**PRACTICAL 1**

LAKSHYAJEET SINGH JALAL

BTECH CSE 5 TH SEM

2294038

DATE: 22 AUG 2024

**Problem Statement:**

* **Create a Scenario based ER-Models with the entities. (Hospital Details like: Wards, Patients, Doctor, Bills etc)**
* **Convert this ER-model into table with all the entities. (Minimum five Entities).**

**CREATE TABLE Wards (**

**id int PRIMARY KEY,**

**name varchar(50),**

**capacity INT**

**);**

Query OK, 0 rows affected (0.04 sec)

**DESCRIBE Wards;**

+----------+-------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+----------+-------------+------+-----+---------+-------+

| id | int | NO | PRI | NULL | |

| name | varchar(50) | YES | | NULL | |

| capacity | int | YES | | NULL | |

+----------+-------------+------+-----+---------+-------+

3 rows in set (0.00 sec)

**CREATE TABLE Patients (**

**id INT PRIMARY KEY,**

**name VARCHAR(50),**

**age INT,**

**ward\_id INT**

**);**

Query OK, 0 rows affected (0.04 sec)

**DESCRIBE Patients;**

+---------+-------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------+-------------+------+-----+---------+-------+

| id | int | NO | PRI | NULL | |

| name | varchar(50) | YES | | NULL | |

| age | int | YES | | NULL | |

| ward\_id | int | YES | | NULL | |

+---------+-------------+------+-----+---------+-------+

4 rows in set (0.00 sec)

**CREATE TABLE Doctors (**

**id int,**

**name varchar(50),**

**specialty varchar(50)**

**);**

Query OK, 0 rows affected (0.03 sec)

**DESCRIBE Doctors;**

+-----------+-------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+-----------+-------------+------+-----+---------+-------+

| id | int | YES | | NULL | |

| name | varchar(50) | YES | | NULL | |

| specialty | varchar(50) | YES | | NULL | |

+-----------+-------------+------+-----+---------+-------+

3 rows in set (0.00 sec)

**CREATE TABLE Appointments(**

**id int,**

**patient\_id int,**

**doctor\_id int,**

**date date**

**);**

Query OK, 0 rows affected (0.04 sec)

**DESCRIBE Appointments;**

+------------+------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+------------+------+------+-----+---------+-------+

| id | int | YES | | NULL | |

| patient\_id | int | YES | | NULL | |

| doctor\_id | int | YES | | NULL | |

| date | date | YES | | NULL | |

+------------+------+------+-----+---------+-------+

4 rows in set (0.00 sec)

**CREATE TABLE Bills(**

**id INT,**

**patient\_id INT,**

**amount INT**

**);**

Query OK, 0 rows affected (0.04 sec)

**DESCRIBE Bills;**

+------------+------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+------------+------+------+-----+---------+-------+

| id | int | YES | | NULL | |

| patient\_id | int | YES | | NULL | |

| amount | int | YES | | NULL | |

+------------+------+------+-----+---------+-------+

3 rows in set (0.00 sec)

* **Insert random data in each column of all the tables.**

**INSERT INTO Wards**

**VALUES (1, "general", 10),**

**(2, "emergency", 5),**

**(3, "ICU", 2);**

Query OK, 3 rows affected (0.01 sec)

Records: 3 Duplicates: 0 Warnings: 0

**INSERT INTO Patients**

**VALUES (1, "Anshul", 23, 1),**

**(2, "Deepak", 20, 3),**

**(3, "Gaurav", 20, 2);**

Query OK, 3 rows affected (0.01 sec)

Records: 3 Duplicates: 0 Warnings: 0

**INSERT INTO Doctors**

**VALUES (1, "Dr. Dre", "Cardiologist"),**

**(2, "Dr. Ragavendra", "Neurologist"),**

**(3, "Dr. Dhapola", "Surgeon");**

Query OK, 3 rows affected (0.01 sec)

Records: 3 Duplicates: 0 Warnings: 0

**INSERT INTO Appointments**

**VALUES (1, 1, 1, "2024-01-01"),**

**(2, 2, 2, "2024-01-02"),**

**(3, 3, 3, "2024-01-03");**

Query OK, 3 rows affected (0.01 sec)

Records: 3 Duplicates: 0 Warnings: 0

**INSERT INTO Bills**

**VALUES (1, 1, 100000),**

**(2, 2, 20000),**

**(3, 3, 30000);**

Query OK, 3 rows affected (0.01 sec)

