1)Create 3 tables named students,department,year

2)student should contain relationship to both department and yearmysql> create database gen_ai;

Query OK, 1 row affected (0.01 sec)

mysql> use gen_ai;

Database changed

#creaating department table

```
mysql> -- Create the department table
mysql> CREATE TABLE department (
    ->     dept_id INT PRIMARY KEY AUTO_INCREMENT,
    ->     dept_name VARCHAR(50) NOT NULL
    -> );
```

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_name VARCHAR(20) NOT NULL
    -> );
```

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,
```

```
    ->     FOREIGN KEY (dept_id) REFERENCES department(dept_id),
    ->     FOREIGN KEY (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 | |

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

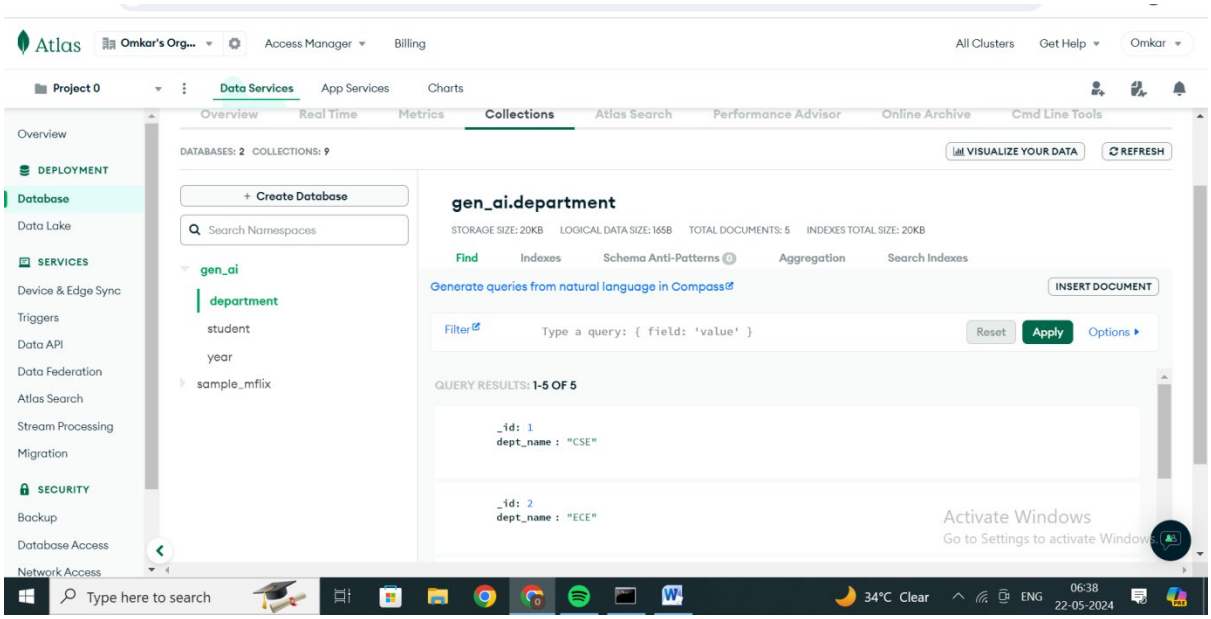
4 rows in set (0.00 sec)

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

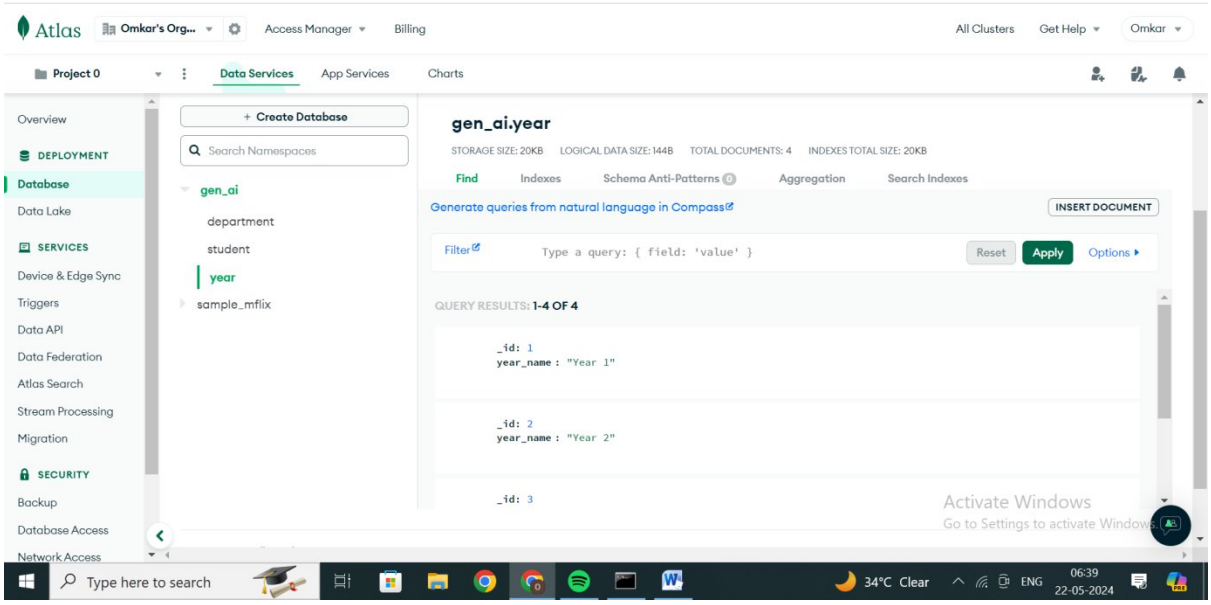
//Creating a database called gen_ai in mongodb and

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

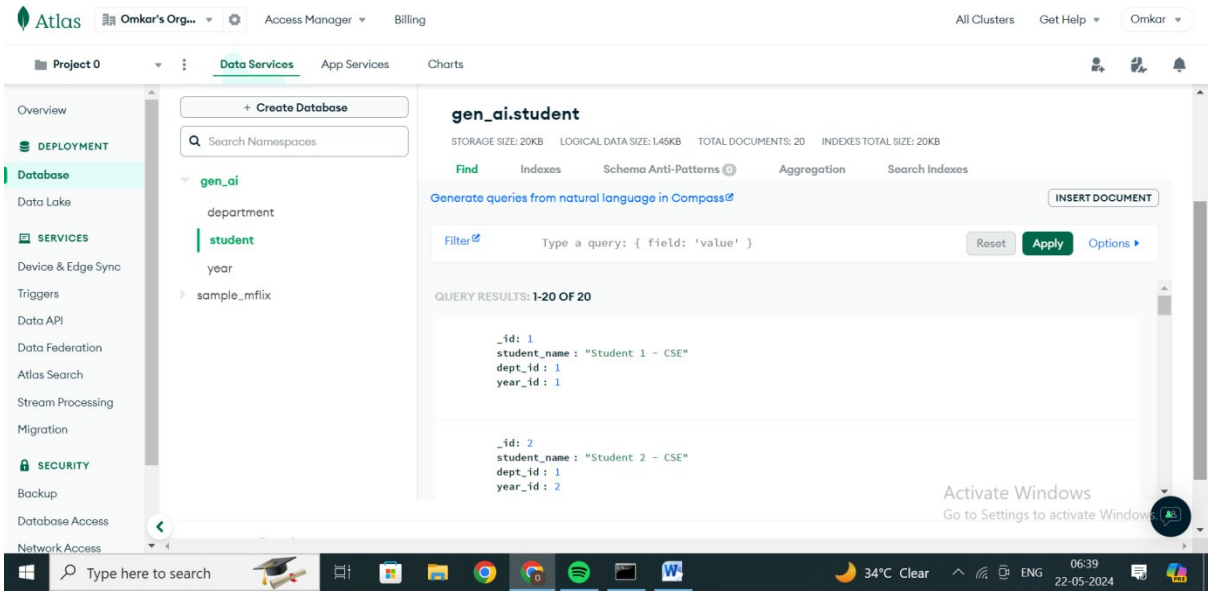
#Department collection



#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'),

-> ('EE'),

