1)Create 3 tables named students,department,year

```
CREATE TABLE department (

    dept_id INT AUTO_INCREMENT PRIMARY KEY,

    dept_name VARCHAR(255) NOT NULL

);


CREATE TABLE year (

    year_id INT AUTO_INCREMENT PRIMARY KEY,

    year_name VARCHAR(255) NOT NULL

);


CREATE TABLE students (

    student_id INT AUTO_INCREMENT PRIMARY KEY,

    first_name VARCHAR(255) NOT NULL,

    last_name VARCHAR(255) NOT NULL,

    dept_id INT,

    year_id INT,

    FOREIGN KEY (dept_id) REFERENCES department(dept_id),

    FOREIGN KEY (year_id) REFERENCES year(year_id)

);
```

2)Student should contain relationship to both department and year

Query OK, 1 row affected (0.01 sec)

 mysql> use gen_ai;

Database changed

#creating department table

 mysql>-- Create the department table

```
mysql> CREATE TABLE department (

 ->  dept_id INT PRIMARY KEY AUTO_INCREMENT,

 ->  dept_nameVARCHAR(50) NOTNULL

-> );

 Query OK, 0 rows affected (0.01 sec)
```

#creating year table

```
 mysql>

mysql>-- Create the year table

 mysql> CREATE TABLE year (

  ->  year_id INT PRIMARY KEY AUTO_INCREMENT,

  ->  year_nameVARCHAR(20) NOTNULL

-> );

 Query OK, 0 rows affected (0.01 sec)
```

#creating student table and adding dept id and year id as foreign key

```
 mysql>

mysql>-- Create the students table with foreign key relationships

 mysql> CREATE TABLE students (

-> student_id INT PRIMARY KEY AUTO_INCREMENT,

-> student_name VARCHAR(100) NOT NULL,

-> dept_id INT,-> year_id INT,

-> FOREIGNKEY(dept_id) REFERENCES department(dept_id),

-> FOREIGNKEY(year_id) REFERENCES year(year_id)

-> );

 Query OK, 0 rows affected (0.03 sec)
```

mysql> desc department;

```
+-----------+-------------+------+-----+---------+----------------+
| Field     |Type         | Null | Key | Default | Extra          |
+-----------+-------------+------+-----+---------+----------------+
```

```
| dept_id   | int         | NO  |PRI  |NULL     |auto_increment|
| dept_name | varchar(50) | NO  |     |NULL     |              |
+-----------+-------------+------+-----+---------+---------------+
```
2 rows in set (0.00 sec)

mysql> desc year;

```
+-----------+-------------+------+-----+---------+---------------+
| Field      |Type         | Null | Key | Default | Extra         |
+-----------+-------------+------+-----+---------+---------------+
| year_id    | int         | NO   |PRI  |NULL     |auto_increment|
| year_name  | varchar(20) | NO   |     |NULL     |              |
+-----------+-------------+------+-----+---------+---------------+
```
2 rows in set (0.00 sec)

mysql> desc student;

mysql> desc students;

```
+--------------+--------------+------+-----+---------+---------------+
| Field         | Type         | Null  | Key | Default  | Extra         |
+--------------+--------------+------+-----+---------+---------------+
| student_id    | int          | NO   |PRI  |NULL     |auto_increment |
| student_name  | varchar(100) | NO   |     |NULL     |               |
| dept_id       |int           | YES  |MUL  |NULL     |               |
| year_id       |int           | YES  |MUL  |NULL     |               |
+--------------+--------------+------+-----+---------+---------------+
```
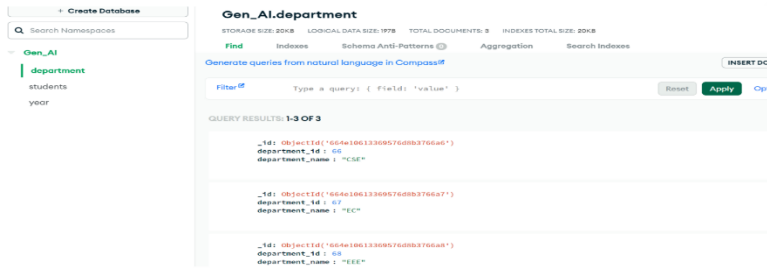4 rows in set (0.00 sec

3)use chatgpt and ask like "this is my table in mysql how can i create same in mongodb"

//Creating a database called gen_ai in mongodb and

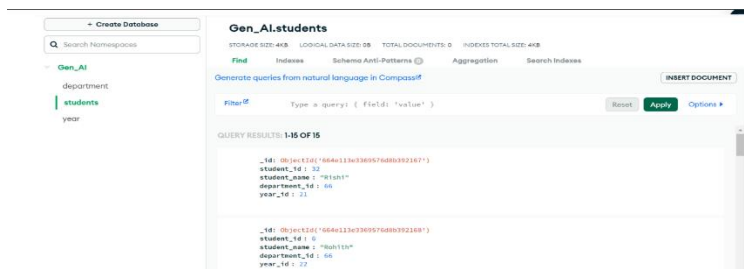# Adding collections called Department,Year and Students using mango db atlas