Records: 3 Duplicates: 0 Warnings: 0

**Update the table by applying some conditions. (For example: using alter command)**

**ALTER TABLE Wards**

**ADD COLUMN location VARCHAR(50);**

Query OK, 0 rows affected (0.03 sec)

Records: 0 Duplicates: 0 Warnings: 0

**UPDATE Wards**

**SET location = 'Building A'**

**WHERE id = 1;**

Query OK, 1 row affected (0.01 sec)

Rows matched: 1 Changed: 1 Warnings: 0

**UPDATE Wards**

**SET location = 'Building B'**

**WHERE id = 2;**

Query OK, 1 row affected (0.01 sec)

Rows matched: 1 Changed: 1 Warnings: 0

**UPDATE Wards**

**SET location = 'Building C'**

**WHERE id = 3;**

Query OK, 1 row affected (0.01 sec)

Rows matched: 1 Changed: 1 Warnings: 0

* **Apply the `DELETE` and `DROP` command, and then review the results.**

**DELETE FROM Patients**

**WHERE id = 1;**

Query OK, 1 row affected (0.01 sec)

**DROP TABLE Appointments;**

Query OK, 0 rows affected (0.02 sec)

**SELECT \***

**FROM Wards;**

+----+-----------+----------+------------+

| id | name | capacity | location |

+----+-----------+----------+------------+

| 1 | general | 10 | Building A |

| 2 | emergency | 5 | Building B |

| 3 | ICU | 2 | Building C |

+----+-----------+----------+------------+

3 rows in set (0.00 sec)

**SELECT \***

**FROM Patients;**

+----+--------+------+---------+

| id | name | age | ward\_id |

+----+--------+------+---------+

| 2 | Deepak | 20 | 3 |

| 3 | Gaurav | 20 | 2 |

+----+--------+------+---------+

2 rows in set (0.00 sec)

**SELECT \***

**FROM Doctors;**

+------+----------------+--------------+

| id | name | specialty |

+------+----------------+--------------+

| 1 | Dr. Dre | Cardiologist |

| 2 | Dr. Ragavendra | Neurologist |

| 3 | Dr. Dhapola | Surgeon |

+------+----------------+--------------+

3 rows in set (0.00 sec)

**SELECT \***

**FROM Bills;**

+------+------------+--------+

| id | patient\_id | amount |

+------+------------+--------+

| 1 | 1 | 100000 |

| 2 | 2 | 20000 |

| 3 | 3 | 30000 |

+------+------------+--------+

3 rows in set (0.00 sec)

**PRACTICAL 3**

LAKSHYAJEET SINGH JALAL

BTECH CSE 5 TH SEM

2294038

DATE: 29 AUG 2024

**Problem Statement:**

* **Create an Employee table with the following attributes and constraints: Employee Table - (Employee Id. (Primary key), Name, Department, Age (check >18), Salary, City).**

**CREATE TABLE employee (**

**id INT PRIMARY KEY,**

**name VARCHAR(100),**

**age INT,**

**salary INT,**

**department VARCHAR(100),**

**city VARCHAR(100),**

**CONSTRAINT check\_employee CHECK (age >= 18)**

**);**

Query OK, 0 rows affected (0.03 sec)

**DESCRIBE employee;**

+------------+--------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+------------+--------------+------+-----+---------+-------+

| id | int | NO | PRI | NULL | |

| name | varchar(100) | YES | | NULL | |

| age | int | YES | | NULL | |

| salary | int | YES | | NULL | |

| department | varchar(100) | YES | | NULL | |

| city | varchar(100) | YES | | NULL | |

+------------+--------------+------+-----+---------+-------+

6 rows in set (0.00 sec)

**INSERT INTO employee (id, name, age, salary, department, city)**

**VALUES (1, 'Tiwari', 22, 60000, 'Finance', 'New York'),**

**(2, 'Kirmada', 30, 55000, 'HR', 'Los Angeles'),**

**(3, 'Kaptan', 25, 48000, 'IT', 'Chicago'),**

**(4, 'ChotaGiyan', 22, 70000, 'Finance', 'Houston'),**

**(5, 'Kattapa', 35, 52000, 'Marketing', 'Phoenix'),**

**(6, 'Bahu', 28, 62000, 'IT', 'San Francisco'),**

**(7, 'Panda', 40, 75000, 'HR', 'Seattle'),**

**(8, 'Bubu', 45, 80000, 'Management', 'Scranton'),**

**(9, 'DevDev', 30, 45000, 'Reception', 'Scranton'),**

**(10, 'Paratho', 35, 65000, 'Sales', 'Scranton');**

Query OK, 10 rows affected (0.01 sec)

