**RDBMS PROJECT FILE**

Submitted for the partial fulfilment of the

Degree of

Bachelor of Technology (Computer Science and Engineering)



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**INTRODUCTION**

We need to create a database schema design based on the following (simplified) requirements of the COMPANY Database:

 The company is organized into branches. Each branch has a name, unique ID and an employee who manages the branch. We keep track of the branch supplier by storing the records of the supplier name and the supply type. A branch may have several branch suppliers.

 Each branch handles a number of clients.

 We store each employee’s ID number, address, salary, sex, and birthdate.

 Each employee works for one branch but may work with several clients.

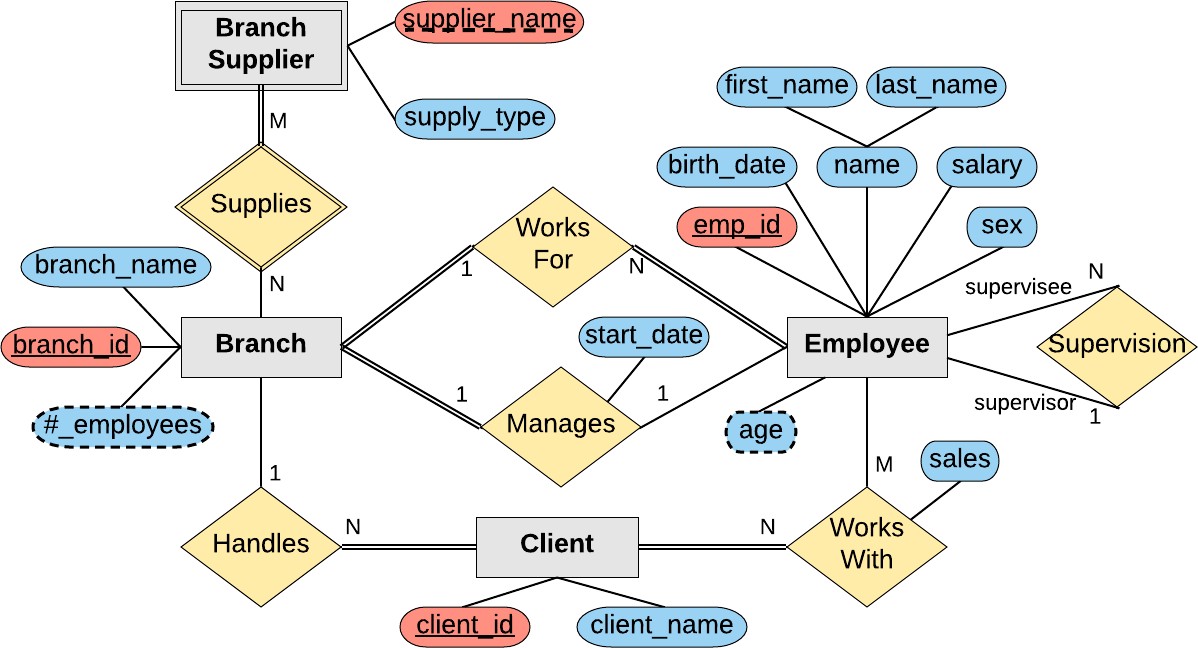
 One employee manages one branch. We keep a track of the start time of management for the employee for a branch.

 We also keep track of the directed supervisor of each employee and the supervisee associated with each employee.

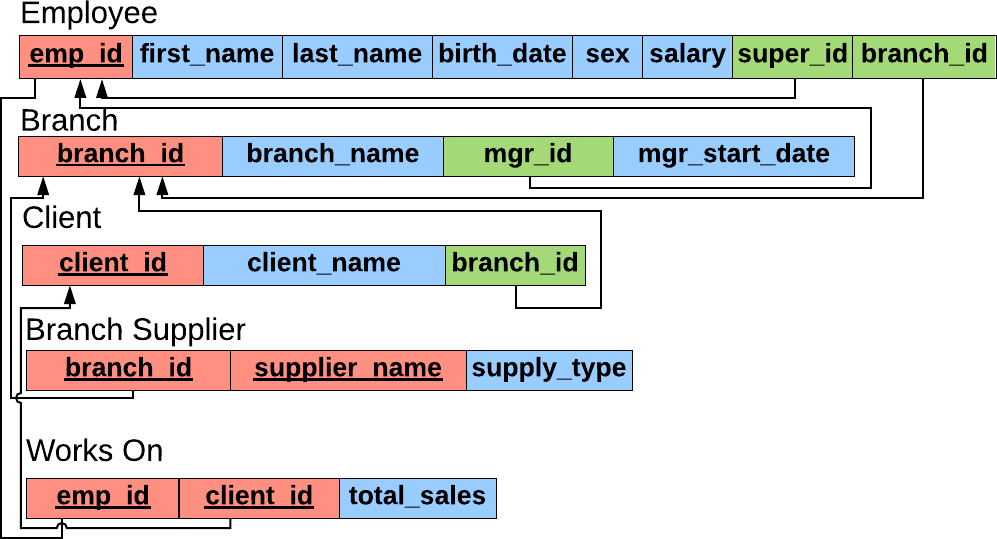
 An employee may work with a number of clients.

