**MongoDB notes  
  
Comparison & Logical Operators in MongoDB**

MongoDB provides **comparison** and **logical** operators for querying documents effectively.

**1. Comparison Operators**

| **Operator** | **Description** | **Example** |
| --- | --- | --- |
| $eq | Matches values equal to a specified value. | { age: { $eq: 25 } } |
| $ne | Matches values **not** equal to a specified value. | { age: { $ne: 25 } } |
| $gt | Matches values **greater than** a specified value. | { age: { $gt: 25 } } |
| $gte | Matches values **greater than or equal to** a specified value. | { age: { $gte: 25 } } |
| $lt | Matches values **less than** a specified value. | { age: { $lt: 25 } } |
| $lte | Matches values **less than or equal to** a specified value. | { age: { $lte: 25 } } |
| $in | Matches any value in the specified array. | { city: { $in: ["New York", "London"] } } |
| $nin | Matches values **not in** the specified array. | { city: { $nin: ["New York", "London"] } } |

**Examples**

**Find users whose age is greater than 25:**

db.users.find({ age: { $gt: 25 } })

**Find users who live in New York or London:**

db.users.find({ city: { $in: ["New York", "London"] } })

**2. Logical Operators**

| **Operator** | **Description** | **Example** |
| --- | --- | --- |
| $and | Matches documents where **all** conditions are true. | { $and: [{ age: { $gt: 25 } }, { city: "New York" }] } |
| $or | Matches documents where **at least one** condition is true. | { $or: [{ age: { $gt: 25 } }, { city: "London" }] } |
| $not | Inverts the result of a query condition. | { age: { $not: { $gt: 25 } } } |
| $nor | Matches documents where **none** of the conditions are true. | { $nor: [{ age: { $gt: 25 } }, { city: "New York" }] } |

**Examples**

**Find users whose age is greater than 25 AND live in New York:**

db.users.find({ $and: [{ age: { $gt: 25 } }, { city: "New York" }] })

**Find users whose age is greater than 25 OR live in London:**

db.users.find({ $or: [{ age: { $gt: 25 } }, { city: "London" }] })

**Find users who are NOT older than 25:**

db.users.find({ age: { $not: { $gt: 25 } } })