```
   -> ('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 | EE        |
|       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 - EE', 3, 1), ('Student 2 - EE', 3, 2), ('Student 3 - EE', 3, 3), ('Student 4 - EE', 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 2 - CSE   |       1 |       2 |
|          3 | Student 3 - CSE   |       1 |       3 |
|          4 | Student 4 - CSE   |       1 |       4 |
|          5 | Student 1 - ECE   |       2 |       1 |
|          6 | Student 2 - ECE   |       2 |       2 |
|          7 | Student 3 - ECE   |       2 |       3 |
|          8 | Student 4 - ECE   |       2 |       4 |
|          9 | Student 1 - EE    |       3 |       1 |
|         10 | Student 2 - EE    |       3 |       2 |
```

```
|       11 | Student 3 - EE    |      3 |      3 |
|       12 | Student 4 - EE    |      3 |      4 |
|       13 | Student 1 - ME    |      4 |      1 |
|       14 | Student 2 - ME    |      4 |      2 |
|       15 | Student 3 - ME    |      4 |      3 |
|       16 | Student 4 - ME    |      4 |      4 |
|       17 | Student 1 - Civil |      5 |      1 |
|       18 | Student 2 - Civil |      5 |      2 |
|       19 | Student 3 - Civil |      5 |      3 |
|       20 | Student 4 - Civil |      5 |      4 |
+------------+-------------------+---------+---------+
20 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
    -> FROM students
    -> JOIN department ON students.dept_id = department.dept_id
    -> WHERE department.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
```

```
   -> FROM students
   -> JOIN department ON students.dept_id = department.dept_id;
+-----------+
| dept_name |
+-----------+
| CSE       |
| ECE       |
| EE        |
| 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
   -> FROM students
   -> JOIN department ON students.dept_id = department.dept_id
   -> ORDER BY department.dept_name, students.student_name;
+------------+-------------------+-----------+
| student_id | student_name      | dept_name |
+------------+-------------------+-----------+
|         17 | Student 1 - Civil | Civil     |
|         18 | Student 2 - Civil | Civil     |
|         19 | Student 3 - Civil | Civil     |
|         20 | Student 4 - Civil | Civil     |
|          1 | Student 1 - CSE   | CSE       |
|          2 | Student 2 - CSE   | CSE       |
|          3 | Student 3 - CSE   | CSE       |
|          4 | Student 4 - CSE   | CSE       |
|          5 | Student 1 - ECE   | ECE       |
```

```
|         6 | Student 2 - ECE   | ECE      |
|         7 | Student 3 - ECE   | ECE      |
|         8 | Student 4 - ECE   | ECE      |
|         9 | Student 1 - EE    | EE       |
|        10 | Student 2 - EE    | EE       |
|        11 | Student 3 - EE    | EE       |
|        12 | Student 4 - EE    | EE       |
|        13 | Student 1 - ME    | ME       |
|        14 | Student 2 - ME    | ME       |
|        15 | Student 3 - ME    | ME       |
|        16 | Student 4 - ME    | ME       |
+-----------+-------------------+----------+
20 rows in set (0.01 sec)
```