1)Create 3 tables named students,department,year

```
mysql> use kapil;
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)
```

2)student should contain relationship to both department and year

```
#creating student table
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;

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

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

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

| student_id | int | NO | PRI | NULL | auto_increment |

| student_name | varchar(100) | NO | | NULL | |

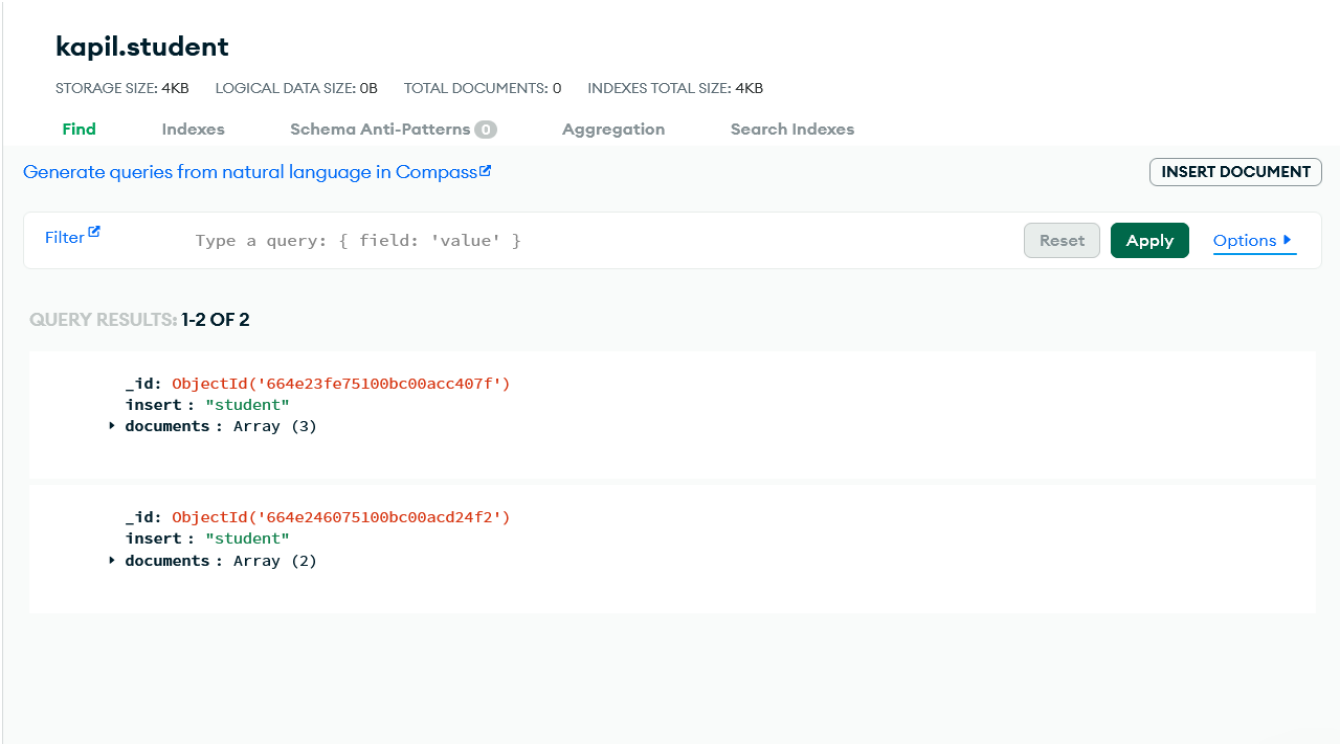
| dept_id | int | YES | MUL | NULL | |

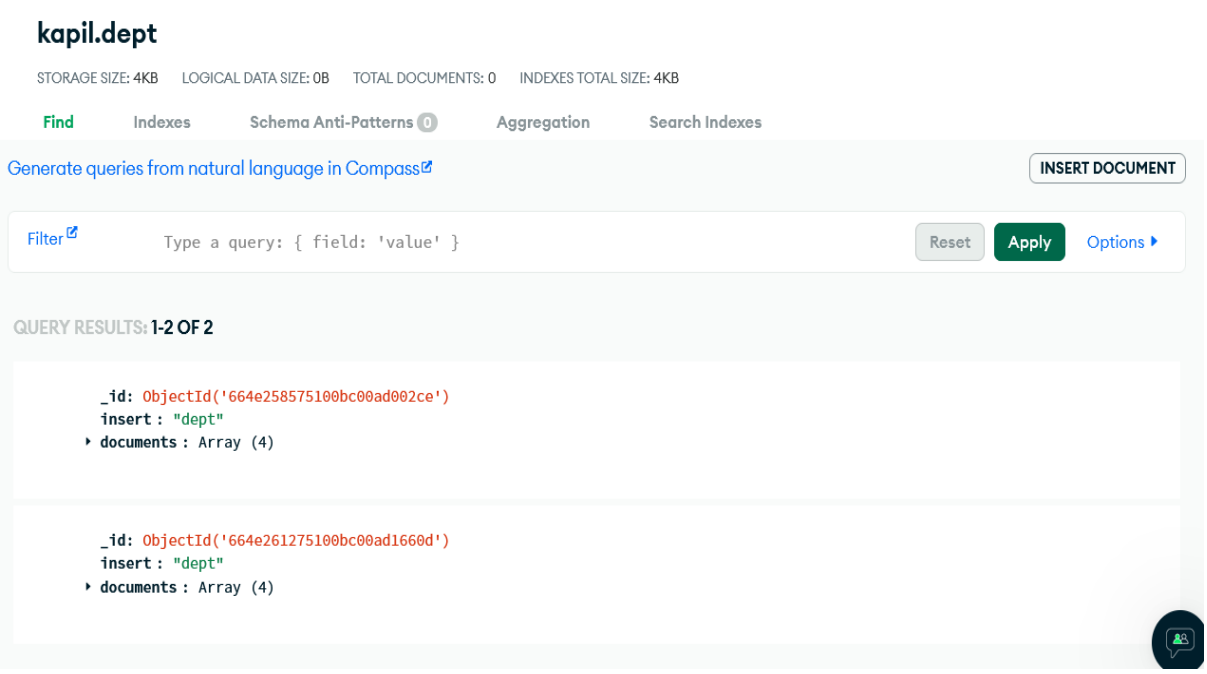
| year_id | int | YES | MUL | NULL | |

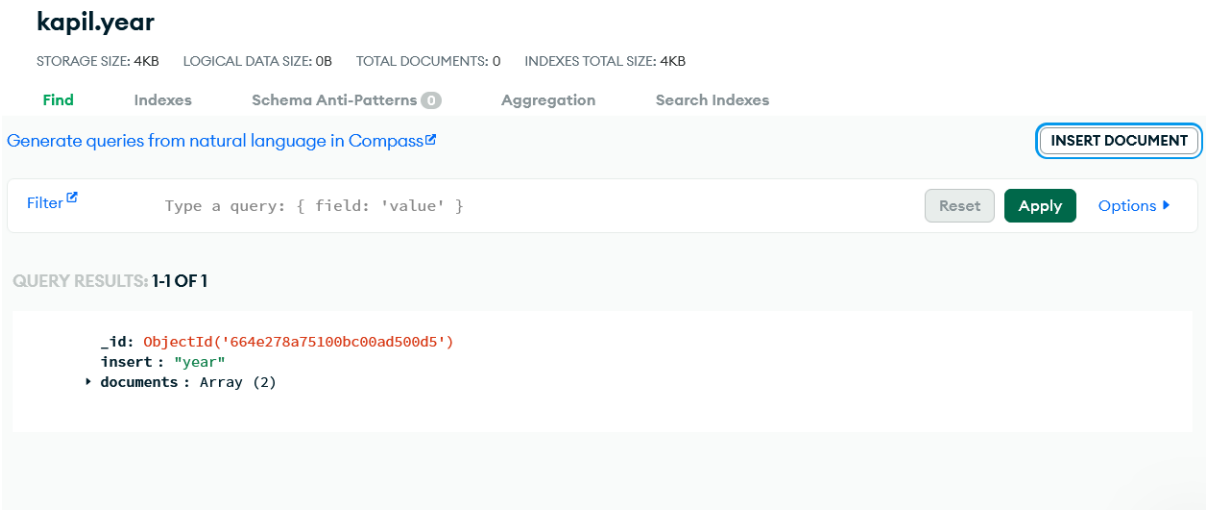
+--------------+--------------+------+-----+---------+----------------+

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







#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:

#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 |

10 rows in set(0.00sec)

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 |

9 rows in set (0.01 sec)