DATABASE MANAGEMENT SYSTEMS (10211CS207)

# TASK:12

**VEHICLE SERVICE ,MAINTAINENCE AND TRACKER**

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| --- | --- |
| **Team Details:** |  |
| **Team members:** |
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**AIM:**

To develop a microproject on Vehicle Service Maintainence and Tracker System.

1. **ER Diagram:**

**AIM**:

To implement a conceptual design through FTR for Vehicle Service Maintainence and Tracker System.

**PROCEDURE:**

**Identifying entites:**

* 1. VEHICLE
  2. OWNER
  3. SERVICE\_RECORD
  4. MAINTENANCE

**Identifying attributes:**

**VEHICLE**-Owner\_ID,Name,Email,Phone\_Number,Address,City,State,Registration\_Date **OWNER**: Owner\_ID, First\_Name, Last\_Name, Email, Phone\_Number,

**SERVICE\_RECORD**: Service\_ID, Vehicle\_ID, Service\_Date, Service\_Type, Mileage\_At\_Service, Next\_Service\_Date, Next\_Service\_Mileage, Total\_Cost, Mechanic\_ID, Status

**MAINTENANCE**: Maintenance\_ID, Vehicle\_ID, Maintenance\_Type, Scheduled\_Date, Completion\_Date, Service\_Provider, Cost, Status

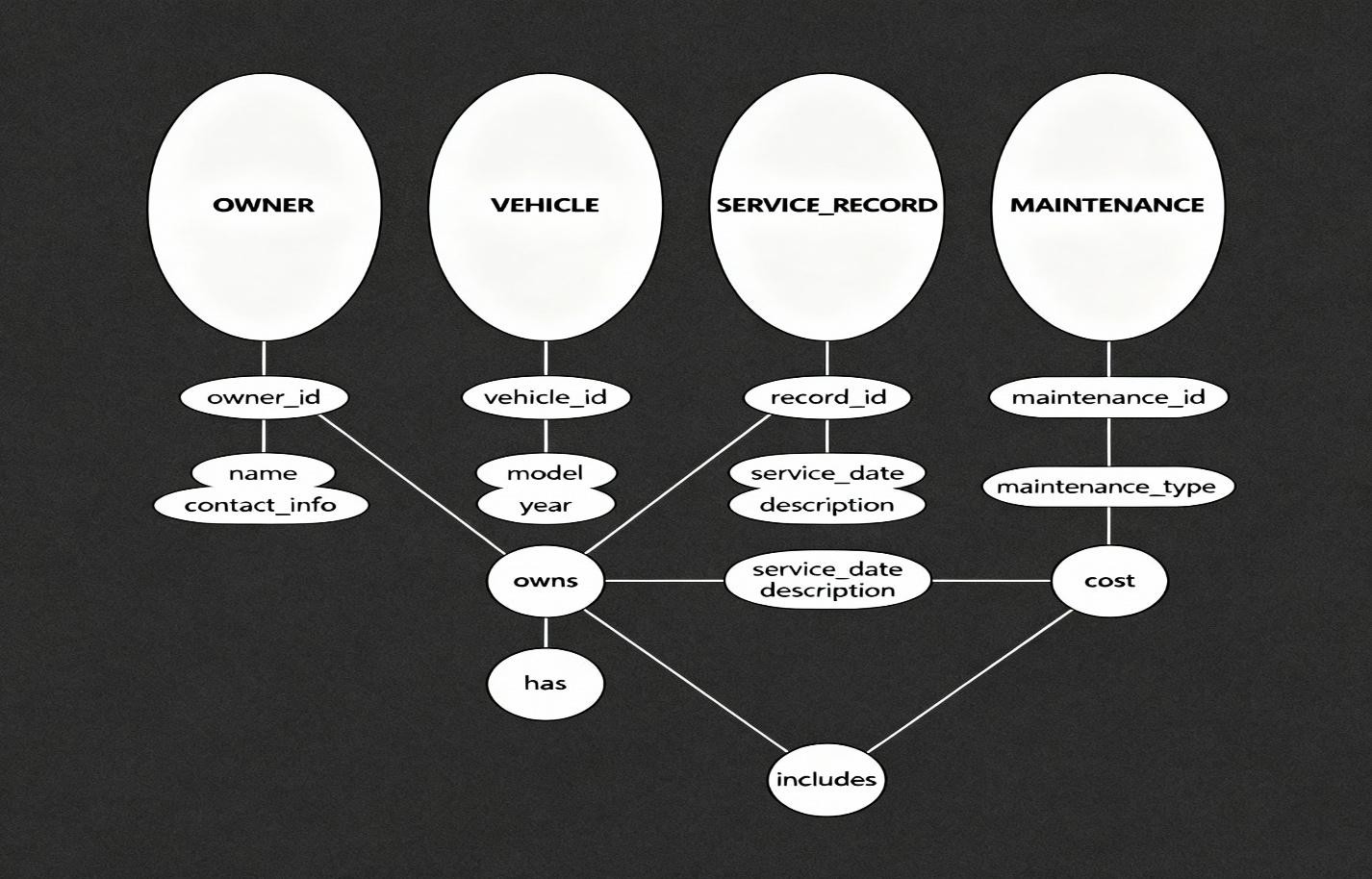
**Identifying relationships:**

* + - OWNER to VEHICLE
    - VEHICLE to SERVICE\_RECORD
    - VEHICLE to MAINTENANCE
    - SERVICE\_RECORD to MAINTENANCE