 For each client, we keep track of their name, unique ID, relationship to the employee.

# Company ER Diagram



*Company Database Schema*



## ENTITY DESCRIPTION

EMPLOYEE

|  |  |  |
| --- | --- | --- |
| **FIELD** | **DATATYPE** | **KEY** |
| **Emp\_id** | **Int** | **Primary key** |
| **First\_name** | **VARCHAR(40)** |  |
| **Last\_name** | **VARCHAR(40)** |  |
| **Birth\_day** | **DATE** |  |
| **SEX** | **VARCHAR(1)** |  |
| **Salary** | **Int** |  |
| **Super\_id** | **Int** |  |
| **Branch\_id** | **Int** |  |

QUERIES

**CREATE TABLE employee ( emp\_id INT PRIMARY KEY, first\_name VARCHAR(40), last\_name VARCHAR(40), birth\_day DATE,**

**sex VARCHAR(1),**

**salary INT, super\_id INT, branch\_id INT,**

**FOREIGN KEY(branch\_id) REFERENCES branch(branch\_id) ON DELETE SET NULL, FOREIGN KEY(super\_id) REFERENCES employee(emp\_id) ON DELETE SET NULL**

**);**

BRANCH

|  |  |  |
| --- | --- | --- |
| **FIELD** | **DATATYPE** | **KEY** |
| **Branch\_id** | **Int** | **Primary key** |
| **branch\_name** | **VARCHAR(40)** |  |
| **Mgr\_id** | **Int** | **Foreign key** |
| **Mgr\_start\_date** | **Date** |  |

QUERIES

**CREATE TABLE branch ( branch\_id INT PRIMARY KEY, branch\_name VARCHAR(40), mgr\_id INT,**

**mgr\_start\_date DATE,**

**FOREIGN KEY(mgr\_id) REFERENCES employee(emp\_id) ON DELETE SET NULL**

**);**

**CLIENT**

|  |  |  |
| --- | --- | --- |
| **FIELD** | **DATATYPE** | **KEY** |
| **client\_id** | **Int** | **Primary key** |
| **client\_name** | **VARCHAR(40)** |  |
| **branch\_id** | **Int** | **Foreign key** |

QUERIES

CREATE TABLE client ( client\_id INT PRIMARY KEY, client\_name VARCHAR(40), branch\_id INT,

FOREIGN KEY(branch\_id) REFERENCES

branch(branch\_id) ON DELETE SET NULL

);

WORKS\_WITH

|  |  |  |
| --- | --- | --- |
| **FIELD** | **DATATYPE** | **KEY** |
| **Emp\_id** | **Int** | **Primary key** |
| **Client\_id** | **Int** | **Foreign key** |
| **Total\_sales** | **Int** |  |

QUERIES

CREATE TABLE works\_with ( emp\_id INT,

client\_id INT, total\_sales INT,

PRIMARY KEY(emp\_id, client\_id),

FOREIGN KEY(emp\_id) REFERENCES

employee(emp\_id) ON DELETE CASCADE,

FOREIGN KEY(client\_id) REFERENCES

client(client\_id) ON DELETE CASCADE

);

BRANCH\_SUPPLIER

|  |  |  |
| --- | --- | --- |
| **FIELD** | **DATATYPE** | **KEY** |
| **branch\_id** | **Int** | **Primary key** |
| **Supplier\_name** | **VARCHAR(40)** | **Primary key** |
| **Supply\_type** | **VARCHAR(40)** |  |

QUERIES

CREATE TABLE branch\_supplier ( branch\_id INT,

supplier\_name VARCHAR(40), supply\_type VARCHAR(40),

PRIMARY KEY(branch\_id, supplier\_name),

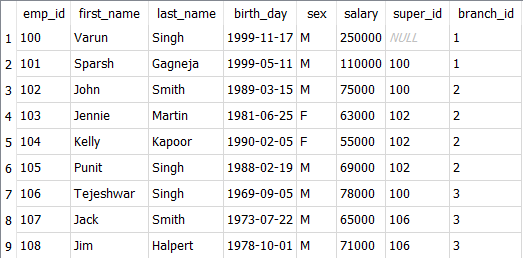
FOREIGN KEY(branch\_id) REFERENCES

branch(branch\_id) ON DELETE CASCADE

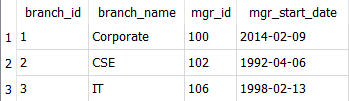
);

