

Lab Tasks

Submission instructions: Perform the following tasks on Mongosh. Submit your query text along with screenshot of query + output.

1. Create a database named SchoolDB.
2. Create two collections:
 - Students
 - Courses
3. Insert the following documents into the `Students` collection:

```
1 { "_id": 1, "name": "Alice", "age": 20, "scores": { "math": 85,
  "science": 90 } }
2 { "_id": 2, "name": "Bob", "age": 22, "scores": { "math": 78,
  "science": 82 } }
3 { "_id": 3, "name": "Charlie", "age": 21, "scores": { "math": 92,
  "science": 88 } }
4 { "_id": 4, "name": "Daisy", "age": 23, "scores": { "math": 68,
  "science": 74 } }
```

4. Insert the following documents into the `Courses` collection:

```
1 { "_id": 101, "courseName": "Mathematics", "instructor": "Dr.
  Smith", "studentsEnrolled": [1, 2, 3] }
2 { "_id": 102, "courseName": "Science", "instructor": "Dr. Adams",
  "studentsEnrolled": [2, 3, 4] }
```

5. Use `findOne` to retrieve:
 - A student where the math score is ≥ 85 **and** the age is < 22 .
 - A course where the `studentsEnrolled` array includes 3 **and** the instructor is "Dr. Adams".
6. Use `find` to retrieve:
 - Students with math score ≥ 80 **and** science score < 90 .
 - Students whose age is < 23 **or** have a math score ≥ 85 .
 - Students with science score ≥ 80 **and** (either math score < 75 or age > 22).
7. Use `updateOne` to:
 - Increase the science score of the student where name is "Bob" and math score is ≥ 75 .
8. Use `updateMany` to:
 - Increase the math score by 5 for students whose science score is < 80 **and** age > 22 .
9. Use `deleteOne` to:
 - Remove a student where name is "Daisy" **and** their science score is < 80 .
10. Use `deleteMany` to:
 - Remove courses where the `studentsEnrolled` array includes 2 **or** the instructor is "Dr. Smith".
11. Drop the `Students` collection.
12. Drop the `Courses` collection.
13. Finally, delete the SchoolDB database.