**Identifying the cardinality:**

* + - OWNER (1) — (M) VEHICLE
    - VEHICLE (1) — (M) SERVICE\_RECORD
    - VEHICLE (1) — (M) MAINTENANCE
    - SERVICE\_RECORD (1) — (0..M) MAINTENANCE

**ER DIAGRAM:**

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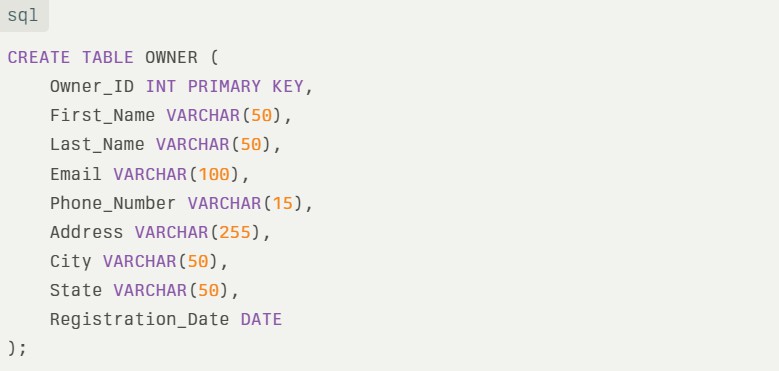
**Result:** Implementation of conceptual design through FTR for Vehicle Service Maintainence and Tracker System is successfully executed.

**02. SQL Queries & Relational operations:**

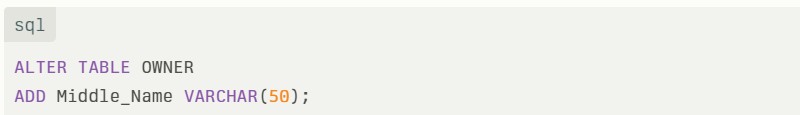
**Aim**: To execute relational operationms ,sql,aggregate,join &nested queries for Vehicle Service Maintainence and Tracker System.

**DDL commands:**

1. **create :**

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1. **alter:**

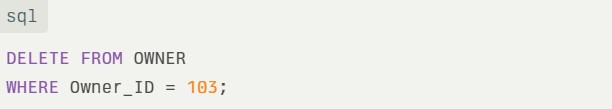
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**DML commands: 1.insert:**

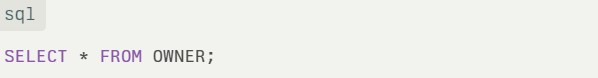
1. **update:**

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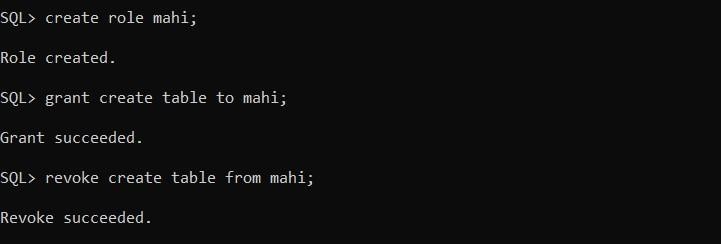
1. **delete:**

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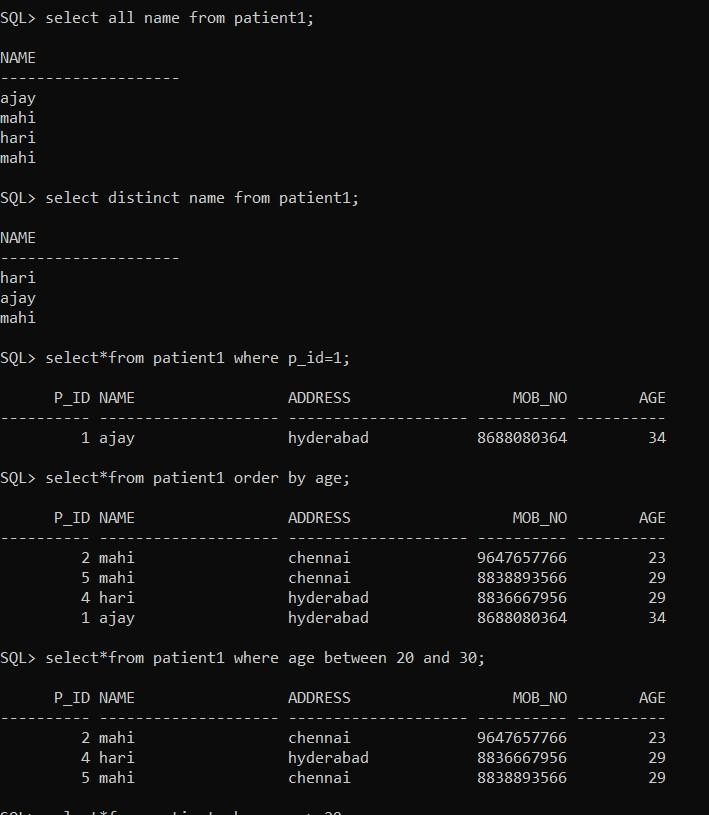
**DQL commands:**

