**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

**“JnanaSangama”, Belgaum -590014, Karnataka.**

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**LAB REPORT**

**on**

**Database Management Systems (23CS3PCDBM)**

***Submitted by***

**Jayasheela (1BM25CS460)**

***in partial fulfillment for the award of the degree of***

**BACHELOR OF ENGINEERING**

***in***

**COMPUTER SCIENCE AND ENGINEERING**

****

**B.M.S. COLLEGE OF ENGINEERING**

**(Autonomous Institution under VTU)**

**BENGALURU-560019**

**Sep-2024 to Jan-2025**

**B.M.S. College of Engineering,**

**Bull Temple Road, Bangalore 560019**

(Affiliated To Visvesvaraya Technological University, Belgaum)

**Department of Computer Science and Engineering**

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**CERTIFICATE**

This is to certify that the Lab work entitled “Database Management Systems (23CS3PCDBM)” carried out by **Jayasheela (1BM25C460),** who is bonafide student of **B.M.S. College of Engineering.** It is in partial fulfillment for the award of **Bachelor of Engineering in Computer Science and Engineering** of the Visvesvaraya Technological University, Belgaum. The Lab report has been approved as it satisfies the academic requirements in respect of a Database Management Systems (23CS3PCDBM) work prescribed for the said degree.

|  |  |
| --- | --- |
| Lab faculty Rashmi H  Assistant Professor  Department of CSE, BMSCE | Dr Kavitha sooda  Professor & HOD  Department of CSE, BMSCE |

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**PROGRAM 1: INSURANCE DATABASE**

Person (driver\_id: string, name: string, address: string)

Car (reg\_num: string, model: string, year: int)

Accident (report\_num: int, accident\_date: date, location: string)

Owns (driver\_id: string, reg\_num: string)

Participated (driver\_id: string,reg\_num: string, report\_num: int, damage\_amount: int)

## SCHEMA DIAGRAM

**A diagram of a car accident

AI-generated content may be incorrect.**

i. Create the above tables by properly specifying the primary keys and the foreign keys.

CREATE DATABASES

Query:

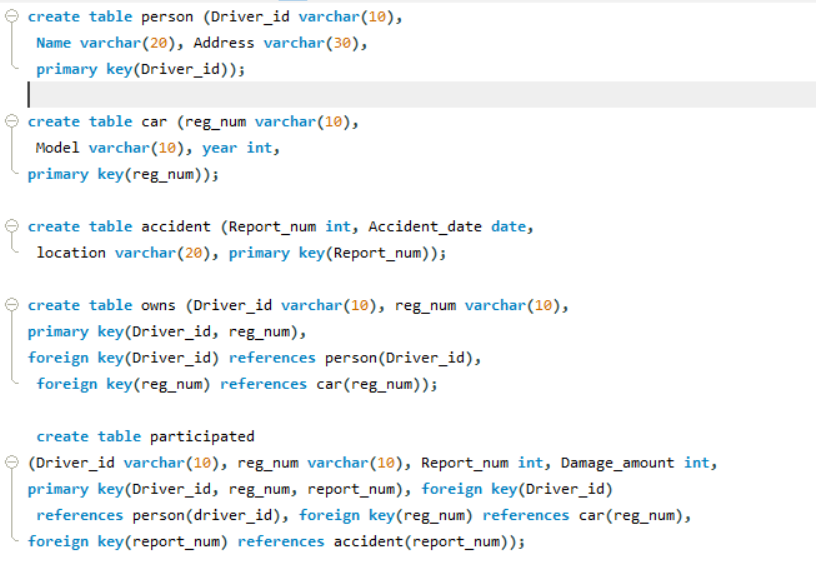
A screenshot of a computer

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Create Tables:



**STRUCTURE OF THE TABLES:**

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AI-generated content may be incorrect.**

**INSERTING VALUES TO THE TABLE:**

ii. Enter at least five tuples for each relation.

