```
import pymongo
client=pymongo.MongoClient("mongodb+srv://t23cs010:deibynta@cluster0.ugatn9a.mongodb.net/?retryWrites=true&w=majority")
```

```
db=client['mongodb']
```

```
collection = db["Student"]
```

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

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

✓ 0.7s

```
{'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}
```

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

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

✓ 0.2s

```
{'_id': ObjectId('6548ccbd13bcdb7d44650429'),
 'RollNum': 67,
 'FirstName': 'Alice',
 'LastName': 'Smith',
 'Age': 26,
 'Department': 'Physics',
 'Mark': 59}
```

3. Increase the Age of all students by 1.

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

✓ 0.2s Python

```
{'_id': ObjectId('6548ccbd13bcdb7d44650428'), 'RollNum': 43, 'FirstName': 'John', 'LastName': 'Doe', 'Age': 21, 'Departmen
{'_id': ObjectId('6548ccbd13bcdb7d44650429'), 'RollNum': 67, 'FirstName': 'Alice', 'LastName': 'Smith', 'Age': 27, 'Departı
{'_id': ObjectId('6548ccbd13bcdb7d4465042a'), 'RollNum': 23, 'FirstName': 'Bob', 'LastName': 'Johnson', 'Age': 22, 'Departı
{'_id': ObjectId('6548ccbd13bcdb7d4465042b'), 'RollNum': 18, 'FirstName': 'Eve', 'LastName': 'Adams', 'Age': 20, 'Departmeı
{'_id': ObjectId('6548ccbd13bcdb7d4465042c'), 'RollNum': 84, 'FirstName': 'Mike', 'LastName': 'Brown', 'Age': 24, 'Departmı
```

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

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

✓ 0.2s Python

```
{'_id': ObjectId('6548ccbd13bcdb7d44650428'), 'RollNum': 43, 'FirstName': 'John', 'LastName': 'Doe', 'Age': 21, 'Departmen
{'_id': ObjectId('6548ccbd13bcdb7d44650429'), 'RollNum': 67, 'FirstName': 'Alice', 'LastName': 'Smith', 'Age': 27, 'Departı
{'_id': ObjectId('6548ccbd13bcdb7d4465042a'), 'RollNum': 23, 'FirstName': 'Bob', 'LastName': 'Johnson', 'Age': 22, 'Departı
{'_id': ObjectId('6548ccbd13bcdb7d4465042b'), 'RollNum': 18, 'FirstName': 'Eve', 'LastName': 'Adams', 'Age': 20, 'Departmeı
{'_id': ObjectId('6548ccbd13bcdb7d4465042c'), 'RollNum': 84, 'FirstName': 'Mike', 'LastName': 'Brown', 'Age': 24, 'Departmı
```

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

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

✓ 0.2s Python

```
{'_id': ObjectId('6548ccbd13bcdb7d44650428'), 'RollNum': 43, 'FirstName': 'John', 'LastName': 'Doe', 'Age': 21, 'Departmen
{'_id': ObjectId('6548ccbd13bcdb7d44650429'), 'RollNum': 67, 'FirstName': 'Alice', 'LastName': 'Smith', 'Age': 27, 'Departı
{'_id': ObjectId('6548ccbd13bcdb7d4465042a'), 'RollNum': 23, 'FirstName': 'Bob', 'LastName': 'Johnson', 'Age': 22, 'Departı
{'_id': ObjectId('6548ccbd13bcdb7d4465042b'), 'RollNum': 18, 'FirstName': 'Eve', 'LastName': 'Adams', 'Age': 20, 'Departmeı
{'_id': ObjectId('6548ccbd13bcdb7d4465042c'), 'RollNum': 84, 'FirstName': 'Mike', 'LastName': 'Brown', 'Age': 24, 'Departmı
```

6. Update the Department name of all students in the "Physics" department to “Physical Science”.

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

✓ 1.6s Python

```
{'_id': ObjectId('6548ccbd13bcdb7d44650428'), 'RollNum': 43, 'FirstName': 'John', 'LastName': 'Doe', 'Age': 21, 'Departmen
{'_id': ObjectId('6548ccbd13bcdb7d44650429'), 'RollNum': 67, 'FirstName': 'Alice', 'LastName': 'Smith', 'Age': 27, 'Departı
{'_id': ObjectId('6548ccbd13bcdb7d4465042a'), 'RollNum': 23, 'FirstName': 'Bob', 'LastName': 'Johnson', 'Age': 22, 'Departı
{'_id': ObjectId('6548ccbd13bcdb7d4465042b'), 'RollNum': 18, 'FirstName': 'Eve', 'LastName': 'Adams', 'Age': 20, 'Departmeı
{'_id': ObjectId('6548ccbd13bcdb7d4465042c'), 'RollNum': 84, 'FirstName': 'Mike', 'LastName': 'Brown', 'Age': 24, 'Departmı
```

7. Calculate the average age of all students.

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

✓ 0.1s

```
[{'_id': 'null', 'averageAge': 22.8}]
```

8. 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(db.Student.aggregate(pipeline))
print(result)
```

✓ 0.1s

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

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

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

✓ 0.2s Python

```
{'_id': ObjectId('6548ccbd13bcdb7d44650428'), 'RollNum': 43, 'FirstName': 'John', 'LastName': 'Doe', 'Age': 21, 'Departmen
{'_id': ObjectId('6548ccbd13bcdb7d44650429'), 'RollNum': 67, 'FirstName': 'Alice', 'LastName': 'Smith', 'Age': 27, 'Depart
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{'_id': ObjectId('6548ccbd13bcdb7d4465042c'), 'RollNum': 84, 'FirstName': 'Mike', 'LastName': 'Brown', 'Age': 24, 'Departm
```

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

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

✓ 0.2s Python

```
{'_id': ObjectId('6548ccbd13bcdb7d44650428'), 'RollNum': 43, 'FirstName': 'John', 'LastName': 'Doe', 'Age': 21, 'Departmen
{'_id': ObjectId('6548ccbd13bcdb7d4465042a'), 'RollNum': 23, 'FirstName': 'Bob', 'LastName': 'Johnson', 'Age': 22, 'Depart
{'_id': ObjectId('6548ccbd13bcdb7d4465042c'), 'RollNum': 84, 'FirstName': 'Mike', 'LastName': 'Brown', 'Age': 24, 'Departm
```