

MongoDB Assignment

Inserting, Updating, Deleting Elements (22.07.2025)

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1. Inserting Data

Insert a single document:

```
db.products.insertOne({ name: "Laptop Stand", qty: 40, tags: ["metal", "adjustable"], specs: { width: 30, height: 15 }, unit: "cm" });
```

```
test> db.products.insertOne({ name: "Laptop Stand", qty: 40, tags: ["metal", "adjustable"], specs: { width: 30, height: 15 }, unit: "cm" })
{
  acknowledged: true,
  insertedId: ObjectId('6880f9de11dae4e9e1ec4a9')
}
```

Insert multiple documents:

```
db.products.insertMany([
  { name: "Wireless Charger", qty: 70, tags: ["fast", "portable"], specs: { width: 10, height: 10 }, unit: "cm" },
  { name: "Desk Lamp", qty: 25, tags: ["led", "white"], specs: { width: 12, height: 35 }, unit: "cm" },
  { name: "Keyboard Tray", qty: 50, tags: ["wood", "black"], specs: { width: 45, height: 10 }, unit: "cm" }
]);
```

```
test> db.products.insertMany([
... { name: "Wireless Charger", qty: 70, tags: ["fast", "portable"], specs: { width: 10, height: 10 }, unit: "cm" },
... { name: "Desk Lamp", qty: 25, tags: ["led", "white"], specs: { width: 12, height: 35 }, unit: "cm" },
... { name: "Keyboard Tray", qty: 50, tags: ["wood", "black"], specs: { width: 45, height: 10 }, unit: "cm" }
... ]);
{
  acknowledged: true,
  insertedIds: {
    '0': ObjectId('6880f9ec11dae4e9e1ec4aa'),
    '1': ObjectId('6880f9ec11dae4e9e1ec4ab'),
    '2': ObjectId('6880f9ec11dae4e9e1ec4ac')
  }
}
```

2. Finding Data

Find products where name = "Desk Lamp":

```
db.products.find({ name: "Desk Lamp" });
```

```

test> db.products.find({ name: "Desk Lamp" });
[
  {
    _id: ObjectId('6880f80324dfd53230eec4ab'),
    name: 'Desk Lamp',
    qty: 25,
    tags: [ 'led', 'white' ],
    specs: { width: 12, height: 35 },
    unit: 'cm'
  },
  {
    _id: ObjectId('6880f9ec11dae4e9e1eec4ab'),
    name: 'Desk Lamp',
    qty: 25,
    tags: [ 'led', 'white' ],
    specs: { width: 12, height: 35 },
    unit: 'cm'
  }
]

```

Find all products:

db.products.find();

```

test> db.products.find();
[
  {
    _id: ObjectId('6880f6e0ded401c0f8eec4a9'),
    name: 'Phone Holder',
    qty: 60,
    tags: [ 'plastic', 'foldable' ],
    specs: { width: 7, height: 14 },
    unit: 'cm'
  },
  {
    _id: ObjectId('6880f710ded401c0f8eec4aa'),
    name: 'USB Hub',
    qty: 45,
    tags: [ 'tech', 'black' ],
    specs: { width: 12, height: 4 },
    unit: 'cm'
  },
  {
    _id: ObjectId('6880f710ded401c0f8eec4ab'),
    name: 'Notebook Stand',
    qty: 30,
    tags: [ 'silver' ],
    specs: { width: 32, height: 25 },
    unit: 'cm'
  },
  {
    _id: ObjectId('6880f710ded401c0f8eec4ac'),
    name: 'Cable Organizer',
    qty: 75,
    tags: [ 'flexible', 'blue' ],
    specs: { width: 10, height: 2 },
    unit: 'cm'
  },
]

```

Find one product with name = "Keyboard Tray":

```
db.products.findOne({ name: "Keyboard Tray" });
```

```
test> db.products.findOne({ name: "Keyboard Tray" });
{
  _id: ObjectId('6880f80324dfd53230eec4ac'),
  name: 'Keyboard Tray',
  qty: 50,
  tags: [ 'wood', 'black' ],
  specs: { width: 45, height: 10 },
  unit: 'cm'
}
```

3. Updating Data

Update one document: set qty = 60 for "Wireless Charger":

```
db.products.updateOne( { name: "Wireless Charger" }, { $set: { qty: 60 } });
```

```
test> db.products.updateOne( { name: "Wireless Charger" }, { $set: { qty: 60 } });
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
```

Update many documents: set qty = 80 where qty = 50:

```
db.products.updateMany({ qty: 50 }, { $set: { qty: 80 } });
```

```
test> db.products.updateMany({ qty: 50 }, { $set: { qty: 80 } });
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 2,
  modifiedCount: 2,
  upsertedCount: 0
}
```

4. Deleting Data

Delete one product with name = "Desk Lamp":

```
db.products.deleteOne({ name: "Desk Lamp" });
```

```
test> db.products.deleteOne({ name: "Desk Lamp" });
{ acknowledged: true, deletedCount: 1 }
```