**Person table:**

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**Car Table:**

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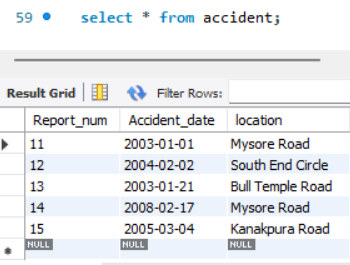
**A screenshot of a computer

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**Accident Table:**

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**OwnsTable:  
  
**

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**Participated table:**

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**iii.** Display Accident date and location

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iv. Update the damage amount to 25000 for the car with a specific reg-num for which the accident report number was 12.

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v. Add a new accident to the database.

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vi. Display driver id who did accident with damage amount greater than or equal to Rs.25000

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**Program 2. More Queries on Insurance database**

**i.** Display the entire CAR relation in the ascending order of manufacturing year.

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ii. Find the number of accidents in which cars belonging to a specific model (example 'Lancer') were involved.

**A screenshot of a computer program

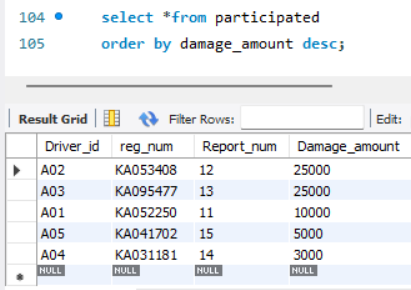
AI-generated content may be incorrect.**

iii. Find the total number of people who owned cars that were involved in accidents in 2008.

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iv.List the entire participated relation in the descending order of damage amount.

****

v.Find the average damage amount

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vi.Delete the tuple whose damage amount is below the average damage amount

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*vii. List the name of drivers whose damage is greater than the average damage amount.*

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vii. Find maximum damage amount.

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**Program 3:bank database**

**A diagram of a bank branch

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Branch (branch-name: String, branch-city: String, assets: real)

BankAccount(accno: int, branch-name: String, balance: real)

BankCustomer (customer-name: String, customer-street: String, customer-city: String)

Depositer(customer-name: String, accno: int)

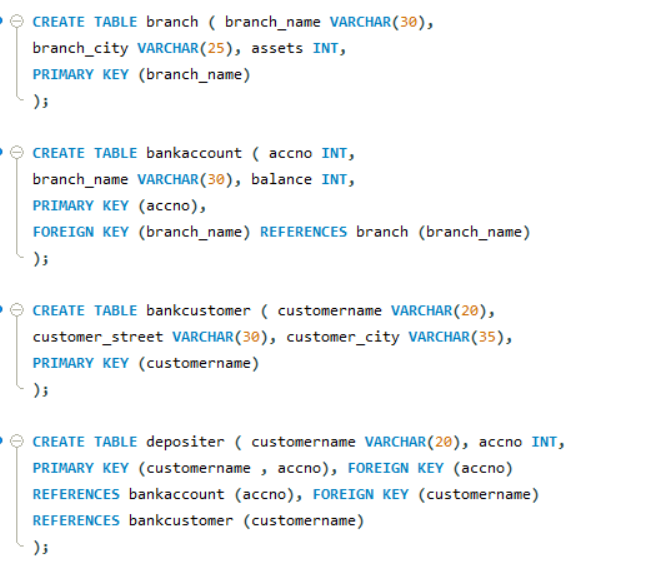
Loan(loan-number: int, branch-name: String, amount: real)

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**CREATE TABLES:**

i. Create the above tables by properly specifying the primary keys and the foreign keys.



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**STRUCTURE OF THE TABLES:**

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**INSERTING VALUES TO THE TABLE:**

ii. Enter at least five tuples for each relation.

**Branch table :**

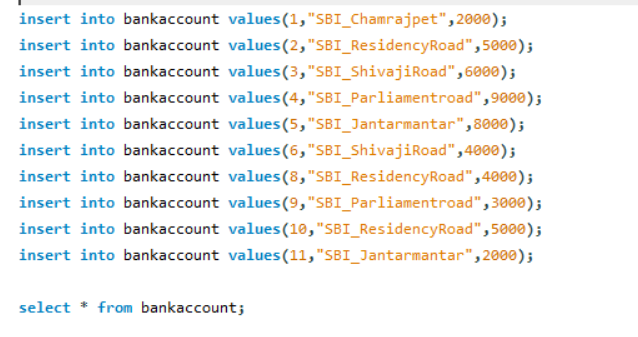
**A computer code with text

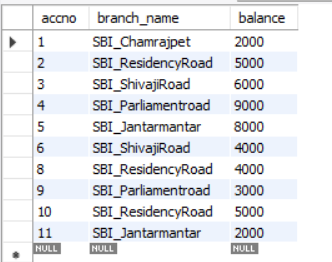
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**Bankaccount Table:**

