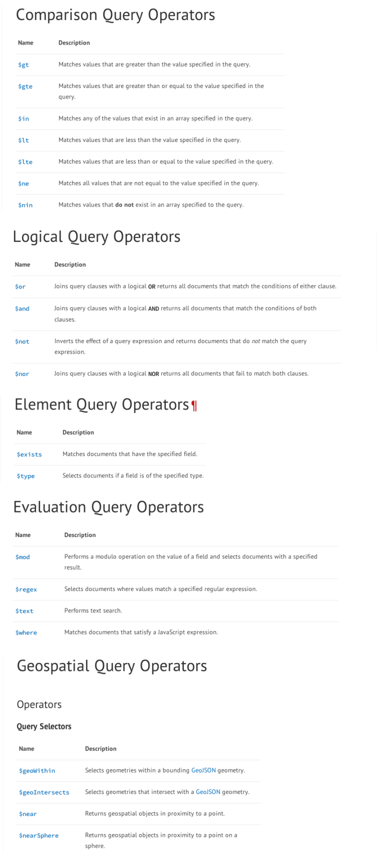


Comparison Query Operators

Name	Description
`$gt`	Matches values that are greater than the value specified in the query.
`$gte`	Matches values that are greater than or equal to the value specified in the query.
`$in`	Matches any of the values that exist in an array specified in the query.
`$lt`	Matches values that are less than the value specified in the query.
`$lte`	Matches values that are less than or equal to the value specified in the query.
`$ne`	Matches all values that are not equal to the value specified in the query.
`$nin`	Matches values that **do not** exist in an array specified to the query.

Logical Query Operators

Name	Description
`$or`	Joins query clauses with a logical **OR** returns all documents that match the conditions of either clause.
`$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.

Element Query Operators¶

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

Evaluation Query Operators

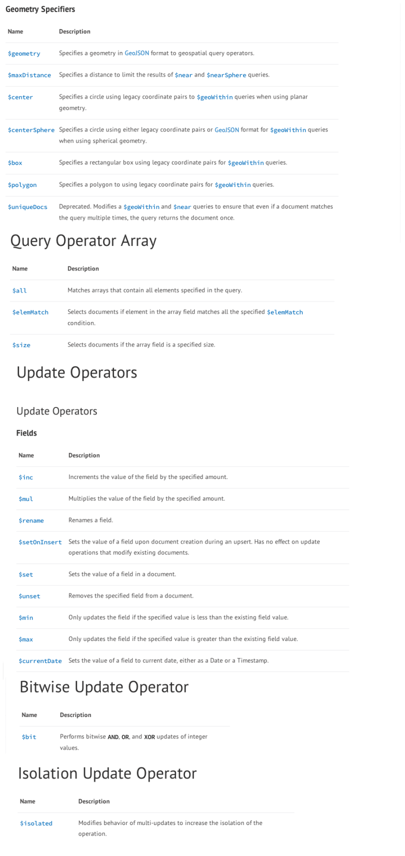
Name	Description
`$mod`	Performs a modulo operation on the value of a field and selects documents with a specified result.
`$regex`	Selects documents where values match a specified regular expression.
`$text`	Performs text search.
`$where`	Matches documents that satisfy a JavaScript expression.

Geospatial Query Operators

Operators

Query Selectors

Name	Description
`$geoWithin`	Selects geometries within a bounding GeoJSON geometry.
`$geoIntersects`	Selects geometries that intersect with a GeoJSON geometry.
`$near`	Returns geospatial objects in proximity to a point.
`$nearSphere`	Returns geospatial objects in proximity to a point on a sphere.



Geometry Specifiers

Name	Description
`$geometry`	Specifies a geometry in GeoJSON format to geospatial query operators.
`$maxDistance`	Specifies a distance to limit the results of `$near` and `$nearSphere` queries.
`$center`	Specifies a circle using legacy coordinate pairs to `$geoWithin` queries when using planar geometry.
`$centerSphere`	Specifies a circle using either legacy coordinate pairs or GeoJSON format for `$geoWithin` queries when using spherical geometry.
`$box`	Specifies a rectangular box using legacy coordinate pairs for `$geoWithin` queries.
`$polygon`	Specifies a polygon to using legacy coordinate pairs for `$geoWithin` queries.
`$uniqueDocs`	Deprecated. Modifies a `$geoWithin` and `$near` queries to ensure that even if a document matches the query multiple times, the query returns the document once.