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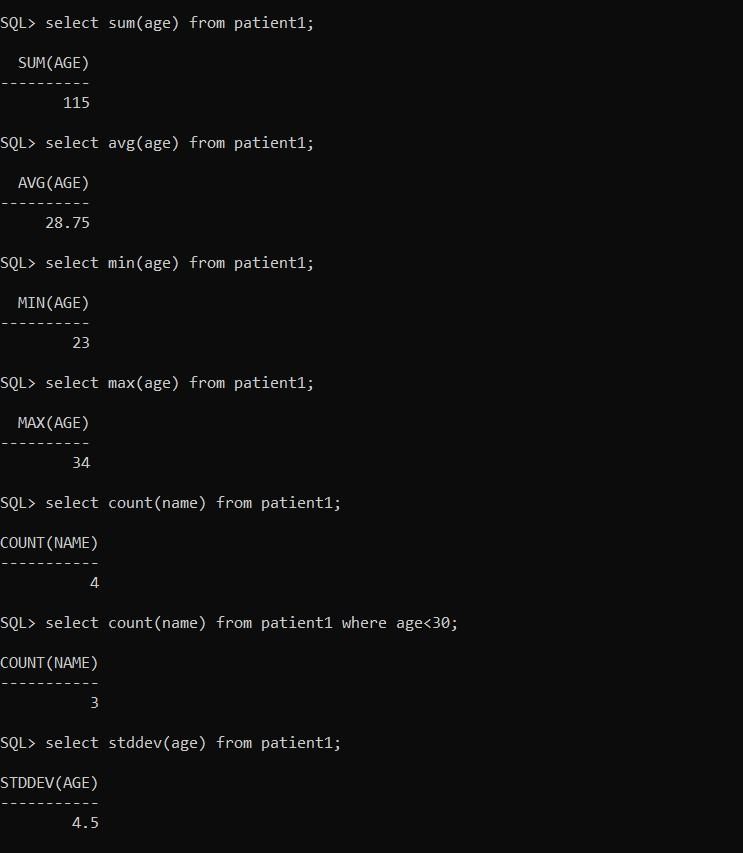
**DCL Commands:**

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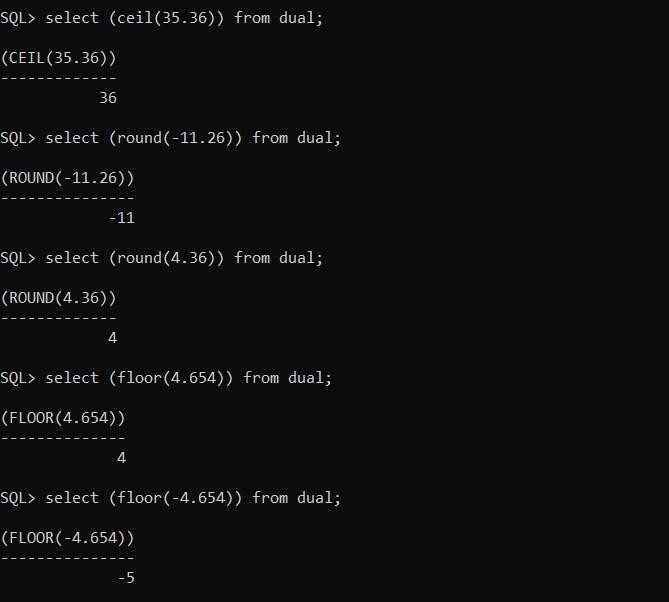
**DML single row functions and operators:**

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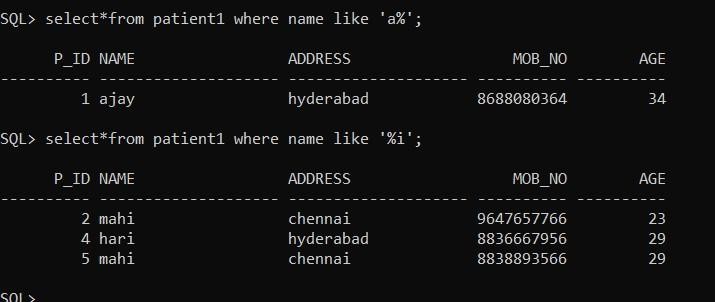
**Aggregate functions:**

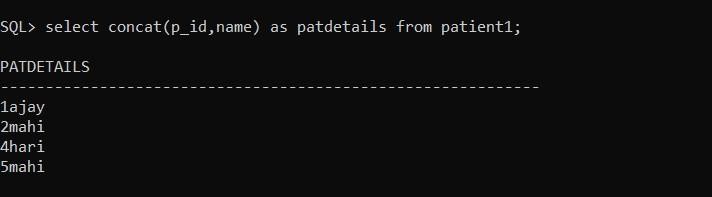
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**Mathematical functions:**

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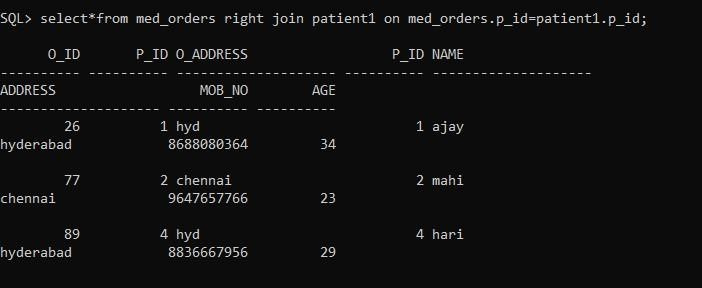
**String functions:**

