

Programming Lab 3

Assignment 08

Study of MongoDB

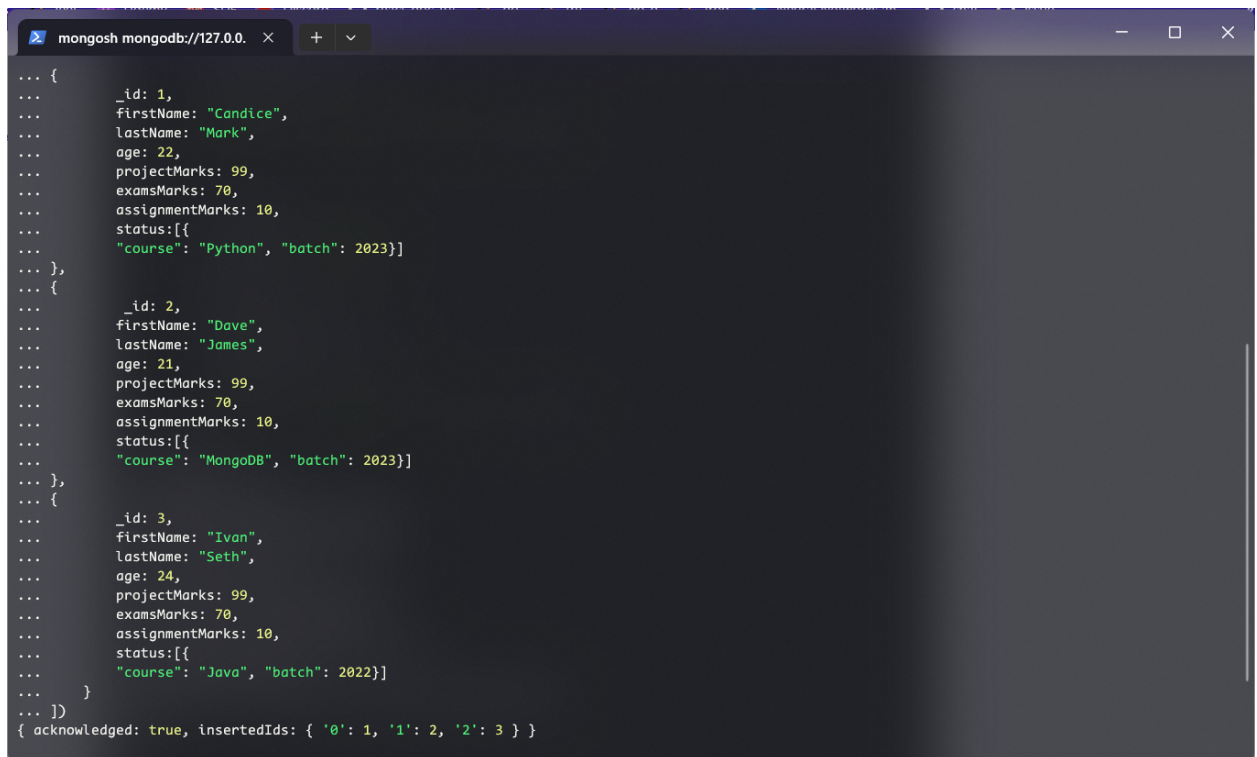
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Batch : T-1

Problem Statement 1:

- Create a collection in MongoDB:



```
... {
...   _id: 1,
...   firstName: "Candice",
...   lastName: "Mark",
...   age: 22,
...   projectMarks: 99,
...   examsMarks: 70,
...   assignmentMarks: 10,
...   status:[{
...     "course": "Python", "batch": 2023}]
... },
... {
...   _id: 2,
...   firstName: "Dave",
...   lastName: "James",
...   age: 21,
...   projectMarks: 99,
...   examsMarks: 70,
...   assignmentMarks: 10,
...   status:[{
...     "course": "MongoDB", "batch": 2023}]
... },
... {
...   _id: 3,
...   firstName: "Ivan",
...   lastName: "Seth",
...   age: 24,
...   projectMarks: 99,
...   examsMarks: 70,
...   assignmentMarks: 10,
...   status:[{
...     "course": "Java", "batch": 2022}]
... }
... ]
{ acknowledged: true, insertedIds: { '0': 1, '1': 2, '2': 3 } }
```

- Perform following operations :

1. Group by a Single Field in MongoDB

```
mongosh mongodb://127.0.0.1:27020 > use student
pl> db.student.aggregate([
...   { $group: { _id: "$age", marks: { $sum: 1 } } }
... ])
[ { _id: 22, marks: 1 }, { _id: 24, marks: 1 }, { _id: 21, marks: 1 } ]
pl>
```

2. Group by Multiple Fields in MongoDB

```
mongosh mongodb://127.0.0.1:27020 > use student
pl> db.student.aggregate([
...   { $group: { _id: { firstName: "$firstName", lastName: "$lastName" },
...               age: { $sum: 1 } }
...   }
... ])
[
  { _id: { firstName: 'Candice', lastName: 'Mark' }, age: 1 },
  { _id: { firstName: 'Dave', lastName: 'James' }, age: 1 },
  { _id: { firstName: 'Ivan', lastName: 'Seth' }, age: 1 }
]
pl>
```

3. Group by the Multiple Expressions

```
mongosh mongodb://127.0.0.1:27020/
pl> db.student.aggregate([
...   { $group: { _id: { projectMarks: "$projectMarks" },
...               total_examsMarks: { $sum: "$examsMarks" },
...               total_assignmentMarks: { $sum: "$assignmentMarks" }
...             }
...   })
[
  {
    _id: { projectMarks: 99 },
    total_examsMarks: 210,
    total_assignmentMarks: 30
  }
]
pl>
```

4. Group by the Conditional Statements in MongoDB

```
mongosh mongodb://127.0.0.1:27020/
pl> db.student.aggregate([
...   { $match: { projectMarks: { $eq: 99 } } },
...   { $group: { _id: "$age", assignmentMarks: { $sum: 1 } } }
... ])
[
  { _id: 22, assignmentMarks: 1 },
  { _id: 24, assignmentMarks: 1 },
  { _id: 21, assignmentMarks: 1 }
]
pl>
```

5. Group by a Nested Field in MongoDB

```
mongosh mongodb://127.0.0.1:27027/
p1> db.student.aggregate([
...   { $unwind: "$status" },
...   { $group: { _id: "$status.course", Batch_No: { $sum: "$status.batch" } } }
... ])
[
  { _id: 'Python', Batch_No: 2023 },
  { _id: 'Java', Batch_No: 2022 },
  { _id: 'MongoDB', Batch_No: 2023 }
]
p1> |
```