Query Operator 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 `$elemMatch` condition.
`$size`	Selects documents if the array field is a specified size.

Update Operators

Update Operators

Fields

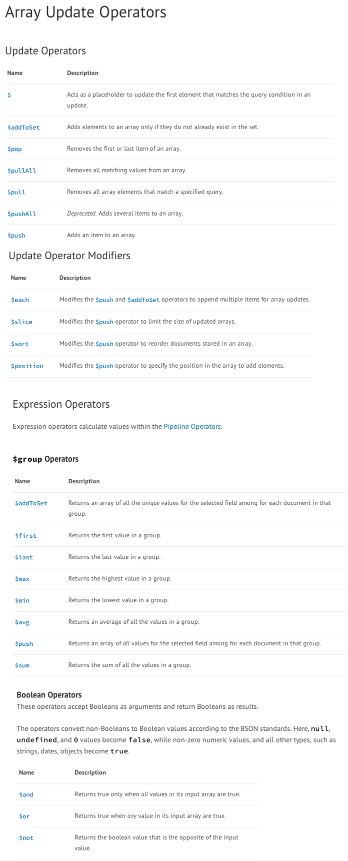
Name	Description
`$inc`	Increments the value of the field by the specified amount.
`$mul`	Multiplies the value of the field by the specified amount.
`$rename`	Renames a field.
`$setOnInsert`	Sets the value of a field upon document creation during an upsert. Has no effect on update operations that modify existing documents.
`$set`	Sets the value of a field in a document.
`$unset`	Removes the specified field from a document.
`$min`	Only updates the field if the specified value is less than the existing field value.
`$max`	Only updates the field if the specified value is greater than the existing field value.
`$currentDate`	Sets the value of a field to current date, either as a Date or a Timestamp.

Bitwise Update Operator

Name	Description
`$bit`	Performs bitwise **AND**, **OR**, and **XOR** updates of integer values.

Isolation Update Operator

Name	Description
`$isolated`	Modifies behavior of multi-updates to increase the isolation of the operation.



Array Update Operators

Update Operators

Name	Description
`$`	Acts as a placeholder to update the first element that matches the query condition in an update.
`$addToSet`	Adds elements to an array only if they do not already exist in the set.
`$pop`	Removes the first or last item of an array.
`$pullAll`	Removes all matching values from an array.
`$pull`	Removes all array elements that match a specified query.
`$pushAll`	*Deprecated.* Adds several items to an array.
`$push`	Adds an item to an array.

Update Operator Modifiers

Name	Description
`$each`	Modifies the `$push` and `$addToSet` operators to append multiple items for array updates.
`$slice`	Modifies the `$push` operator to limit the size of updated arrays.
`$sort`	Modifies the `$push` operator to reorder documents stored in an array.
`$position`	Modifies the `$push` operator to specify the position in the array to add elements.

Expression Operators

Expression operators calculate values within the Pipeline Operators.

`$group` Operators

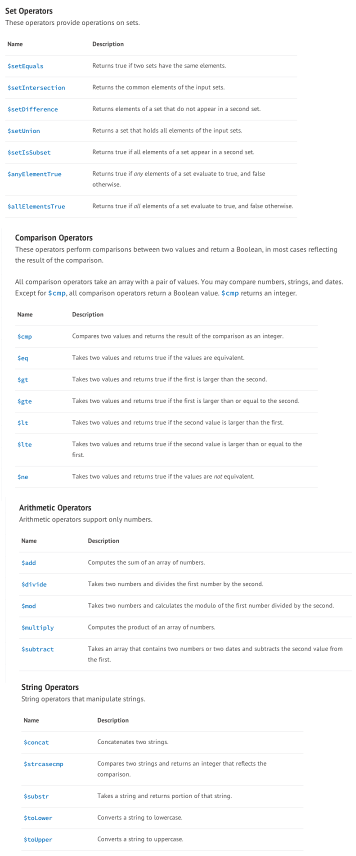
Name	Description
`$addToSet`	Returns an array of all the *unique* values for the selected field among for each document in that group.
`$first`	Returns the first value in a group.
`$last`	Returns the last value in a group.
`$max`	Returns the highest value in a group.
`$min`	Returns the lowest value in a group.
`$avg`	Returns an average of all the values in a group.
`$push`	Returns an array of *all* values for the selected field among for each document in that group.
`$sum`	Returns the sum of all the values in a group.

