

Q1 Write a MongoDB query to find all students excluding _id and LastName Field

```
for i in coll_create.find({}, { "_id": 0, "LastName": 0 }):  
    print(i)
```

13] ✓ 0.0s

```
{'RollNum': 18, 'FirstName': 'Eve', 'Age': 19, 'Department': 'Mathematics', 'Mark': 56}  
{'RollNum': 67, 'FirstName': 'Alice', 'Age': 22, 'Department': 'Physics', 'Mark': 59}  
{'RollNum': 23, 'FirstName': 'Bob', 'Age': 21, 'Department': 'Computer Science', 'Mark': 81}  
{'RollNum': 84, 'FirstName': 'Mike', 'Age': 23, 'Department': 'Physics', 'Mark': 92}  
{'RollNum': 43, 'FirstName': 'John', 'Age': 20, 'Department': 'Computer Science', 'Mark': 78}  
{'RollNum': 43, 'FirstName': 'John', 'Age': 20, 'Department': 'Computer Science', 'Mark': 78}  
{'RollNum': 67, 'FirstName': 'Alice', 'Age': 22, 'Department': 'Physics', 'Mark': 59}  
{'RollNum': 23, 'FirstName': 'Bob', 'Age': 21, 'Department': 'Computer Science', 'Mark': 81}  
{'RollNum': 18, 'FirstName': 'Eve', 'Age': 19, 'Department': 'Mathematics', 'Mark': 56}  
{'RollNum': 84, 'FirstName': 'Mike', 'Age': 23, 'Department': 'Physics', 'Mark': 92}
```

Q2 Update the student's age with Rollnum 67 to 26 years

```
coll_create.update_one({"RollNum": 67}, {"$set": {"Age": 26}})  
coll_create.find_one({"RollNum": 67})
```

1 ✓ 0.1s

```
{'_id': ObjectId('65490afd1d0bc40daf734a9e'),  
  'RollNum': 67,  
  'FirstName': 'Alice',  
  'LastName': 'Smith',  
  'Age': 26,  
  'Department': 'Physics',  
  'Mark': 59}
```

Q3 Increase the Age of all students by 1

```
coll_create.update_many({}, {"$inc": {"Age": 1}})
for i in coll_create.find():
    print(i)
```

✓ 0.1s

Python

```
ObjectId('65490afd1d0bc40daf734aa0'), 'RollNum': 18, 'FirstName': 'Eve', 'LastName': 'Adams', 'Age': 23, 'Department': 'Mathematics', 'Mark': 56}
ObjectId('65490afd1d0bc40daf734a9e'), 'RollNum': 67, 'FirstName': 'Alice', 'LastName': 'Smith', 'Age': 30, 'Department': 'Physics', 'Mark': 59}
ObjectId('65490afd1d0bc40daf734a9f'), 'RollNum': 23, 'FirstName': 'Bob', 'LastName': 'Johnson', 'Age': 25, 'Department': 'Computer Science', 'Mark': 81}
ObjectId('65490afd1d0bc40daf734aa1'), 'RollNum': 84, 'FirstName': 'Mike', 'LastName': 'Brown', 'Age': 27, 'Department': 'Physics', 'Mark': 92}
ObjectId('65490afd1d0bc40daf734a9d'), 'RollNum': 43, 'FirstName': 'John', 'LastName': 'Doe', 'Age': 24, 'Department': 'Computer Science', 'Mark': 78}
ObjectId('6558e03b69c09cb4aa8538cb'), 'RollNum': 43, 'FirstName': 'John', 'LastName': 'Doe', 'Age': 24, 'Department': 'Computer Science', 'Mark': 78}
ObjectId('6558e03b69c09cb4aa8538cc'), 'RollNum': 67, 'FirstName': 'Alice', 'LastName': 'Smith', 'Age': 26, 'Department': 'Physics', 'Mark': 59}
ObjectId('6558e03b69c09cb4aa8538cd'), 'RollNum': 23, 'FirstName': 'Bob', 'LastName': 'Johnson', 'Age': 25, 'Department': 'Computer Science', 'Mark': 81}
ObjectId('6558e03b69c09cb4aa8538ce'), 'RollNum': 18, 'FirstName': 'Eve', 'LastName': 'Adams', 'Age': 23, 'Department': 'Mathematics', 'Mark': 56}
ObjectId('6558e03b69c09cb4aa8538cf'), 'RollNum': 84, 'FirstName': 'Mike', 'LastName': 'Brown', 'Age': 27, 'Department': 'Physics', 'Mark': 92}
```