Records: 10 Duplicates: 0 Warnings: 0

**SELECT \***

**from employee;**

+----+------------+------+--------+------------+---------------+

| id | name | age | salary | department | city |

+----+------------+------+--------+------------+---------------+

| 1 | Tiwari | 22 | 60000 | Finance | New York |

| 2 | Kirmada | 30 | 55000 | HR | Los Angeles |

| 3 | Kaptan | 25 | 48000 | IT | Chicago |

| 4 | ChotaGiyan | 22 | 70000 | Finance | Houston |

| 5 | Kattapa | 35 | 52000 | Marketing | Phoenix |

| 6 | Bahu | 28 | 62000 | IT | San Francisco |

| 7 | Panda | 40 | 75000 | HR | Seattle |

| 8 | Bubu | 45 | 80000 | Management | Scranton |

| 9 | DevDev | 30 | 45000 | Reception | Scranton |

| 10 | Paratho | 35 | 65000 | Sales | Scranton |

+----+------------+------+--------+------------+---------------+

10 rows in set (0.00 sec)

* **Display the total number of employees.**

**SELECT COUNT(\*)**

**FROM employee;**

+----------+

| COUNT(\*) |

+----------+

| 10 |

+----------+

1 row in set (0.00 sec)

* **Retrieve all information of employees whose age is 22.**

**SELECT \***

**FROM employee**

**WHERE age = 22;**

+----+------------+------+--------+------------+----------+

| id | name | age | salary | department | city |

+----+------------+------+--------+------------+----------+

| 1 | Tiwari | 22 | 60000 | Finance | New York |

| 4 | ChotaGiyan | 22 | 70000 | Finance | Houston |

+----+------------+------+--------+------------+----------+

2 rows in set (0.00 sec)

* **Fetch the employee id, name, and department, whose salary >= 50000.**

**SELECT id,**

**name,**

**department**

**FROM employee**

**WHERE salary >= 50000;**

+----+------------+------------+

| id | name | department |

+----+------------+------------+

| 1 | Tiwari | Finance |

| 2 | Kirmada | HR |

| 4 | ChotaGiyan | Finance |

| 5 | Kattapa | Marketing |

| 6 | Bahu | IT |

| 7 | Panda | HR |

| 8 | Bubu | Management |

| 10 | Paratho | Sales |

+----+------------+------------+

8 rows in set (0.00 sec)

* **Print the name of the employees and label the column as "Full Name" for those employees whose department name is 'Finance' and age is 22.**

**SELECT name AS "Full Name"**

**FROM employee**

**WHERE department = "finance"**

**AND age = 22;**

+------------+

| Full Name |

+------------+

| Tiwari |

| ChotaGiyan |

+------------+

2 rows in set (0.00 sec)

* **Print the department names from the employee table without having the duplicates.**

**SELECT DISTINCT(department)**

**FROM employee;**

+------------+

| department |

+------------+

| Finance |

| HR |

| IT |

| Marketing |

| Management |

| Reception |

| Sales |

+------------+

7 rows in set (0.00 sec)

**PRACTICAL 6**

LAKSHYAJEET SINGH JALAL

BTECH CSE 5 TH SEM

2294038

DATE: 5 SEP 2024

**Problem Statement:**

* **Create an employee table & insert some records.**

**CREATE TABLE employee (**

**id INT PRIMARY KEY,**

**name VARCHAR(50),**

**department VARCHAR(50),**

**city VARCHAR(50),**

**salary INT**

**);**

Query OK, 0 rows affected (0.04 sec)

**DESC employee;**

+------------+-------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+------------+-------------+------+-----+---------+-------+

| id | int | NO | PRI | NULL | |

| name | varchar(50) | YES | | NULL | |

| department | varchar(50) | YES | | NULL | |

| city | varchar(50) | YES | | NULL | |

| salary | int | YES | | NULL | |

+------------+-------------+------+-----+---------+-------+

5 rows in set (0.03 sec)