Boolean Operators

These operators accept Booleans as arguments and return Booleans as results.

The operators convert non-Booleans to Boolean values according to the BSON standards. Here, `null`, `undefined`, and `0` values become `false`, while non-zero numeric values, and all other types, such as strings, dates, objects become `true`.

Name	Description
`$and`	Returns true only when *all* values in its input array are true.
`$or`	Returns true when *any* value in its input array are true.
`$not`	Returns the boolean value that is the opposite of the input value.



Set Operators

These operators provide operations on sets.

Name	Description
`$setEquals`	Returns true if two sets have the same elements.
`$setIntersection`	Returns the common elements of the input sets.
`$setDifference`	Returns elements of a set that do not appear in a second set.
`$setUnion`	Returns a set that holds all elements of the input sets.
`$setIsSubset`	Returns true if all elements of a set appear in a second set.
`$anyElementTrue`	Returns true if *any* elements of a set evaluate to true, and false otherwise.
`$allElementsTrue`	Returns true if *all* elements of a set evaluate to true, and false otherwise.

Comparison Operators

These operators perform comparisons between two values and return a Boolean, in most cases reflecting the result of the comparison.

All comparison operators take an array with a pair of values. You may compare numbers, strings, and dates. Except for `$cmp`, all comparison operators return a Boolean value. `$cmp` returns an integer.

Name	Description
`$cmp`	Compares two values and returns the result of the comparison as an integer.
`$eq`	Takes two values and returns true if the values are equivalent.
`$gt`	Takes two values and returns true if the first is larger than the second.
`$gte`	Takes two values and returns true if the first is larger than or equal to the second.
`$lt`	Takes two values and returns true if the second value is larger than the first.
`$lte`	Takes two values and returns true if the second value is larger than or equal to the first.
`$ne`	Takes two values and returns true if the values are *not* equivalent.

Arithmetic Operators

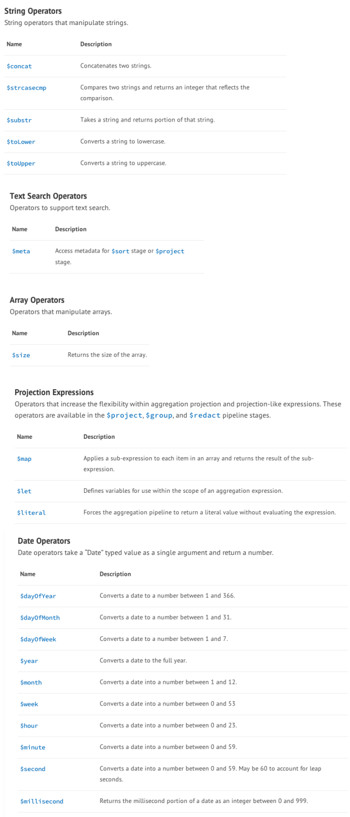
Arithmetic operators support only numbers.

Name	Description
`$add`	Computes the sum of an array of numbers.
`$divide`	Takes two numbers and divides the first number by the second.
`$mod`	Takes two numbers and calculates the modulo of the first number divided by the second.
`$multiply`	Computes the product of an array of numbers.
`$subtract`	Takes an array that contains two numbers or two dates and subtracts the second value from the first.

String Operators

String operators that manipulate strings.

Name	Description
`$concat`	Concatenates two strings.
`$strcasecmp`	Compares two strings and returns an integer that reflects the comparison.
`$substr`	Takes a string and returns portion of that string.
`$toLower`	Converts a string to lowercase.
`$toUpper`	Converts a string to uppercase.



String Operators

String operators that manipulate strings.

Name	Description
`$concat`	Concatenates two strings.
`$strcasecmp`	Compares two strings and returns an integer that reflects the comparison.
`$substr`	Takes a string and returns portion of that string.
`$toLower`	Converts a string to lowercase.
`$toUpper`	Converts a string to uppercase.

Text Search Operators

Operators to support text search.

Name	Description
`$meta`	Access metadata for `$sort` stage or `$project` stage.

Array Operators

Operators that manipulate arrays.

Name	Description
`$size`	Returns the size of the array.

