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Query and Projection Operators

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NOTE

For details on a specific operator, including syntax and examples, click on the link to the operator's reference page.

Compatibility

You can use query and projection operators for deployments hosted in the following environments:

- MongoDB Atlas: The fully managed service for MongoDB deployments in the cloud
- MongoDB Enterprise: The subscription-based, self-managed version of MongoDB
- MongoDB Community: The source-available, free-to-use, and self-managed version of MongoDB

TIP

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Ask MongoDB AI

You can use operators when querying your data with `mongosh` methods, the Atlas UI, or Compass.

Query Selectors

Comparison

For comparison of different BSON type values, see the specified BSON comparison order.

Name	Description
`$eq`	Matches values that are equal to a specified value.
`$gt`	Matches values that are greater than a specified value.
`$gte`	Matches values that are greater than or equal to a specified value.
`$in`	Matches any of the values specified in an array.
`$lt`	Matches values that are less than a specified value.
`$lte`	Matches values that are less than or equal to a specified value.
`$ne`	Matches all values that are not equal to a specified value.
`$nin`	Matches none of the values specified in an array.

Logical

Name	Description
`$and`	Joins query clauses with a logical `AND` returns all documents that match the conditions of both clauses.
`$not`	Inverts the effect of a query expression and returns documents that do *not* match the query expression.
`$nor`	Joins query clauses with a logical `NOR` returns all documents that fail to match both clauses.
`$or`	Joins query clauses with a logical `OR` returns all documents that match the conditions of either clause.

Element

Name	Description
`$exists`	Matches documents that have the specified field.
`$type`	Selects documents if a field is of the specified type.

Evaluation

Name	Description
`$expr`	Allows use of aggregation expressions within the query language.

Name	Description
`$jsonSchema`	Validate documents against the given JSON Schema.
`$mod`	Performs a modulo operation on the value of a field and selects documents with a specified result.
`$regex`	Selects documents where values match a specified regular expression.
`$text`	Performs text search.
`$where`	Matches documents that satisfy a JavaScript expression.

Geospatial

Name	Description
`$geoIntersects`	Selects geometries that intersect with a GeoJSON geometry. The 2dsphere index supports `$geoIntersects`.
`$geoWithin`	Selects geometries within a bounding GeoJSON geometry. The 2dsphere and 2d indexes support `$geoWithin`.
`$near`	Returns geospatial objects in proximity to a point. Requires a geospatial index. The 2dsphere and 2d indexes support `$near`.
`$nearSphere`	Returns geospatial objects in proximity to a point on a sphere. Requires a geospatial index. The 2dsphere and 2d indexes support `$nearSphere`.

Array

Name	Description
`$all`	Matches arrays that contain all elements specified in the query.
`$elemMatch`	Selects documents if element in the array field matches all the specified `$elemMatch` conditions.
`$size`	Selects documents if the array field is a specified size.

Bitwise

Name	Description
`$bitsAllClear`	Matches numeric or binary values in which a set of bit positions *all* have a value of `0`.
`$bitsAllSet`	Matches numeric or binary values in which a set of bit positions *all* have a value of `1`.
`$bitsAnyClear`	Matches numeric or binary values in which *any* bit from a set of bit positions has a value of `0`.
`$bitsAnySet`	Matches numeric or binary values in which *any* bit from a set of bit positions has a value of `1`.

Projection Operators

Name	Description
`$`	Projects the first element in an array that matches the query condition.
`$elemMatch`	Projects the first element in an array that matches the specified `$elemMatch` condition.
`$meta`	Projects the document's score assigned during `$text` operation.
`$slice`	Limits the number of elements projected from an array. Supports skip and limit slices.

Miscellaneous Operators

Name	Description
`$comment`	Adds a comment to a query predicate.
`$rand`	Generates a random float between 0 and 1.

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