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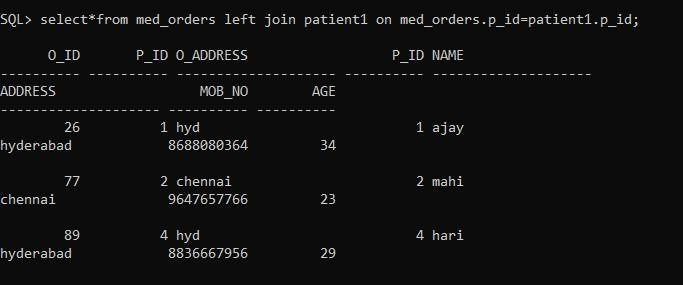


**SQL Joins:**

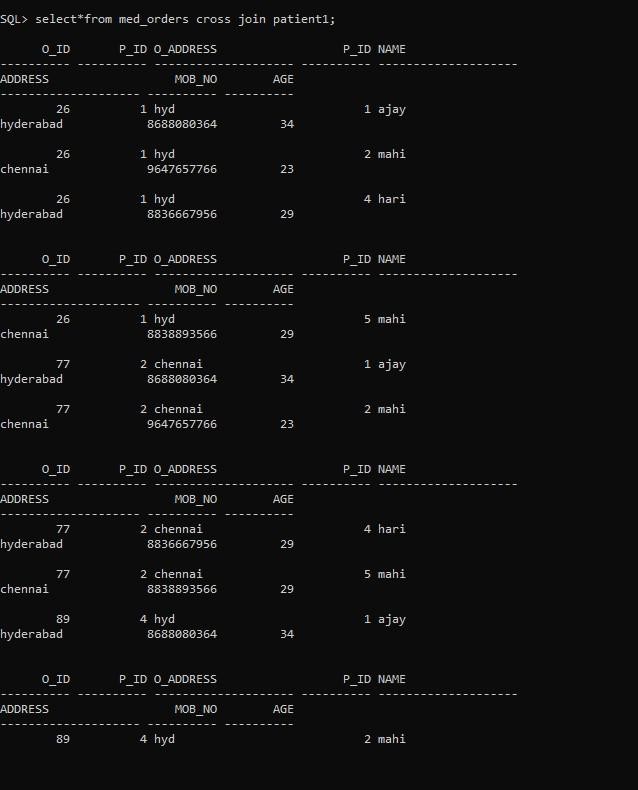
1. **right join:**

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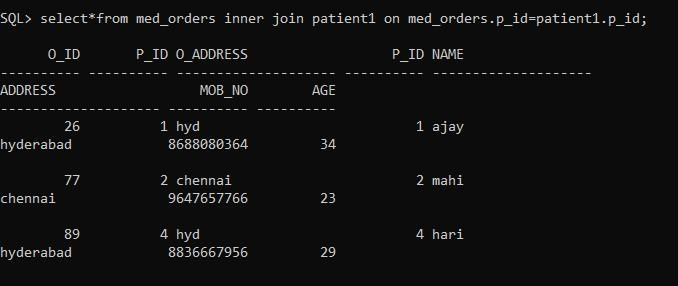
1. **left join:**

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1. **cross join:**



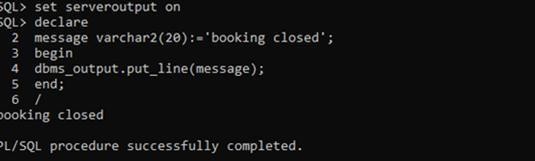
1. **inner join:**



# PL/SQL

**Procedure:**

**Sample program for printing a sentence:**

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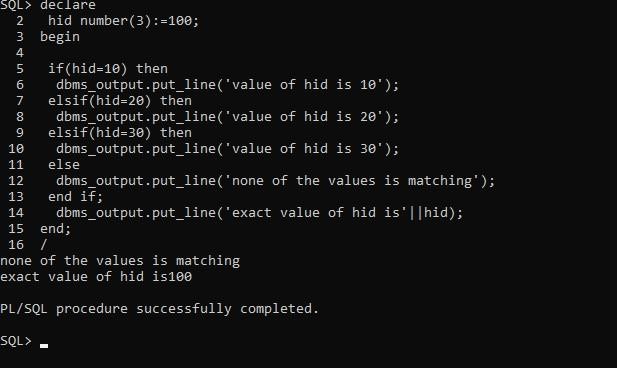
**Static input:**