Projection Expressions

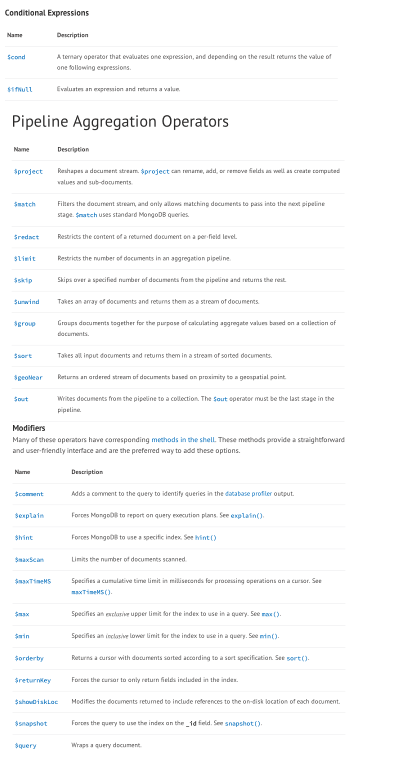
Operators that increase the flexibility within aggregation projection and projection-like expressions. These operators are available in the `$project`, `$group`, and `$redact` pipeline stages.

Name	Description
`$map`	Applies a sub-expression to each item in an array and returns the result of the sub-expression.
`$let`	Defines variables for use within the scope of an aggregation expression.
`$literal`	Forces the aggregation pipeline to return a literal value without evaluating the expression.

Date Operators

Date operators take a "Date" typed value as a single argument and return a number.

Name	Description
`$dayOfYear`	Converts a date to a number between 1 and 366.
`$dayOfMonth`	Converts a date to a number between 1 and 31.
`$dayOfWeek`	Converts a date to a number between 1 and 7.
`$year`	Converts a date to the full year.
`$month`	Converts a date into a number between 1 and 12.
`$week`	Converts a date into a number between 0 and 53
`$hour`	Converts a date into a number between 0 and 23.
`$minute`	Converts a date into a number between 0 and 59.
`$second`	Converts a date into a number between 0 and 59. May be 60 to account for leap seconds.
`$millisecond`	Returns the millisecond portion of a date as an integer between 0 and 999.



Conditional Expressions

Name	Description
`$cond`	A ternary operator that evaluates one expression, and depending on the result returns the value of one following expressions.
`$ifNull`	Evaluates an expression and returns a value.

Pipeline Aggregation Operators

Name	Description
`$project`	Reshapes a document stream. `$project` can rename, add, or remove fields as well as create computed values and sub-documents.
`$match`	Filters the document stream, and only allows matching documents to pass into the next pipeline stage. `$match` uses standard MongoDB queries.
`$redact`	Restricts the content of a returned document on a per-field level.
`$limit`	Restricts the number of documents in an aggregation pipeline.
`$skip`	Skips over a specified number of documents from the pipeline and returns the rest.
`$unwind`	Takes an array of documents and returns them as a stream of documents.
`$group`	Groups documents together for the purpose of calculating aggregate values based on a collection of documents.
`$sort`	Takes all input documents and returns them in a stream of sorted documents.
`$geoNear`	Returns an ordered stream of documents based on proximity to a geospatial point.
`$out`	Writes documents from the pipeline to a collection. The `$out` operator must be the last stage in the pipeline.

Modifiers

Many of these operators have corresponding methods in the shell. These methods provide a straightforward and user-friendly interface and are the preferred way to add these options.

Name	Description
`$comment`	Adds a comment to the query to identify queries in the database profiler output.
`$explain`	Forces MongoDB to report on query execution plans. See `explain()`.
`$hint`	Forces MongoDB to use a specific index. See `hint()`
`$maxScan`	Limits the number of documents scanned.
`$maxTimeMS`	Specifies a cumulative time limit in milliseconds for processing operations on a cursor. See `maxTimeMS()`.
`$max`	Specifies an *exclusive* upper limit for the index to use in a query. See `max()`.
`$min`	Specifies an *inclusive* lower limit for the index to use in a query. See `min()`.
`$orderby`	Returns a cursor with documents sorted according to a sort specification. See `sort()`.
`$returnKey`	Forces the cursor to only return fields included in the index.
`$showDiskLoc`	Modifies the documents returned to include references to the on-disk location of each document.
`$snapshot`	Forces the query to use the index on the `_id` field. See `snapshot()`.
`$query`	Wraps a query document.