

```
mysql> create database gen_ai;
```

Query OK, 1 row affected (0.01 sec)

```
mysql> use gen_ai;
```

Database changed

```
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)

```
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)

```
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;
```

ERROR 1146 (42S02): Table 'gen_ai.student' doesn't exist

```
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)

```
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

```
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)

```
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

```
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)

```
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

```
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)

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)

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)

```
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)

#mongo db tables for department,year and student

The screenshot displays the MongoDB Atlas web interface. The left sidebar shows the navigation menu with sections for Deployment, Database, Services, and Security. The main panel is titled 'gen_ai.year' and shows the following details:

- DATABASES:** 2
- COLLECTIONS:** 9
- STORAGE SIZE:** 4KB
- LOGICAL DATA SIZE:** 0B
- TOTAL DOCUMENTS:** 0
- INDEXES TOTAL SIZE:** 4KB

The 'Find' tab is selected, showing a search bar with the placeholder text 'Type a query: { field: 'value' }'. Below the search bar, the 'QUERY RESULTS: 1-3 OF 3' are displayed:

```

{
  "_id": 1,
  "name": "First Year"
}

{
  "_id": 2,
  "name": "Second Year"
}

```

The bottom of the interface shows a Windows taskbar with the date 23/05/2024 and time 09:45.

Atlas | Nalla Narsi... | Access Manager | Billing | All Clusters | Get Help | MANISHA

Project 0 | Data Services | App Services | Charts

Overview | DEPLOYMENT | Database | Data Lake | SERVICES | Device & Edge Sync | Triggers | Data API | Data Federation | Atlas Search | Stream Processing | Migration | SECURITY | Backup | Database Access

+ Create Database

Search Namespaces

gen_ai

DEPARMENT

student

year

sample_mflix

gen_ai.student

STORAGE SIZE: 20KB | LOGICAL DATA SIZE: 184B | TOTAL DOCUMENTS: 3 | INDEXES TOTAL SIZE: 20KB

Find | Indexes | Schema Anti-Patterns | Aggregation | Search Indexes

Generate queries from natural language in Compass

INSERT DOCUMENT

Filter | Type a query: { field: 'value' } | Reset | Apply | Options

QUERY RESULTS: 1-3 OF 3

```
{
  "_id": 1,
  "name": "John Doe",
  "dept_id": 1,
  "year_id": 2
}
```

```
{
  "_id": 2,
  "name": "Jane Smith",
  "dept_id": 2,
  "year_id": 1
}
```

Windows | Search | 10:47 23/05/2024

Atlas | Nalla Narsi... | Access Manager | Billing | All Clusters | Get Help | MANISHA

Project 0 | Data Services | App Services | Charts

Overview | Real Time | Metrics | Collections | Atlas Search | Performance Advisor | Online Archive | Cmd Line Tools

DATABASES: 2 | COLLECTIONS: 9

View your schema example(s) | VISUALIZE YOUR DATA | REFRESH

+ Create Database

Search Namespaces

gen_ai

DEPARMENT

student

year

sample_mflix

gen_ai.DEPARMENT

STORAGE SIZE: 4KB | LOGICAL DATA SIZE: 0B | TOTAL DOCUMENTS: 0 | INDEXES TOTAL SIZE: 4KB

Find | Indexes | Schema Anti-Patterns | Aggregation | Search Indexes

Generate queries from natural language in Compass

INSERT DOCUMENT

Filter | Type a query: { field: 'value' } | Reset | Apply | Options

QUERY RESULTS: 1-3 OF 3

```
{
  "_id": 1,
  "name": "Computer Science"
}
```

```
{
  "_id": 2,
  "name": "Electrical Engineering"
}
```

84°F Haze | Windows | Search | 09:44 23/05/2024