Q4 Increment 5 Mark for all students in the "Computer Science" department.

```
coll_create.update_many({"Department": "Computer Science"}, {"$inc": {"Mark": 5}})
for i in coll_create.find():
    print(i)
```

✓ 0.1s

Python

```
ObjectId('65490afd1d0bc40daf734aa0'), 'RollNum': 18, 'FirstName': 'Eve', 'LastName': 'Adams', 'Age': 23, 'Department': 'Mathematics', 'Mark': 56}
ObjectId('65490afd1d0bc40daf734a9e'), 'RollNum': 67, 'FirstName': 'Alice', 'LastName': 'Smith', 'Age': 30, 'Department': 'Physics', 'Mark': 59}
ObjectId('65490afd1d0bc40daf734a9f'), 'RollNum': 23, 'FirstName': 'Bob', 'LastName': 'Johnson', 'Age': 25, 'Department': 'Computer Science', 'Mark': 86}
ObjectId('65490afd1d0bc40daf734aa1'), 'RollNum': 84, 'FirstName': 'Mike', 'LastName': 'Brown', 'Age': 27, 'Department': 'Physics', 'Mark': 92}
ObjectId('65490afd1d0bc40daf734a9d'), 'RollNum': 43, 'FirstName': 'John', 'LastName': 'Doe', 'Age': 24, 'Department': 'Computer Science', 'Mark': 83}
ObjectId('6558e03b69c09cb4aa8538cb'), 'RollNum': 43, 'FirstName': 'John', 'LastName': 'Doe', 'Age': 24, 'Department': 'Computer Science', 'Mark': 83}
ObjectId('6558e03b69c09cb4aa8538cc'), 'RollNum': 67, 'FirstName': 'Alice', 'LastName': 'Smith', 'Age': 26, 'Department': 'Physics', 'Mark': 59}
ObjectId('6558e03b69c09cb4aa8538cd'), 'RollNum': 23, 'FirstName': 'Bob', 'LastName': 'Johnson', 'Age': 25, 'Department': 'Computer Science', 'Mark': 86}
ObjectId('6558e03b69c09cb4aa8538ce'), 'RollNum': 18, 'FirstName': 'Eve', 'LastName': 'Adams', 'Age': 23, 'Department': 'Mathematics', 'Mark': 56}
ObjectId('6558e03b69c09cb4aa8538cf'), 'RollNum': 84, 'FirstName': 'Mike', 'LastName': 'Brown', 'Age': 27, 'Department': 'Physics', 'Mark': 92}
```

Q5 Reduce 10 Marks for all students in the "Mathematics" department.

```
coll_create.update_many({"Department": "Mathematics"}, {"$inc": {"Mark": -10}})
for i in coll_create.find():
    print(i)
```