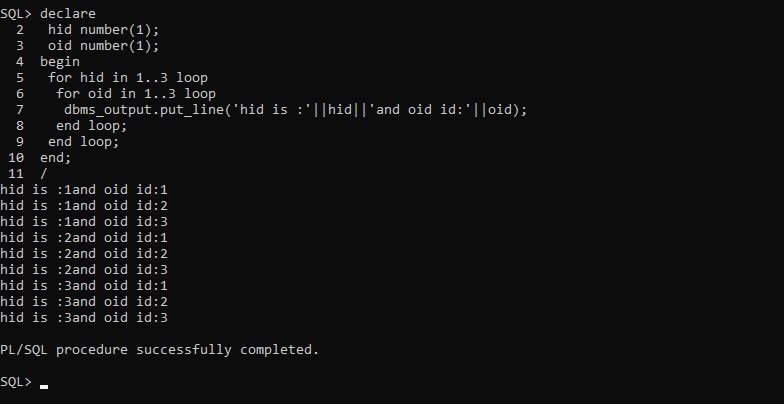
****

**Dynamic input:**

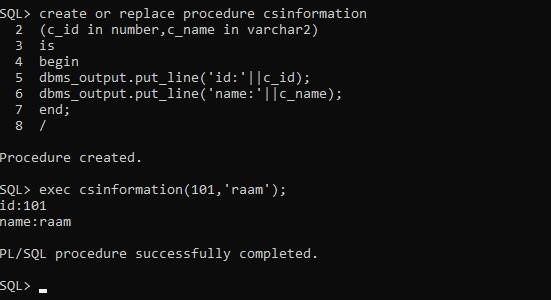


**Sample program for loops:**

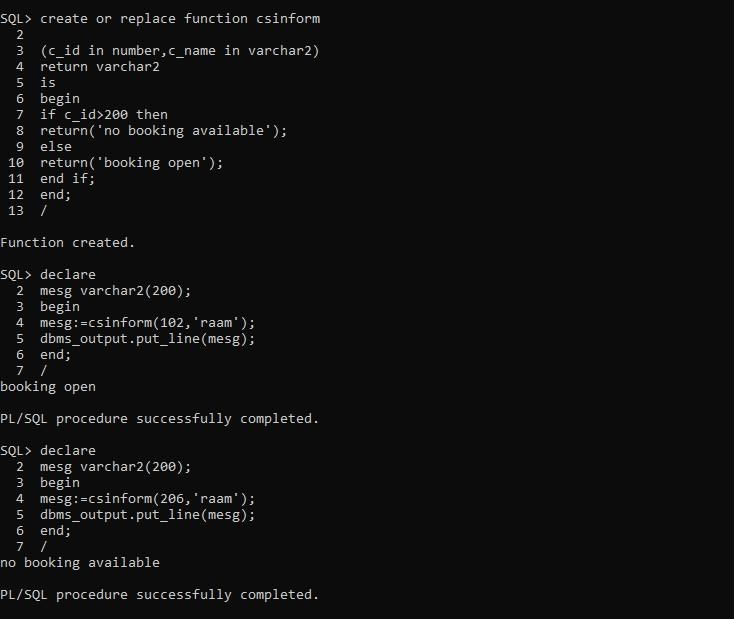
****



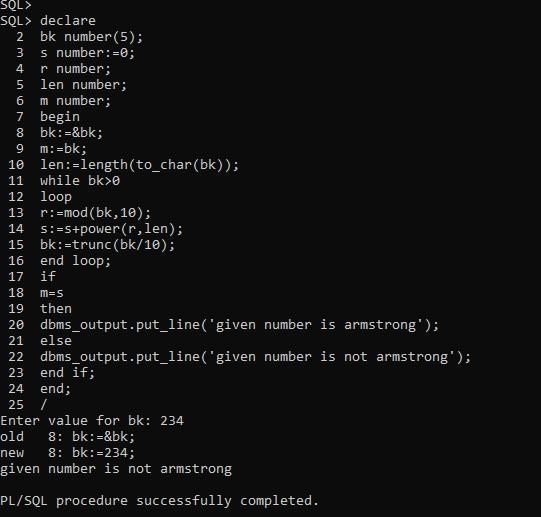
**Sample program for only procedure:**

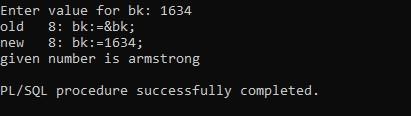
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**Sample program for only function:**



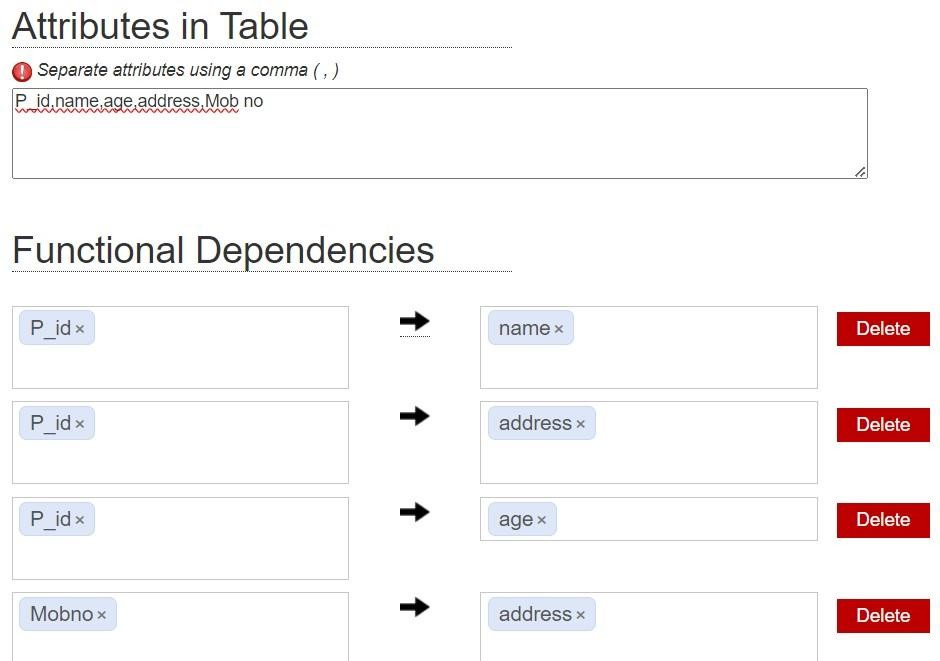
**to check the given customer booking number is Armstrong**



