

MONGODB

AGGREGATIONS

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- ▶ Consist of various stages that process the input documents
- ▶ Ordering of stages is important
- ▶ MongoDB can automatically re-order stages for efficiency
- ▶ Some stages can only be used in specific positions in the pipeline

MATCH

- ▶ Performs a filter on the documents
- ▶ Equivalent to the search syntax in find operations
- ▶ Should be placed as early in the pipeline as possible
- ▶ Can make use of indexes when placed at the start of the pipeline

PROJECT

- ▶ Add or remove fields from a document
- ▶ Move the position of fields
- ▶ Cannot combine removal and addition (except for `_id`)
- ▶ Must specify all fields

ADDFIELDS

- ▶ Adds new fields to document
- ▶ Preserves all existing fields
- ▶ Better than project when most of the existing document will be preserved
- ▶ Can overwrite existing fields
- ▶ Use concatArrays to modify array

SET

- ▶ Synonym for addFields to make it consistent with query operations

UNSET

- ▶ Remove fields
- ▶ Equivalent to project
- ▶ Use dot notation to remove embedded fields

UNWIND

- ▶ Outputs a document for each element in an array
- ▶ Unwound objects remain in their enclosing object
 - ▶ This can be tidied using \$set

REPLACEWITH

- ▶ Replaces the document with the supplied document
- ▶ Even the `_id` field will be replaced
- ▶ Can be used to promote a sub-document to the root
- ▶ Often used in combination with `$mergeObjects`

REPLACEROOT

- ▶ Synonymous with `replaceWith`
- ▶ More verbose syntax
- ▶ Prefer `replaceWith`

GROUP

- ▶ Equivalent to GROUP BY in SQL
- ▶ Allows accumulator expressions (\$sum, \$avg, \$count etc)
- ▶ `_id` defines the field to group on
- ▶ Specify `_id` null to allow accumulators to run on the entire collection
- ▶ `allowDiskUse` allow the aggregation to use temporary files
 - ▶ Ensure the pipeline is optimised before allowing disk use

LOOKUP

- ▶ Equivalent to a left outer join in SQL
- ▶ Can retrieve from collections within the same database
- ▶ Can run a pipeline against the foreign collection to limit the results

BUCKET

- ▶ Similar to group but allows grouping by range
- ▶ Non-matching documents can be collected into a default group

OUT

- ▶ Writes the input documents to the specified collection
- ▶ Must be the last stage in the pipeline
- ▶ Replaces any existing collection completely

MERGE

- ▶ Writes the input documents to the specified collection
- ▶ Must be the last stage in the pipeline
- ▶ on field determines how to match on existing documents
- ▶ Requires a unique index on the match fields

MONGODB

DEMONSTRATION

MONGODB

PRACTICAL

OBSERVATIONS