# ■ MongoDB Operators Cheat Sheet

| Category | Operator | Example | Meaning |
|---|---|---|---|
| Comparison | $eq | { price: { $eq: 1000 } } | Equal to 1000 |
| | $ne | { price: { $ne: 1000 } } | Not equal to 1000 |
| | $gt | { price: { $gt: 1000 } } | Greater than 1000 |
| | $gte | { price: { $gte: 1000 } } | Greater or equal to 1000 |
| | $lt | { price: { $lt: 1000 } } | Less than 1000 |
| | $lte | { price: { $lte: 1000 } } | Less or equal to 1000 |
| | $in | { name: { $in: ["Java","Python"] } } | In list |
| | $nin | { name: { $nin: ["Java","Python"] } } | Not in list |
| Logical | $and | { $and: [ {price: {$gt:1000}}, {price: {$lt:5000}} ] } | Both must match |
| | $or | { $or: [ {name:"Java"}, {name:"Python"} ] } | Either condition |
| | $not | { price: { $not: { $gt:2000 } } } | Negation |
| | $nor | { $nor: [ {name:"Java"}, {price:2000} ] } | None match |
| Element | $exists | { discount: { $exists: true } } | Field exists |
| | $type | { price: { $type: "int" } } | Field is int |
| Evaluation | $regex | { name: { $regex: /^J/ } } | Starts with J |
| | $expr | { $expr: { $gt: ["$projects","$assignments"] } } | Compare fields |
| Array | $all | { tags: { $all: ["node","backend"] } } | Contains all values |
| | $size | { tags: { $size: 3 } } | Array has 3 elements |
| | $elemMatch | { scores: { $elemMatch: { $gt:80, $lt:90 } } } | Array element matches |
| Update | $set | { $set: { price:2000 } } | Set new value |
| | $unset | { $unset: { discount:"" } } | Remove field |
| | $inc | { $inc: { price:500 } } | Increment field |
| | $mul | { $mul: { price:2 } } | Multiply field |
| | $rename | { $rename: { name:"courseName" } } | Rename field |
| | $push | { $push: { tags:"newTag" } } | Add to array |
| | $addToSet | { $addToSet: { tags:"uniqueTag" } } | Add if not exists |
| | $pull | { $pull: { tags:"oldTag" } } | Remove item |
| | $pop | { $pop: { tags:1 } } | Remove last item |
| | $currentDate | { $currentDate: { lastUpdated:true } } | Set current date |
| Aggregation | $sum | { $group: { _id:"$instructor", total: { $sum:"$price"} } } | Sum values |
| | $avg | { $group: { _id:"$instructor", avg: { $avg:"$price"} } } | Average values |

| Category | Operator | Example | Meaning |
|---|---|---|---|
| | $min/$max | { $group: { _id:"$course", min: { $min:"$price"} } } | Min/Max value |
| | $count | { $count:"total" } | Count documents |
| | $sort | { $sort: { price:-1 } } | Sort documents |