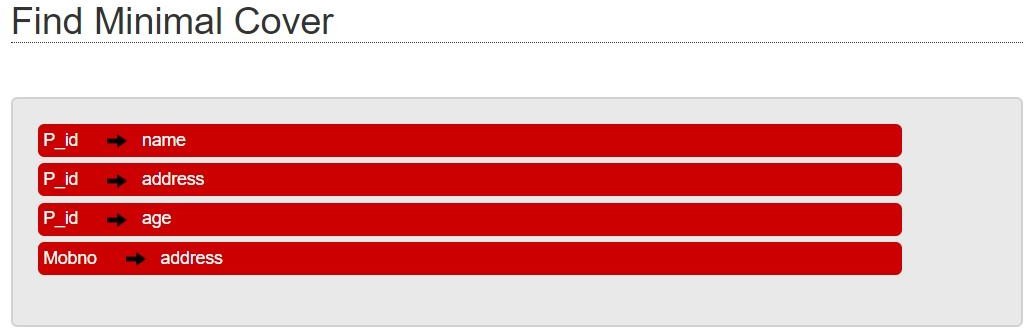
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**Result**: thus the execution of the relational operations,sql aggregates,joint&nested queries are successfully executed.

## Normalisation:

**Aim: to** execute the normalisation forms for 1NF,2NF 3NF BCNF using Griffith tool **Attributes and functional dependencies:**

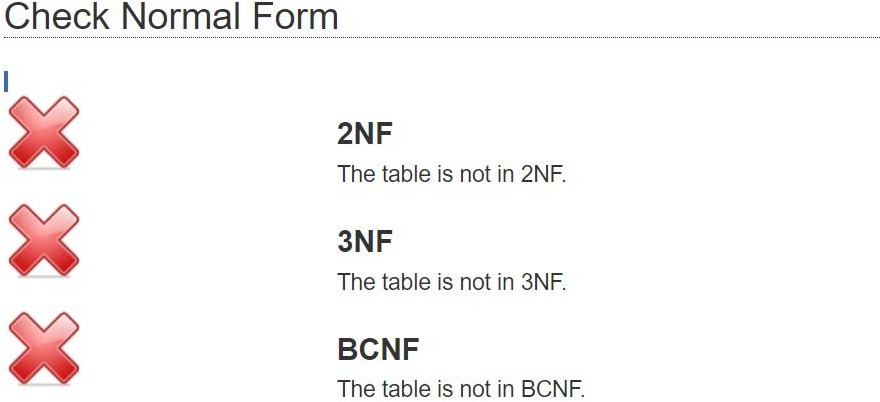
**Minimal cover:**

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**Candidate keys:**

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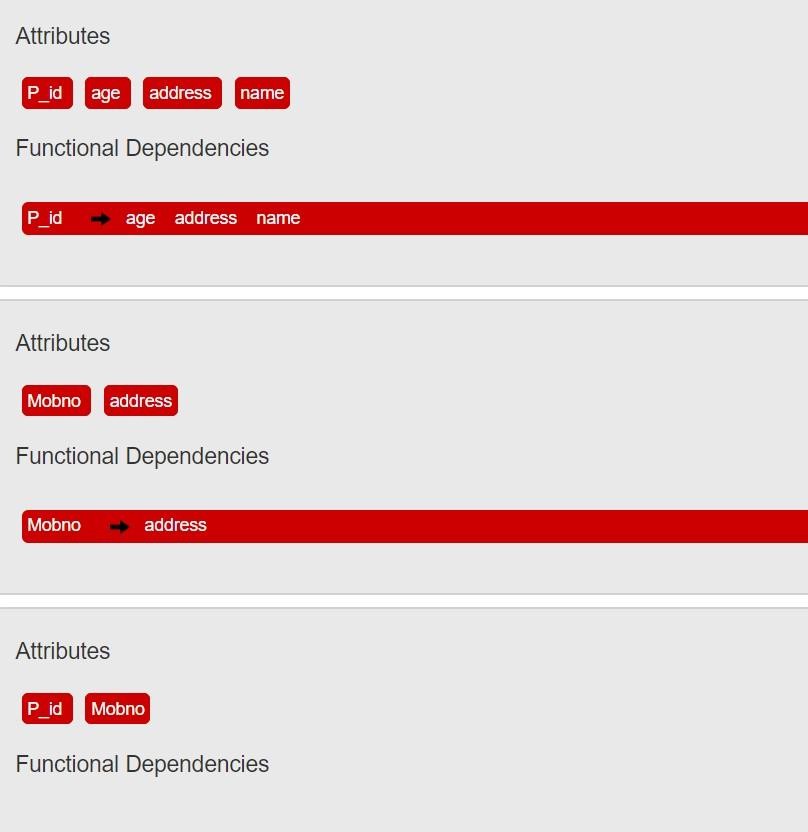
**Normal form:**