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Banckcustomer Table:

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**Depositor Table:**

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**Loan Table:**

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**Borrower Table:**

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iii. Display the branch name and assets from all branches in lakhs of rupees and rename the assets column to 'assets in lakhs'.

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iv. Find all the customers who have at least two accounts at the same branch (ex. SBI\_ResidencyRoad).

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v. Create a view which gives each branch the sum of the amount of all the loans at the branch.

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**Program 4:More Queries on bank Database**

i. Find all the customers who have an account at all the branches located in a specific city (Ex. Delhi).

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ii.Find all customers who have a loan at the bank but do not have an account.

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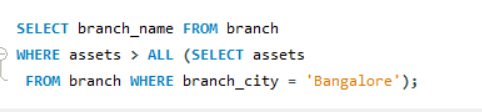
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iii. Find all customers who have both an account and a loan at the Bangalore brach.

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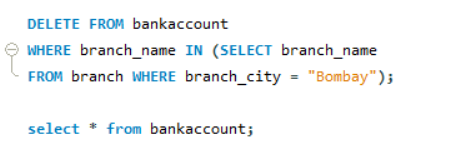
iv. Find the names of all branches that have greater assets than all branches located in Bangalore.



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v. Demonstrate how you delete all account tuples at every branch located in a specific city (Ex. Bombay).



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vi. Update the Balance of all accounts by 5%

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**Program 5:Employee Database**

**ER Diagram:**

**A diagram of a company

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**Schema Diagram:**

**A diagram of a company's work flow

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**Create Database:**

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i. Using Scheme diagram, create tables by properly specifying the primary keys and the foreign keys.

Create Tables:

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A screenshot of a computer code

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###### *STRUCTURE OF TABLE:*

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ii. Enter greater than five tuples for each table.

Dept table:

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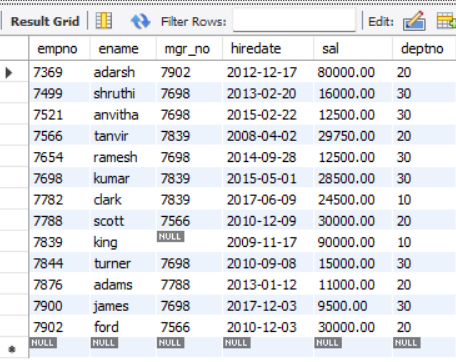
A screenshot of a computer

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Employee Table:

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Incentives Table:

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A screenshot of a data grid

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Project Table:

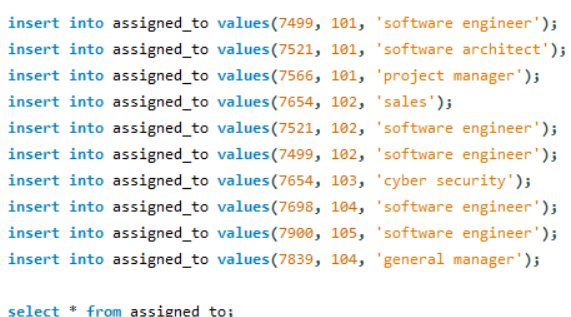
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Assigned\_to Table:



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iii. Retrieve the employee numbers of all employees who work on project located in Bengaluru, Hyderabad, or Mysuru

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iv. Get Employee ID’s of those employees who didn’t receive incentives

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v. Write a SQL query to find the employees name, number, dept, job\_role, department location and project location who are working for a project location same as his/her department location.

**A close-up of a computer code

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**A screenshot of a computer

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**Program 6: More Queries on Employee Database**

i. List the name of the managers with the maximum employees

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ii. Display those managers name whose salary is more than average salary of his employee.

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iii. Find the name of the second top level managers of each department.

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AI-generated content may be incorrect.

iv. Find the employee details who got second maximum incentive in January 2019.

