

Department of Computer Science

MY University, Islamabad.

**Implementation Phase (LAB)**

**Project No: 07**

**Course Title: Database System**

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**Batch: Fall2023**

**Program: Ai**

**Semester: 6th**

**Lab Instructor: Mr. Hamza Javed**

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**Database And Table Queries**

USE dbproject7;

CREATE TABLE employees (

emp\_no INT NOT NULL,

emp\_title\_id VARCHAR(5) NOT NULL,

birth\_date DATE NOT NULL,

first\_name VARCHAR(30) NOT NULL,

last\_name VARCHAR(30) NOT NULL,

sex VARCHAR(1) NOT NULL,

hire\_date DATE NOT NULL,

PRIMARY KEY (emp\_no)

);

CREATE TABLE dept\_manager (

dept\_no VARCHAR(4) NOT NULL,

emp\_no INT NOT NULL,

PRIMARY KEY (dept\_no, emp\_no),

FOREIGN KEY (emp\_no) REFERENCES employees (emp\_no) ON DELETE CASCADE,

FOREIGN KEY (dept\_no) REFERENCES departments (dept\_no) ON DELETE CASCADE

);

CREATE TABLE dept\_emp (

emp\_no INT NOT NULL,

dept\_no VARCHAR(4) NOT NULL,

PRIMARY KEY (emp\_no, dept\_no),

FOREIGN KEY (emp\_no) REFERENCES employees (emp\_no) ON DELETE CASCADE,

FOREIGN KEY (dept\_no) REFERENCES departments (dept\_no) ON DELETE CASCADE

);

CREATE TABLE departments (

dept\_no VARCHAR(4) NOT NULL,

dept\_name VARCHAR(30) NOT NULL,

PRIMARY KEY (dept\_no)

);

CREATE TABLE titles (

title\_id VARCHAR(5) NOT NULL,

title VARCHAR(30) NOT NULL,

PRIMARY KEY (title\_id)

);

CREATE TABLE salaries (

emp\_no INT NOT NULL,

salary INT NOT NULL,

PRIMARY KEY (emp\_no),

FOREIGN KEY (emp\_no) REFERENCES employees (emp\_no) ON DELETE CASCADE

);

**Instructions To load .csv Data into MySQL**

LOAD DATA INFILE 'D:\\Programs\\Datasets\\dept\_manager.csv'

INTO TABLE dept\_manager

FIELDS TERMINATED BY ','

ENCLOSED BY ' " '

LINES TERMINATED BY '\n'

IGNORE 1 ROWS;

LOAD DATA INFILE 'D:\\Programs\\Datasets\\dept\_emp.csv'

INTO TABLE dept\_emp

FIELDS TERMINATED BY ','

ENCLOSED BY ' " '

LINES TERMINATED BY '\n'

IGNORE 1 ROWS;

LOAD DATA INFILE 'D:\\Programs\\Datasets\\departments.csv'

INTO TABLE departments

FIELDS TERMINATED BY ','

ENCLOSED BY ' " '

LINES TERMINATED BY '\n'

IGNORE 1 ROWS;

LOAD DATA INFILE 'D:\\Programs\\Datasets\\titles.csv'

INTO TABLE titles

FIELDS TERMINATED BY ','

ENCLOSED BY ' " '

LINES TERMINATED BY '\n'

IGNORE 1 ROWS;

LOAD DATA INFILE 'D:\\Programs\\Datasets\\salaries.csv'

INTO TABLE salaries

FIELDS TERMINATED BY ','

ENCLOSED BY ' " '

LINES TERMINATED BY '\n'

IGNORE 1 ROWS;

LOAD DATA INFILE 'D:\\Programs\\Datasets\\employees.csv'

INTO TABLE employees

FIELDS TERMINATED BY ','

ENCLOSED BY ' " '

LINES TERMINATED BY '\n'

IGNORE 1 ROWS

**Question 1 : List the following details of each employee: employee number, last name, first name, sex, and salary.**

SELECT e.emp\_no, e.last\_name, e.first\_name, e.sex, s.salary

FROM dbproject7.employees e

JOIN dbproject7.salaries s ON e.emp\_no = s.emp\_no

LIMIT 10;



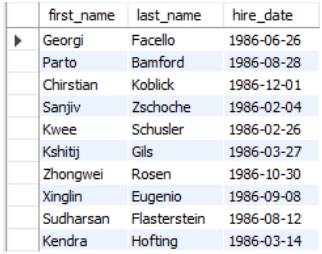
**Question 2 : List first name, last name, and hire date for employees who were hired in 1986.**

SELECT e.first\_name, e.last\_name, e.hire\_date

FROM dbproject7.employees e

WHERE YEAR(e.hire\_date) = 1986

LIMIT 10;



**Question 3 : List the manager of each department with the following information: department number, department name, the manager’s employee number, last name, first name.**

