:30:00 |
|   | 18         | 18            | 25.00       | Cash           | 2023-07-25 18:30:00 |
|   | 19         | 19            | 22.50       | Credit Card    | 2023-07-25 21:00:00 |
|   | 20         | 20            | 12.00       | Cash           | 2023-07-25 11:30:00 |
|   | 21         | 21            | 17.00       | Credit Card    | 2023-07-25 15:30:00 |
| * | NULL       | NULL          | NULL        | NULL           | NULL                |

### Queries:

a. List all the cars that were parked in slot1 of Floor1 from 10.00am to 10.00pm on 25-12-2023 .

```

• SELECT v.license_plate, v.make, v.model, v.color
FROM parking_slot_allocation pa
JOIN parking_space_slot ps ON pa.slot_id = ps.slot_id
JOIN parking_location pl ON ps.parking_id = pl.parking_id
JOIN parking_space p ON ps.space_id = p.space_id
JOIN vehicle v ON pa.vehicle_id = v.vehicle_id
WHERE pl.location = 'Floor1'
AND p.space = 'Slot1'
AND pa.entry_time >= '2023-12-25 10:00:00'
AND pa.exit_time <= '2023-12-25 22:00:00';

```

| Result Grid |               |           |         |        |
|-------------|---------------|-----------|---------|--------|
|             | license_plate | make      | model   | color  |
| ▶           | JKL567        | Chevrolet | Malibu  | Silver |
|             | MNO890        | Hyundai   | Elantra | White  |

b. List the total revenue for the month of July

```

• SELECT SUM(amount_paid) AS total_revenue
FROM payment
WHERE MONTH(time) = 7 AND YEAR(time) = 2023;

```

|   | total_revenue |
|---|---------------|
| ▶ | 94.50         |