**INSERT INTO employee (id, name, salary, department, city)**

**VALUES (1, 'Anshul', 60000, 'CSE', 'Delhi'),**

**(2, 'Ayush', 5500, 'EE', 'Dehradun'),**

**(3, 'Gaurav', 48000, 'IT', 'Chandigarh'),**

**(4, 'Shriyansh', 7000, 'EC', 'Ghorakhal'),**

**(5, 'Deepak', 52000, 'ME', 'Pithoragarh'),**

**(6, 'Himanshu', 62000, 'IT', 'Almora'),**

**(7, 'Raghavendra', 7500, 'CSE', 'Ramgarh'),**

**(8, 'Abhay', 80000, 'CSE', 'Pune'),**

**(9, 'Dev', 45000, 'EE', 'Nainital'),**

**(10, 'Partho', 6500, 'EC', 'Rudrapur');**

Query OK, 10 rows affected (0.02 sec)

Records: 10 Duplicates: 0 Warnings: 0

**SELECT \***

**FROM employee;**

+----+-------------+------------+-------------+--------+

| id | name | department | city | salary |

+----+-------------+------------+-------------+--------+

| 1 | Anshul | CSE | Delhi | 60000 |

| 2 | Ayush | EE | Dehradun | 5500 |

| 3 | Gaurav | IT | Chandigarh | 48000 |

| 4 | Shriyansh | EC | Ghorakhal | 7000 |

| 5 | Deepak | ME | Pithoragarh | 52000 |

| 6 | Himanshu | IT | Almora | 62000 |

| 7 | Raghavendra | CSE | Ramgarh | 7500 |

| 8 | Abhay | CSE | Pune | 80000 |

| 9 | Dev | EE | Nainital | 45000 |

| 10 | Partho | EC | Rudrapur | 6500 |

+----+-------------+------------+-------------+--------+

10 rows in set (0.00 sec)

* **Show the record of employees who are working in the ‘CSE’ department.**

**SELECT \***

**FROM employee**

**WHERE department = "CSE";**

+----+-------------+------------+---------+--------+

| id | name | department | city | salary |

+----+-------------+------------+---------+--------+

| 1 | Anshul | CSE | Delhi | 60000 |

| 7 | Raghavendra | CSE | Ramgarh | 7500 |

| 8 | Abhay | CSE | Pune | 80000 |

+----+-------------+------------+---------+--------+

3 rows in set (0.00 sec)

* **Fetch the names of employees whose names start with the letters 'ay'.**

**SELECT name**

**FROM employee**

**WHERE name LIKE "Ay%";**

+-------+

| name |

+-------+

| Ayush |

+-------+

1 row in set (0.00 sec)

* **Fetch the information of employees, including their names and departments, whose names end with the letters 'sh'.**

**SELECT name,**

**department**

**FROM employee**

**WHERE name LIKE "%sh";**

+-----------+------------+

| name | department |

+-----------+------------+

| Ayush | EE |

| Shriyansh | EC |

+-----------+------------+

2 rows in set (0.00 sec)

* **Display the employee names and their departments of employees, whose city name starts with 'D' or ends with 'h'.**

**SELECT name,**

**department**

**FROM employee**

**WHERE city LIKE "D%"**

**OR city LIKE "%h";**

+-------------+------------+

| name | department |

+-------------+------------+

| Anshul | CSE |

| Ayush | EE |

| Gaurav | IT |

| Deepak | ME |

| Raghavendra | CSE |

+-------------+------------+

5 rows in set (0.00 sec)

* **Print all records of employees whose salary is greater than 15,000 and whose name starts with 'h'.**

**SELECT \***

**FROM employee**

**WHERE salary > 15000**

**AND name LIKE "H%";**

+----+----------+------------+--------+--------+

| id | name | department | city | salary |

+----+----------+------------+--------+--------+

| 6 | Himanshu | IT | Almora | 62000 |

+----+----------+------------+--------+--------+

1 row in set (0.00 sec)

* **Print the names of employees whose names consist of exactly three letters.**

**SELECT name**

**FROM employee**

**WHERE name LIKE "\_\_\_";**

+------+

| name |

+------+

| Dev |

+------+

1 row in set (0.00 sec)

* **Print the names of employees along with their city for those whose names have at least five letters.**

**SELECT name,**

**city**

**FROM employee**

**WHERE name LIKE "\_\_\_\_\_%";**

+-------------+-------------+

| name | city |

+-------------+-------------+

| Anshul | Delhi |

| Ayush | Dehradun |

| Gaurav | Chandigarh |

| Shriyansh | Ghorakhal |

| Deepak | Pithoragarh |

| Himanshu | Almora |

| Raghavendra | Ramgarh |

| Abhay | Pune |

| Partho | Rudrapur |

+-------------+-------------+

9 rows in set (0.00 sec)