[34] ✓ 0.1s

Python

```
... ObjectId('65490afd1d0bc40daf734aa0'), 'RollNum': 18, 'FirstName': 'Eve', 'LastName': 'Adams', 'Age': 23, 'Department': 'Mathematics', 'Mark': 46}
ObjectId('65490afd1d0bc40daf734a9e'), 'RollNum': 67, 'FirstName': 'Alice', 'LastName': 'Smith', 'Age': 30, 'Department': 'Physics', 'Mark': 59}
ObjectId('65490afd1d0bc40daf734a9f'), 'RollNum': 23, 'FirstName': 'Bob', 'LastName': 'Johnson', 'Age': 25, 'Department': 'Computer Science', 'Mark': 86}
ObjectId('65490afd1d0bc40daf734aa1'), 'RollNum': 84, 'FirstName': 'Mike', 'LastName': 'Brown', 'Age': 27, 'Department': 'Physics', 'Mark': 92}
ObjectId('65490afd1d0bc40daf734a9d'), 'RollNum': 43, 'FirstName': 'John', 'LastName': 'Doe', 'Age': 24, 'Department': 'Computer Science', 'Mark': 83}
ObjectId('6558e03b69c09cb4aa8538cb'), 'RollNum': 43, 'FirstName': 'John', 'LastName': 'Doe', 'Age': 24, 'Department': 'Computer Science', 'Mark': 83}
ObjectId('6558e03b69c09cb4aa8538cc'), 'RollNum': 67, 'FirstName': 'Alice', 'LastName': 'Smith', 'Age': 26, 'Department': 'Physics', 'Mark': 59}
ObjectId('6558e03b69c09cb4aa8538cd'), 'RollNum': 23, 'FirstName': 'Bob', 'LastName': 'Johnson', 'Age': 25, 'Department': 'Computer Science', 'Mark': 86}
ObjectId('6558e03b69c09cb4aa8538ce'), 'RollNum': 18, 'FirstName': 'Eve', 'LastName': 'Adams', 'Age': 23, 'Department': 'Mathematics', 'Mark': 46}
ObjectId('6558e03b69c09cb4aa8538cf'), 'RollNum': 84, 'FirstName': 'Mike', 'LastName': 'Brown', 'Age': 27, 'Department': 'Physics', 'Mark': 92}
```

Q6 Update the Department name of all students in the "Physics" department to "Physical Science".

```
coll_create.update_many({ "Department": "Physics" }, { "$set": { "Department": "Physical Science" } })
for i in coll_create.find():
    print(i)
```

✓ 0.1s

Python

```
ObjectId('65490afd1d0bc40daf734aa0'), 'RollNum': 18, 'FirstName': 'Eve', 'LastName': 'Adams', 'Age': 23, 'Department': 'Mathematics', 'Mark': 46}
ObjectId('65490afd1d0bc40daf734a9e'), 'RollNum': 67, 'FirstName': 'Alice', 'LastName': 'Smith', 'Age': 30, 'Department': 'Physical Science', 'Mark': 59}
ObjectId('65490afd1d0bc40daf734a9f'), 'RollNum': 23, 'FirstName': 'Bob', 'LastName': 'Johnson', 'Age': 25, 'Department': 'Computer Science', 'Mark': 86}
ObjectId('65490afd1d0bc40daf734aa1'), 'RollNum': 84, 'FirstName': 'Mike', 'LastName': 'Brown', 'Age': 27, 'Department': 'Physical Science', 'Mark': 92}
ObjectId('65490afd1d0bc40daf734a9d'), 'RollNum': 43, 'FirstName': 'John', 'LastName': 'Doe', 'Age': 24, 'Department': 'Computer Science', 'Mark': 83}
ObjectId('6558e03b69c09cb4aa8538cb'), 'RollNum': 43, 'FirstName': 'John', 'LastName': 'Doe', 'Age': 24, 'Department': 'Computer Science', 'Mark': 83}
ObjectId('6558e03b69c09cb4aa8538cc'), 'RollNum': 67, 'FirstName': 'Alice', 'LastName': 'Smith', 'Age': 26, 'Department': 'Physical Science', 'Mark': 59}
ObjectId('6558e03b69c09cb4aa8538cd'), 'RollNum': 23, 'FirstName': 'Bob', 'LastName': 'Johnson', 'Age': 25, 'Department': 'Computer Science', 'Mark': 86}
ObjectId('6558e03b69c09cb4aa8538ce'), 'RollNum': 18, 'FirstName': 'Eve', 'LastName': 'Adams', 'Age': 23, 'Department': 'Mathematics', 'Mark': 46}
ObjectId('6558e03b69c09cb4aa8538cf'), 'RollNum': 84, 'FirstName': 'Mike', 'LastName': 'Brown', 'Age': 27, 'Department': 'Physical Science', 'Mark': 92}
```

Q7 Calculate the average age of all students

+ Code

```
pipeline = [
    {"$group": {"_id": "null", "averageAge": {"$avg": "$Age"}}}]
result = list(coll_create.aggregate(pipeline))
print(result)
```

