

# MongoDB - CRUD

Topics : [MongoDB](#)

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CRUD stands for Create, Read, Update, and Delete, which are the basic operations that can be performed on any persistent storage. MongoDB, being a NoSQL database, provides a flexible and powerful set of CRUD operations. Here's an overview of how CRUD operations are implemented in MongoDB:

## 1. Create (Insert):

To insert documents into a MongoDB collection, you use the `insertOne` or `insertMany` method.

### Example - Insert a Single Document:

```
db.collection_name.insertOne({
  field1: value1,
  field2: value2,
  // ... other fields
});
```

### Example - Insert Multiple Documents:

```
db.collection_name.insertMany([
  { field1: value1, field2: value2 },
  { field1: value3, field2: value4 },
  // ... other documents
]);
```

## 2. Read (Query):

To retrieve documents from a MongoDB collection, you use the `find` method.

### Example - Find All Documents:

```
db.collection_name.find();
```

### Example - Find Documents Matching a Condition:

```
db.collection_name.find({ field: value });
```

### **Example - Find Documents with Projections (selecting specific fields):**

```
db.collection_name.find({}).project({ field1: 1, field2: 1, _id: 0 });
```

### **Example - Find One Document:**

```
db.collection_name.findOne({ field: value });
```

## **3. Update:**

To update documents in a MongoDB collection, you use the `updateOne` or `updateMany` method.

### **Example - Update a Single Document:**

```
db.collection_name.updateOne(  
  { field: value },  
  { $set: { updated_field: new_value } }  
);
```

### **Example - Update Multiple Documents:**

```
db.collection_name.updateMany(  
  { field: value },  
  { $set: { updated_field: new_value } }  
);
```

## **4. Delete:**

To remove documents from a MongoDB collection, you use the `deleteOne` or `deleteMany` method.

### **Example - Delete a Single Document:**

```
db.collection_name.deleteOne({ field: value });
```

### **Example - Delete Multiple Documents:**

```
db.collection_name.deleteMany({ field: value });
```

## **Additional Notes:**

- **Upsert:** The `updateOne` and `updateMany` methods can also be used with the `upsert` option to perform an update or insert if the document doesn't exist.

- **Atomic Operations:** MongoDB provides atomic operations at the document level. Updates are atomic on a single document, even if multiple fields are modified.
- **Aggregation Framework:** For complex data transformations or aggregations, MongoDB offers a powerful Aggregation Framework that allows you to pipeline multiple operations.

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