



# MangoDB Class

**#MangoDB Notes**

# | MongoDB Array



# MongoDB Array

- MongoDB Array is a flexible document structure; it will make it possible to have a field with array as a value in MongoDB.
- We can define an array of string, integer, embedded documents, Json and BSON data types, array in it can be defined as any form of data types.
- **Syntax :-**
  - `db.student.insertOne({st_name:"ABC",mark:[85,89,95]})`



# Student Collection Data Example

```
mydb> db.student.find()
[
  {
    _id: ObjectId("618ba5d157c1ea8b47dac310"),
    st_name: 'ABC',
    mark: [ 82, 85, 88 ]
  },
  {
    _id: ObjectId("618ba5f557c1ea8b47dac311"),
    st_name: 'xyz',
    mark: [ 88, 88, 90 ]
  },
  {
    _id: ObjectId("618ba67e57c1ea8b47dac312"),
    st_name: 'jkl',
    mark: [ 85, 89, 95 ]
  }
]
mydb>
```



# Array Operators

- \$all
- \$elemMatch
- \$size
- \$
- \$pull
- \$push
- \$pop



# 1. \$all

- \$all array operator is used to display all the value from the array field.

```
mydb> db.student.find({mark: {$all:[88]}})
[
  {
    _id: ObjectId("618ba5d157c1ea8b47dac310"),
    st_name: 'ABC',
    mark: [ 82, 85, 88 ]
  },
  {
    _id: ObjectId("618ba5f557c1ea8b47dac311"),
    st_name: 'xyz',
    mark: [ 88, 88, 90 ]
  }
]
mydb>
```



## 2. \$elemMatch

- \$elemMatch array operator is used to match the document which contains the array field and contains only one field to match our given criteria:

```
mydb> db.student.find({mark: {$elemMatch: {$gte:85, $lt:95}}})
[
  {
    _id: ObjectId("618ba5d157c1ea8b47dac310"),
    st_name: 'ABC',
    mark: [ 82, 85, 88 ]
  },
  {
    _id: ObjectId("618ba5f557c1ea8b47dac311"),
    st_name: 'xyz',
    mark: [ 88, 88, 90 ]
  },
  {
    _id: ObjectId("618ba67e57c1ea8b47dac312"),
    st_name: 'jkl',
    mark: [ 85, 89, 95 ]
  }
]
mydb>
```



## 3. \$size

- The size array operator in MongoDB will match any array with the number of elements specified by the argument.

```
mydb> db.student.find({mark: {$size: 3}})
[
  {
    _id: ObjectId("618ba5d157c1ea8b47dac310"),
    st_name: 'ABC',
    mark: [ 82, 85, 88 ]
  },
  {
    _id: ObjectId("618ba5f557c1ea8b47dac311"),
    st_name: 'xyz',
    mark: [ 88, 88, 90 ]
  },
  {
    _id: ObjectId("618ba67e57c1ea8b47dac312"),
    st_name: 'jkl',
    mark: [ 85, 89, 95 ]
  }
]
mydb>
```





## 4. \$

- \$ Array operator is used to identify array element and update the same into the collection.

```
mydb> db.student.updateOne({st_name: "ABC",mark: 85},{ $set: {"mark.$" : 95}})
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
mydb> db.student.find({st_name: "ABC"})
[
  {
    _id: ObjectId("618ba5d157c1ea8b47dac310"),
    st_name: 'ABC',
    mark: [ 82, 95, 88 ]
  }
]
mydb>
```



## 5. \$pop

- \$pop array operator is used to remove the first and last element from an array.
- To remove the first element from an array use -1.
- To remove the last element from an array use 1.



# Remove First Element From The array

```
mydb> db.student.updateOne({st_name: "ABC"}, { $pop: {mark: -1}})
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
mydb> db.student.find({st_name: "ABC"})
[
  {
    _id: ObjectId("618ba5d157c1ea8b47dac310"),
    st_name: 'ABC',
    mark: [ 95, 88 ]
  }
]
mydb>
```



# Remove Last Element From The array

```
mydb> db.student.updateOne({st_name: "xyz"}, { $pop: {mark: 1}})
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
mydb> db.student.find({st_name: "xyz"})
[
  {
    _id: ObjectId("618ba5f557c1ea8b47dac311"),
    st_name: 'xyz',
    mark: [ 88, 88 ]
  }
]
mydb>
```