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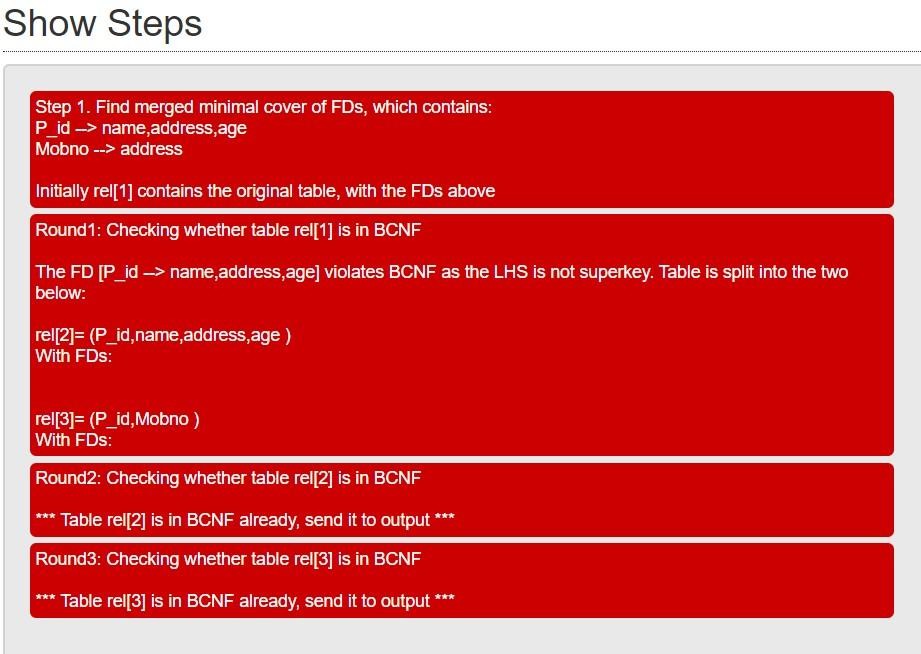
**2NF:**

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**3NF:**



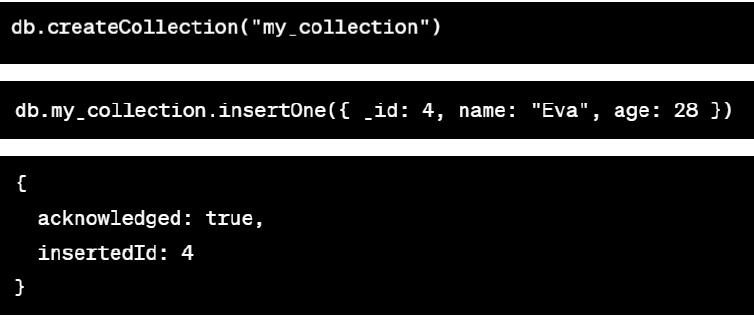
**BCNF:**

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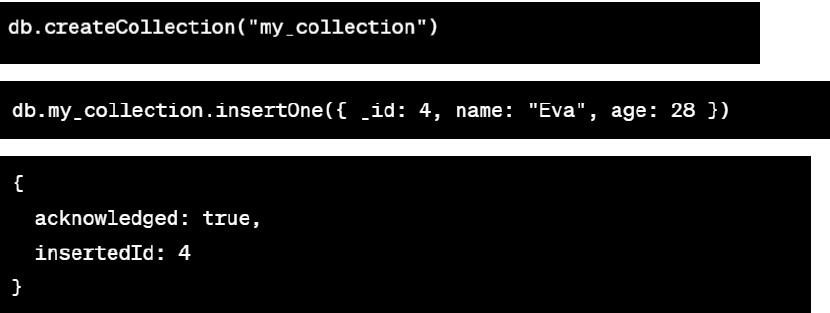
**Result:** Thus the normalisation to 1NF,2NF,3NF,BCNF is completed successfully

## mangoDB

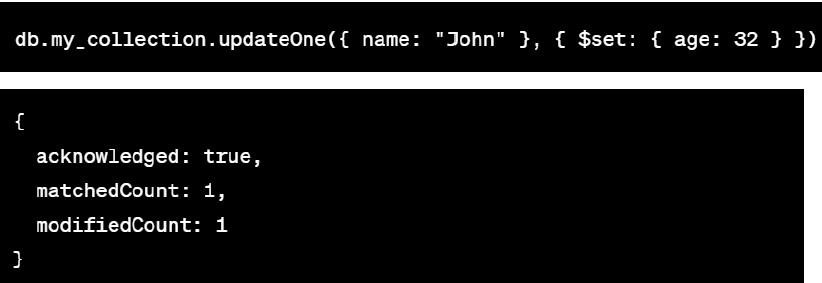
**Aim**: To implement the document database by using mangosh **Create:**