## TABLE DATA

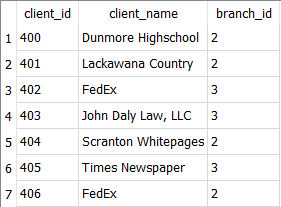
**mysql> select \* from employee;**



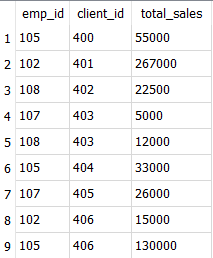
**mysql> select \* from branch;**



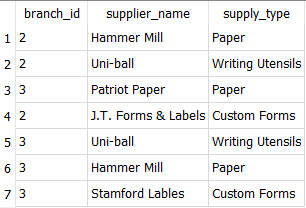
**mysql> select \* from client;**



**mysql> select \* from works\_with;**



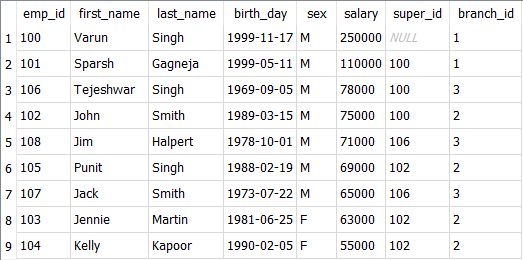
**mysql> select \* from branch\_supplier;**



## QUERIES EXECUTED

1. **Find all employees ordered by salary**

**SELECT \* from employee ORDER BY salary DESC;**



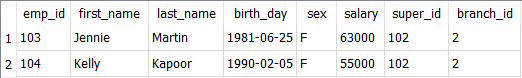
1. **Find all employees born between 1970 and 1975**

**SELECT \* FROM employee WHERE birth\_day BETWEEN '1970-01- 01' AND '1975-01-01';**



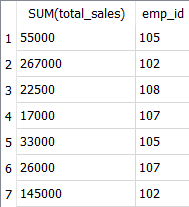
1. **Find all female employees at branch 2**

**SELECT \* FROM employee WHERE branch\_id = 2 AND sex = 'F';**



1. **Find the total sales of each salesman**

**SELECT SUM(total\_sales), emp\_id FROM works\_with GROUP BY client\_id;**



1. **Find any employee born on the 10th day of the month**

**SELECT \* FROM employee WHERE birth\_day LIKE ' 10%';**

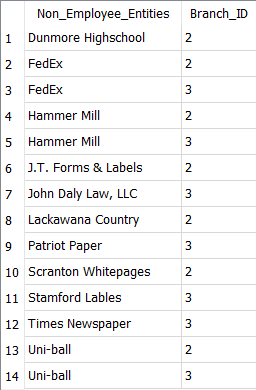


1. **Find a list of all clients & branch suppliers' names**

**SELECT client.client\_name AS Non-Employee\_Entities, client.branch\_id AS Branch\_ID FROM client**

**UNION**

**SELECT branch\_supplier.supplier\_name, branch\_supplier.branch\_id FROM branch\_supplier;**



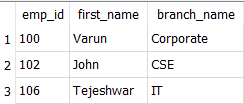
1. **Add the extra branch**

**INSERT INTO branch VALUES(5, "ME", NULL, NULL);**

**SELECT employee.emp\_id, employee.first\_name, branch.branch\_name FROM employee**

**JOIN branch**

**ON employee.emp\_id = branch.mgr\_id;**

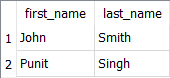


1. **Find names of all employees who have sold over 50,000**

**SELECT employee.first\_name, employee.last\_name FROM employee**

**WHERE employee.emp\_id IN (SELECT works\_with.emp\_id FROM works\_with**

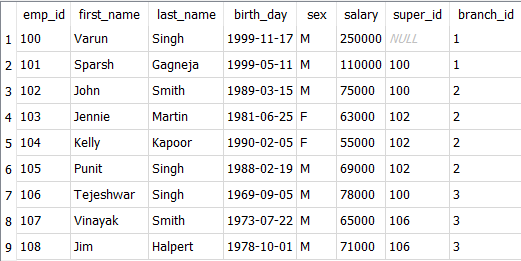
**WHERE works\_with.total\_sales > 50000);**



1. **Update the name of Jack with Vinayak**

**UPDATE employee SET first\_name='Vinayak' WHERE first\_name='Jack';**

**SELECT \* FROM employee;**



1. **Delete the employee whose name is Vinayak**

**DELETE FROM employee WHERE first\_name='Vinayak'; SELECT \* from employee;**