✓ 0.0s

```
[{'_id': 'null', 'averageAge': 25.4}]
```

Q8 Calculate the average Mark of all students in the "Physical Science" department.

```
pipeline = [
    {"$match": { "Department": "Physical Science" } },
    {"$group": { "_id": "null", "averageMark": { "$avg": "$Mark" } } }
]
result = list(coll_create.aggregate(pipeline))
print(result)
```

✓ 0.0s

```
[{'_id': 'null', 'averageMark': 75.5}]
```

Q9 Remove all the students of the "Mathematics" department.

```
coll_create.delete_many({ "Department": "Mathematics" })
for i in coll_create.find():
    print(i)
```

✓ 0.1s

Python

```
ObjectId('65490afd1d0bc40daf734a9e'), 'RollNum': 67, 'FirstName': 'Alice', 'LastName': 'Smith', 'Age': 30, 'Department': 'Physical Science', 'Mark': 59}
ObjectId('65490afd1d0bc40daf734a9f'), 'RollNum': 23, 'FirstName': 'Bob', 'LastName': 'Johnson', 'Age': 25, 'Department': 'Computer Science', 'Mark': 86}
ObjectId('65490afd1d0bc40daf734aa1'), 'RollNum': 84, 'FirstName': 'Mike', 'LastName': 'Brown', 'Age': 27, 'Department': 'Physical Science', 'Mark': 92}
ObjectId('65490afd1d0bc40daf734a9d'), 'RollNum': 43, 'FirstName': 'John', 'LastName': 'Doe', 'Age': 24, 'Department': 'Computer Science', 'Mark': 83}
ObjectId('6558e03b69c09cb4aa8538cb'), 'RollNum': 43, 'FirstName': 'John', 'LastName': 'Doe', 'Age': 24, 'Department': 'Computer Science', 'Mark': 83}
ObjectId('6558e03b69c09cb4aa8538cc'), 'RollNum': 67, 'FirstName': 'Alice', 'LastName': 'Smith', 'Age': 26, 'Department': 'Physical Science', 'Mark': 59}
ObjectId('6558e03b69c09cb4aa8538cd'), 'RollNum': 23, 'FirstName': 'Bob', 'LastName': 'Johnson', 'Age': 25, 'Department': 'Computer Science', 'Mark': 86}
ObjectId('6558e03b69c09cb4aa8538cf'), 'RollNum': 84, 'FirstName': 'Mike', 'LastName': 'Brown', 'Age': 27, 'Department': 'Physical Science', 'Mark': 92}
```

Q10 Remove all the students whose mark is less than 60.

```
coll_create.delete_many({ "Mark": { "$lt": 60 } })
for i in coll_create.find():
    print(i)
```

✓ 0.1s

Python

```
ObjectId('65490afd1d0bc40daf734a9f'), 'RollNum': 23, 'FirstName': 'Bob', 'LastName': 'Johnson', 'Age': 25, 'Department': 'Computer Science', 'Mark': 86}
ObjectId('65490afd1d0bc40daf734aa1'), 'RollNum': 84, 'FirstName': 'Mike', 'LastName': 'Brown', 'Age': 27, 'Department': 'Physical Science', 'Mark': 92}
ObjectId('65490afd1d0bc40daf734a9d'), 'RollNum': 43, 'FirstName': 'John', 'LastName': 'Doe', 'Age': 24, 'Department': 'Computer Science', 'Mark': 83}
ObjectId('6558e03b69c09cb4aa8538cb'), 'RollNum': 43, 'FirstName': 'John', 'LastName': 'Doe', 'Age': 24, 'Department': 'Computer Science', 'Mark': 83}
ObjectId('6558e03b69c09cb4aa8538cd'), 'RollNum': 23, 'FirstName': 'Bob', 'LastName': 'Johnson', 'Age': 25, 'Department': 'Computer Science', 'Mark': 86}
ObjectId('6558e03b69c09cb4aa8538cf'), 'RollNum': 84, 'FirstName': 'Mike', 'LastName': 'Brown', 'Age': 27, 'Department': 'Physical Science', 'Mark': 92}
```