****

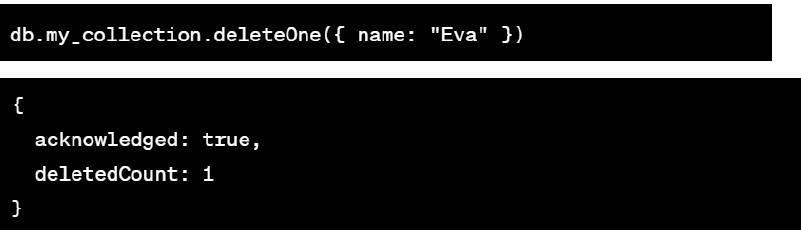
**Read:**

****

**Update:**

****

**Delete:**



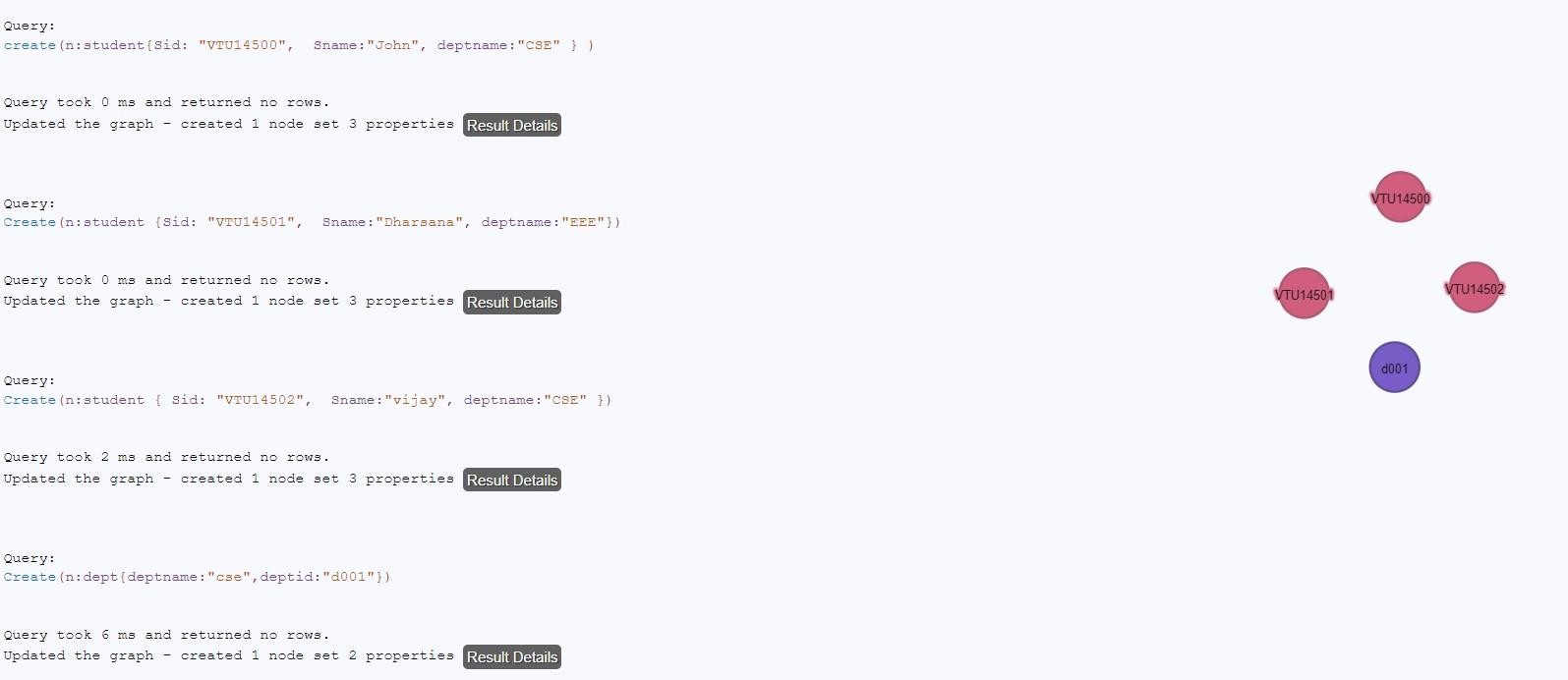
**Result:**

Thus CRUD using NPM design on MongoDB designing document database and performing CRUD operations like creating, inserting, querying, finding, removing operations are

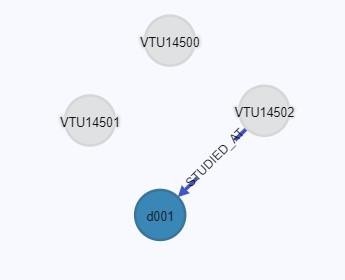
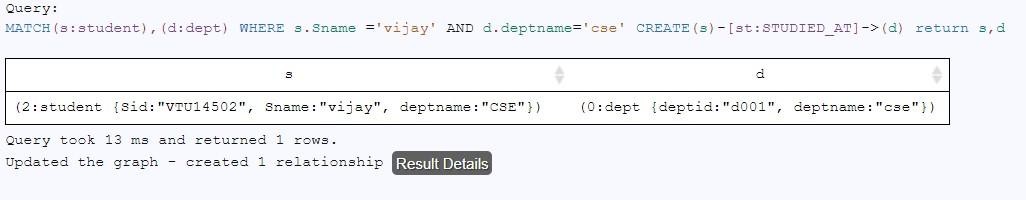
performed

## graph database

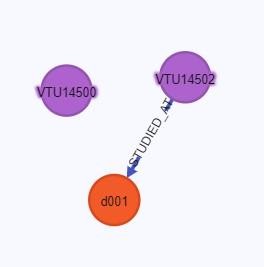
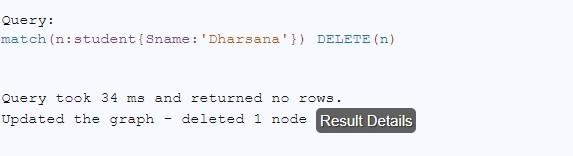
**Create:**

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**Relate:**



**Delete:**



**Result:**

Thus the implementation of CRUD operations in graph spaces is completed successfully.

**Result:** thus micro project for Vehicle Service,Maintainence and Tracking System was developed and implemented successfully.