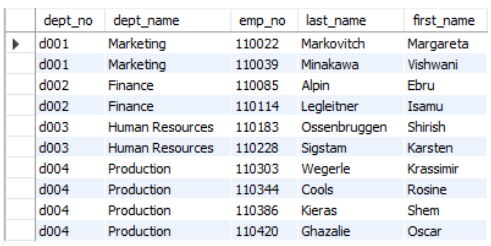
SELECT d.dept\_no, d.dept\_name, dm.emp\_no, e.last\_name, e.first\_name

FROM dbproject7.departments d

JOIN dbproject7.dept\_manager dm ON d.dept\_no = dm.dept\_no

JOIN dbproject7.employees e ON dm.emp\_no = e.emp\_no

LIMIT 10;



**Question 4 :** **List the department of each employee with the following information: employee number, last name, first name, and department name.**

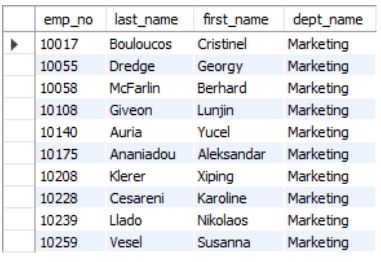
SELECT e.emp\_no, e.last\_name, e.first\_name, d.dept\_name

FROM dbproject7.employees e

JOIN dbproject7.dept\_emp de ON e.emp\_no = de.emp\_no

JOIN dbproject7.departments d ON de.dept\_no = d.dept\_no

LIMIT 10;



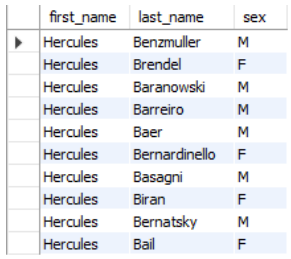
**Question 5 : List first name, last name, and sex for employees whose first name is ”Hercules” and last names begin with ”B.”**

SELECT e.first\_name, e.last\_name, e.sex

FROM dbproject7.employees e

WHERE e.first\_name = 'Hercules' AND e.last\_name LIKE 'B%'

LIMIT 10;



**Question 6 : List only single gender (Male/Female)employee which contain maximum salary. with the following information: employee number, last name, first name, Gender and salaries.**

SELECT e.emp\_no, e.last\_name, e.first\_name, e.sex, s.salary

FROM dbproject7.employees e

JOIN dbproject7.salaries s ON e.emp\_no = s.emp\_no

WHERE (e.sex, s.salary) IN (

SELECT sex, MAX(salary)

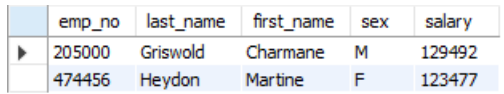
FROM dbproject7.employees e

JOIN dbproject7.salaries s ON e.emp\_no = s.emp\_no

GROUP BY e.sex

)

LIMIT 10;

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**Question 7 : List the department and salary of each employee with the following information: employee number, last name, first name, salary and department name.**

SELECT e.emp\_no, e.last\_name, e.first\_name, s.salary, d.dept\_name

FROM dbproject7.employees e

JOIN dbproject7.salaries s ON e.emp\_no = s.emp\_no

JOIN dbproject7.dept\_emp de ON e.emp\_no = de.emp\_no

JOIN dbproject7.departments d ON de.dept\_no = d.dept\_no

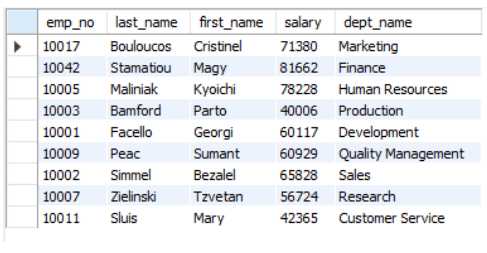
WHERE e.emp\_no IN (

SELECT MIN(de.emp\_no)

FROM dbproject7.dept\_emp de

GROUP BY de.dept\_no

);



**Question 8 : Apply left join on employee table with titles.**

SELECT e.\*, t.\*

FROM dbproject7.employees e

LEFT JOIN dbproject7.titles t ON e.emp\_title\_id = t.title\_id

LIMIT 10;



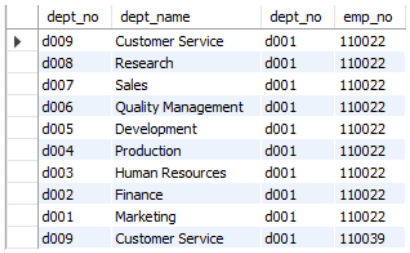
**Question 9 : Apply Cross join with department and dept manager.**

SELECT \*

FROM dbproject7.departments d

CROSS JOIN dbproject7.dept\_manager dm

LIMIT 10;



**Question 10 : Apply Right join on employee table with department.**

SELECT e.\*, d.\*

FROM dbproject7.employees e

RIGHT JOIN dbproject7.dept\_emp de ON e.emp\_no = de.emp\_no

RIGHT JOIN dbproject7.departments d ON de.dept\_no = d.dept\_no

LIMIT 10;