## 6. \$pull

- A pull array operator is used to remove elements from an existing array.

```
mydb> db.student.update({st_name: "ABC"}, { $pull: {mark: {$gte: 95}}})
DeprecationWarning: Collection.update() is deprecated. Use updateOne, updateMany, or bulkWrite.
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
mydb> db.student.find({st_name: "ABC"})
[
  {
    _id: ObjectId("618ba5d157c1ea8b47dac310"),
    st_name: 'ABC',
    mark: [ 88 ]
  }
]
mydb>
```



## 7. \$push

- A push array operator is used to append the value into the existing collection.

```
mydb> db.student.updateOne({st_name: "ABC"}, { $push: {mark:97}})
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
mydb> db.student.find({st_name: "ABC"})
[
  {
    _id: ObjectId("618ba5d157c1ea8b47dac310"),
    st_name: 'ABC',
    mark: [ 88, 97 ]
  }
]
mydb>
```



# **MongoDB Relationships**



# MongoDB Relationships

- The representation of how the number of multiple documents is connected logically to each other is known as MongoDB Relationships.
- Methods to Create MongoDB Relationships :-
  - Embedded Relationships
  - Documented Reference Relationships
- Embed works great with One-to-One and One-to-Many relationships, the referenced is good for Many-to-Many relationships.





- These two types of relationships are also known as Denormalization, which is Embedded, while Reference relationships are known as Normalization.
- Establishing relationships between documents can help refine the database structure and work in favour to develop the performance and make execution time shorter.



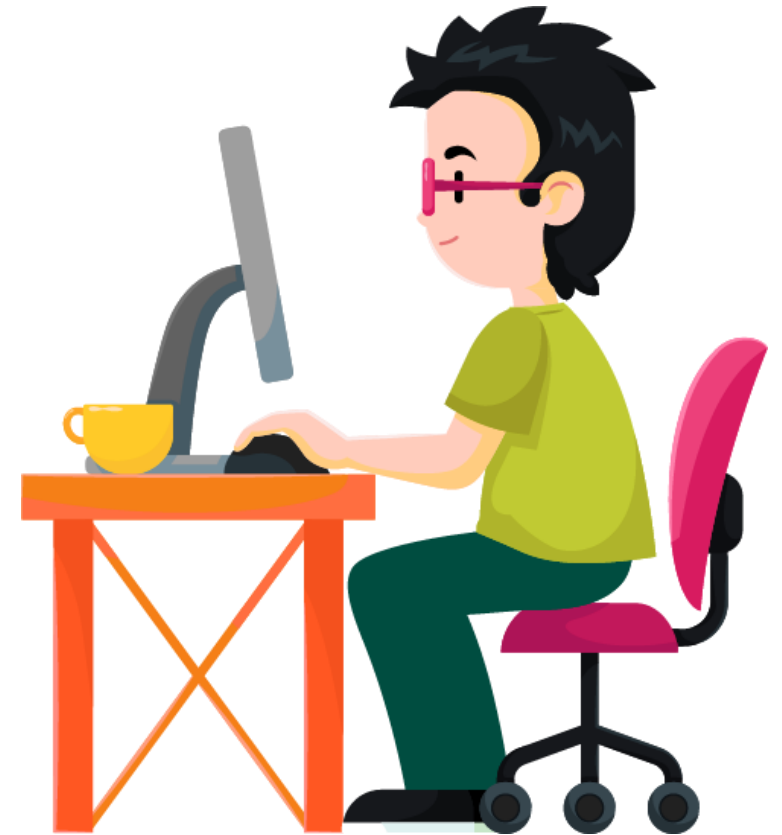


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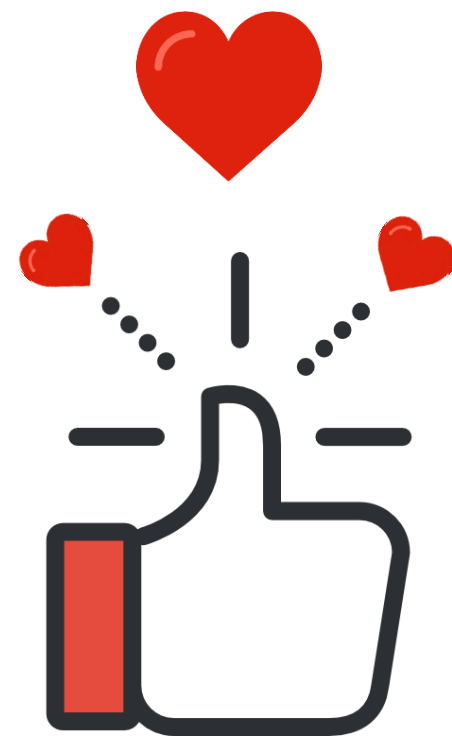
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