# Creating the Tables in MySQL

Creating the students Table

CREATE TABLE students (

student\_id INT AUTO\_INCREMENT PRIMARY KEY,

firstname VARCHAR(50),

lastname VARCHAR(50),

department\_id INT,

year\_id INT,

FOREIGN KEY (department\_id) REFERENCES department(department\_id),

FOREIGN KEY (year\_id) REFERENCES year(year\_id)

);

Creating the department Table

CREATE TABLE department (

department\_id INT AUTO\_INCREMENT PRIMARY KEY,

deptname VARCHAR(50)

);

Creating the year Table

CREATE TABLE year (

year\_id INT AUTO\_INCREMENT PRIMARY KEY,

yearname VARCHAR(50)

);

# Student Table Relationships to Department and Year

# Converting MySQL Tables to MongoDB Collections

Department collection.json

{

"\_id": ObjectId(),

"deptname": "CSE"

}

Year Collection.json

{

"\_id": ObjectId(),

"yearname": "First Year"

}

Students Collection.json

{

"\_id": ObjectId(),

"firstname": "John",

"lastname": "Doe",

"department\_id": ObjectId("reference to department \_id"),

"year\_id": ObjectId("reference to year \_id")

}

Storing 5 Students for Each Department

Sample Data Insertion in MySQL

INSERT INTO department (deptname) VALUES ('CSE'), ('ECE'), ('MECH');

INSERT INTO year (yearname) VALUES ('First Year'), ('Second Year'), ('Third Year'), ('Fourth Year');

INSERT INTO students (firstname, lastname, department\_id, year\_id) VALUES

('John', 'Doe', 1, 1),

('Jane', 'Smith', 1, 2),

('Alice', 'Johnson', 1, 3),

('Bob', 'Brown', 1, 4),

('Charlie', 'Davis', 1, 1),

('Emily', 'Clark', 2, 1),

('Frank', 'Miller', 2, 2),

('Grace', 'Wilson', 2, 3),

('Hank', 'Moore', 2, 4),

('Ivy', 'Taylor', 2, 1),

('Jack', 'Anderson', 3, 1),

('Kara', 'Thomas', 3, 2),

('Liam', 'Jackson', 3, 3),

('Mia', 'White', 3, 4),

('Noah', 'Harris', 3, 1);

# Query to Display Students from CSE Department

SELECT s.firstname, s.lastname

FROM students s

JOIN department d ON s.department\_id = d.department\_id

WHERE d.deptname = 'CSE';

Step 6: Query to Display Only Department Names Using Student Table

sql

Copy code

SELECT DISTINCT d.deptname

FROM students s

JOIN department d ON s.department\_id = d.department\_id;

# Query to Display Students Sorted by Department and First Nam

SELECT s.firstname, s.lastname, d.deptname

FROM students s

JOIN department d ON s.department\_id = d.department\_id

ORDER BY d.deptname, s.firstname;