#Department collection

#Year collection

#Student Collection

4)store 5 students for each department
#inserting values into department table

mysql> INSERT INTO department (dept_name) VALUES

   -> ('CSE'),

   -> ('ECE'),

   -> ('EEE'),

   -> ('ME'),

   -> ('Civil');

Query OK, 5 rows affected (0.01 sec)

Records: 5 Duplicates: 0 Warnings: 0

#Displaying values of Department table

mysql> select * from department;

```
+---------+-----------+
| dept_id | dept_name |
+---------+-----------+
| 1       |CSE        |
| 2       |ECE        |
| 3       |EEE        |
| 4       |ME         |
| 5       |Civil      |
+---------+-----------+
```

5 rows in set (0.00 sec)

#inserting values into year table

mysql> INSERT INTO year (year_name) VALUES

-> ('Year 1'),

-> ('Year 2'),

-> ('Year 3'),

-> ('Year 4');

 Query OK, 4 rows affected (0.00 sec)

Records: 4 Duplicates: 0 Warnings: 0

#Displaying values of year table

mysql> select * from year;

```
+---------+-----------+
| year_id | year_name |
+---------+-----------+
| 1       |Year 1     |
```

| 2 |Year 2 |

| 3 |Year 3 |

| 4 |Year 4 |

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

4 rows in set (0.00 sec)

#inserting values into student table

mysql> INSERT INTO students (student_name, dept_id, year_id) VALUES

-> ('Student 1- CSE', 1, 1), ('Student 2- CSE', 1, 2), ('Student 3- CSE', 1, 3), ('Student 4- CSE', 1, 4),

-> ('Student 1- ECE', 2, 1), ('Student 2- ECE', 2, 2), ('Student 3- ECE', 2, 3), ('Student 4- ECE', 2, 4),

-> ('Student 1- EEE', 3, 1), ('Student 2- EEE', 3, 2), ('Student 3- EEE', 3, 3), ('Student 4- EEE', 3, 4),

-> ('Student 1- ME', 4, 1), ('Student 2- ME', 4, 2), ('Student 3- ME', 4, 3), ('Student 4- ME', 4, 4),

-> ('Student 1- Civil', 5, 1), ('Student 2- Civil', 5, 2), ('Student 3- Civil', 5, 3), ('Student 4- Civil', 5, 4); Query OK, 20 rows affected (0.00 sec)

Records: 20 Duplicates: 0 Warnings: 0

#Displaying values of student table

mysql> select * from students;

student_id	student_name	dept_id	year_id
1	Student 1- CSE	1	1
2	Student 1- CSE	1	2
3	Student 1- CSE	1	3
4	Student 1- CSE	1	4
5	Student 1- ECE	2	1
6	Student 1- ECE	2	1
7	Student 1- ECE	2	2
8	Student 1- ECE	2	3
9	Student 1- EEE	3	2
10	Student 1- EEE	3	3
11	Student 1- EEE	3	4

```
+------------+------------------+---------+---------+
```

11 rows in set (0.00 sec)

5)write a query to display students from CSE department

mysql> SELECT students.student_id, students.student_name, department.dept_name

-> FROMstudents

-> JOIN department ON students.dept_id = department.dept_id

-> WHEREdepartment.dept_name = 'CSE';

student_id	student_name	dept_name
1	Student 1- CSE	CSE
2	Student 2- CSE	CSE
3	Student 3- CSE	CSE
4	Student 4- CSE	CSE

4 rows in set (0.01 sec

6)write a query to display only deptname using student table

mysql> SELECT DISTINCT department.dept_name

-> FROMstudents

-> JOIN department ON students.dept_id = department.dept_id;

dept_name
CSE
ECE

| EEE |

| ME |

| Civil |

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

5 rows in set (0.00 sec)

7)write a query to display students sorted by dept and firstname

mysql> SELECT students.student_id, students.student_name, department.dept_name

-> FROMstudents

-> JOIN department ON students.dept_id = department.dept_id

-> ORDER BYdepartment.dept_name, students.student_name;

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

| student_id | student_name | dept_name |

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

11	Student 1- EEE	EEE
10	Student 2- EEE	EEE
9	Student 3- EEE	EEE
1	Student 2- CSE	CSE
2	Student 2- CSE	CSE
3	Student 3- CSE	CSE
4	Student 4- CSE	CSE
5	Student 2- ECE	ECE
6	Student 2- ECE	ECE
7	Student 3- ECE	ECE
8	Student 4- ECE	ECE

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

11 rows in set (0.01 sec)