

MONGODB

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INDEXES

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- ▶ All other indexes should be created manually
- ▶ Indexing should be performed at the same time as building queries
- ▶ Not all queries are suitable for indexing
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- ▶ Uniqueness is optional for an index

## CREATING AN INDEX

▶ `db.collection.createIndex(keys, options, commitQuorum)`

## COMPOUND INDEXES

- ▶ Indexes can be created against multiple fields
- ▶ Prefix matching allows matching against the start of a compound index
- ▶ The ordering is important in a compound index when sorting
- ▶ Ensure it matches with your query

# DEMONSTRATION

## COVERED QUERY

- ▶ If all the fields requested in the query are maintained in the index, there is no document lookup
- ▶ `.explain("executionStats")`
  - ▶ `"totalDocsExamined": 0`
  - ▶ `"stage": "IXSCAN"`
  - ▶ No fetch

# PRACTICAL

- ▶ Working in groups
  - ▶ Generate a collection of receipts using random data
  - ▶ Discuss and decide on some typical queries that you may wish to run against receipts
  - ▶ Build some realistic queries based on document contents
  - ▶ Try to use as many operators as you can
  - ▶ If necessary, modify the document structure to include fields that allow you to test the various operators
  - ▶ Create appropriate indexes and use `explain()` to determine if you're index is being used



# OBSERVATIONS

- ▶ MongoDB provides indexing to allow fast retrieval of data
- ▶ Covered queries remove the need to retrieve the document when all fields are contained in the index
- ▶ Indexing should be considered with each new query
- ▶ It's sometimes necessary to structure your documents to work well with querying