Delete many products with qty = 80:

```
db.products.deleteMany({ qty: 80 });
```

```
test> db.products.deleteMany({ qty: 80 });
{ acknowledged: true, deletedCount: 2 }
```

Find one product and delete it:

```
db.products.findOneAndDelete({ name: "Laptop Stand" });
```

```
test> db.products.findOneAndDelete({ name: "Laptop Stand" });
{
  _id: ObjectId('6880f7f824dfd53230eec4a9'),
  name: 'Laptop Stand',
  qty: 40,
  tags: [ 'metal', 'adjustable' ],
  specs: { width: 30, height: 15 },
  unit: 'cm'
}
```

PROJECTION

1. Show only specific fields (name and qty):

```
db.products.find({}, { name: 1, qty: 1 });
```

```
test> db.products.find({}, { name: 1, qty: 1 });
[
  {
    _id: ObjectId('6880f6e0ded401c0f8eec4a9'),
    name: 'Phone Holder',
    qty: 60
  },
  {
    _id: ObjectId('6880f710ded401c0f8eec4aa'),
    name: 'USB Hub',
    qty: 45
  },
  {
    _id: ObjectId('6880f710ded401c0f8eec4ab'),
    name: 'Notebook Stand',
    qty: 30
  },
  {
    _id: ObjectId('6880f710ded401c0f8eec4ac'),
    name: 'Cable Organizer',
    qty: 75
  },
]
```

2. Include only selected fields and exclude _id:

```
db.products.find({}, { name: 1, qty: 1, _id: 0 });
```

```
test> db.products.find({}, { name: 1, qty: 1, _id: 0 });
[
  { name: 'Phone Holder', qty: 60 },
  { name: 'USB Hub', qty: 45 },
  { name: 'Notebook Stand', qty: 30 },
  { name: 'Cable Organizer', qty: 75 },
  { name: 'Wireless Charger', qty: 60 },
  { name: 'Laptop Stand', qty: 40 },
  { name: 'Wireless Charger', qty: 70 },
  { name: 'Desk Lamp', qty: 25 }
]
```

3. Show name and unit, without _id:

```
db.products.find({}, { name: 1, unit: 1, _id: 0 });
```

```
test> db.products.find({}, { name: 1, unit: 1, _id: 0 });
[
  { name: 'Phone Holder', unit: 'cm' },
  { name: 'USB Hub', unit: 'cm' },
  { name: 'Notebook Stand', unit: 'cm' },
  { name: 'Cable Organizer', unit: 'cm' },
  { name: 'Wireless Charger', unit: 'cm' },
  { name: 'Laptop Stand', unit: 'cm' },
  { name: 'Wireless Charger', unit: 'cm' },
  { name: 'Desk Lamp', unit: 'cm' }
]
```

4. Filter and project (qty: 70):

```
db.products.find({ qty: 70 }, { name: 1, qty: 1, _id: 0 });
```

```
test> db.products.find({ qty: 70 }, { name: 1, qty: 1, _id: 0 });
[ { name: 'Wireless Charger', qty: 70 } ]
```

5. Show only one field (name) without _id:

```
db.products.find({}, { name: 1, _id: 0 });
```

```
test> db.products.find({}, { name: 1, _id: 0 });
[
  { name: 'Phone Holder' },
  { name: 'USB Hub' },
  { name: 'Notebook Stand' },
  { name: 'Cable Organizer' },
  { name: 'Wireless Charger' },
  { name: 'Laptop Stand' },
  { name: 'Wireless Charger' },
  { name: 'Desk Lamp' }
]
```

6. Project tags array only:

```
db.products.find({}, { tags: 1, _id: 0 });
```

```
test> db.products.find({}, { tags: 1, _id: 0 });
[
  { tags: [ 'plastic', 'foldable' ] },
  { tags: [ 'tech', 'black' ] },
  { tags: [ 'silver' ] },
  { tags: [ 'flexible', 'blue' ] },
  { tags: [ 'fast', 'portable' ] },
  { tags: [ 'metal', 'adjustable' ] },
  { tags: [ 'fast', 'portable' ] },
  { tags: [ 'led', 'white' ] }
]
```

7. Show nested field from embedded document (specs.width and name):

```
db.products.find({}, { "specs.width": 1, name: 1, _id: 0 });
```

```
test> db.products.find({}, { "specs.width": 1, name: 1, _id: 0 });
[
  { name: 'Phone Holder', specs: { width: 7 } },
  { name: 'USB Hub', specs: { width: 12 } },
  { name: 'Notebook Stand', specs: { width: 32 } },
  { name: 'Cable Organizer', specs: { width: 10 } },
  { name: 'Wireless Charger', specs: { width: 10 } },
  { name: 'Laptop Stand', specs: { width: 30 } },
  { name: 'Wireless Charger', specs: { width: 10 } },
  { name: 'Desk Lamp', specs: { width: 12 } }
]
```