A close-up of text

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v. Display those employees who are working in the same department where his manager is working.

A close-up of a computer code

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**A diagram of parts and catalog

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###### *Create Database:*

A screenshot of a computer

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i. Using Scheme diagram, create tables by properly specifying the primary keys and the foreign keys.

###### *Create tables:*

A screenshot of a computer program

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###### *Structure of tables:*

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A screenshot of a computer program

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ii. Insert appropriate records in each table.

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A list of values on a white background

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**Program Database :8**

i. Find the pnames of parts for which there is some supplier.

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ii. Find the snames of suppliers who supply every part.

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iii. Find the snames of suppliers who supply every red part. A screenshot of a computer program

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iv. Find the pnames of parts supplied by Acme Widget Suppliers and by no one else.

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vi. Find the sids of suppliers who charge more for some part than

the average cost of that part (averaged over all the suppliers who supply that part).

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vii. For each part, find the sname of the supplier who charges the most for that part.

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**NoSQL:**i. Write NoSQL Queries on “Restaurant” collection

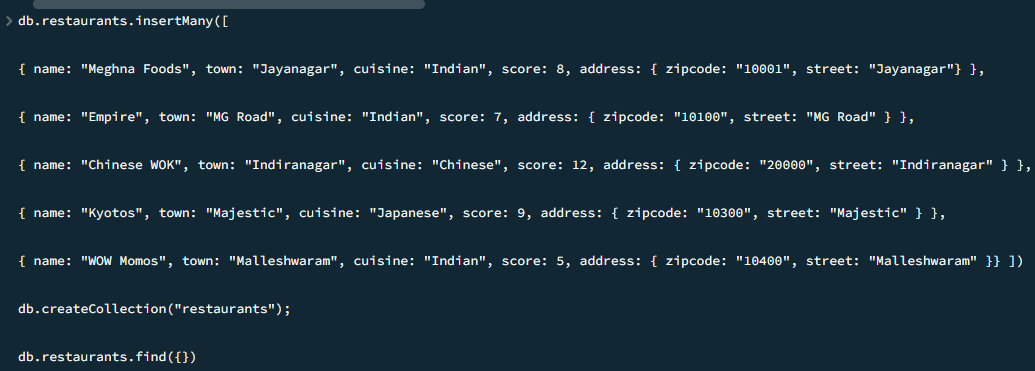
ii. Write a MongoDB query to display all the documents in the collection restaurants.

iii. Write a MongoDB query to arrange the name of the restaurants in descending along with all the columns.

iv. Write a MongoDB query to find the restaurant Id, name, town and cuisine for those restaurants which achieved a score which is not more than 10.

v. Write a MongoDB query to find the average score for each restaurant.

vi. Write a MongoDB query to find the name and address of the restaurants that have a zip code that starts with '10'.



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A screen shot of a computer code

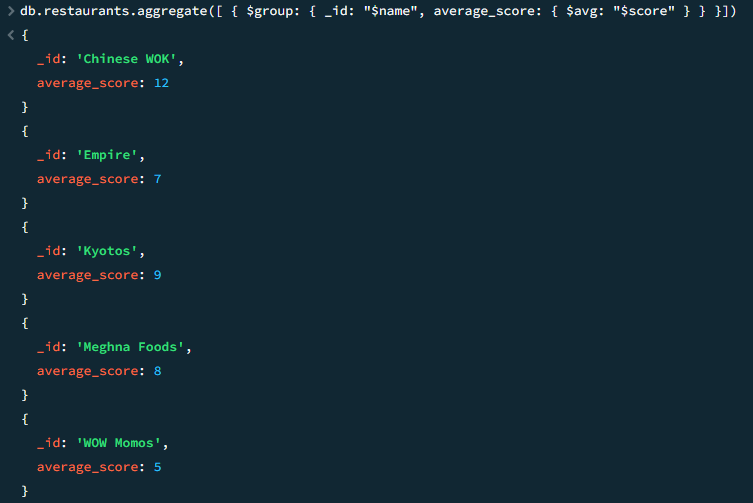
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A screen shot of a computer program

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A computer screen shot of a computer code

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