**SQL to MongoDB Mapping Chart**

In addition to the charts that follow, you might want to consider the [*Frequently Asked Questions*](http://docs.mongodb.org/manual/faq/) section for a selection of common questions about MongoDB.

**Executables**

The following table presents the MySQL/Oracle executables and the corresponding MongoDB executables.

|  | **MySQL/Oracle** | **MongoDB** |
| --- | --- | --- |
| Database Server | mysqld/oracle | [*mongod*](http://docs.mongodb.org/manual/reference/mongod/) |
| Database Client | mysql/sqlplus | [*mongo*](http://docs.mongodb.org/manual/reference/mongo/) |

**Terminology and Concepts**

The following table presents the various SQL terminology and concepts and the corresponding MongoDB terminology and concepts.

| **SQL Terms/Concepts** | **MongoDB Terms/Concepts** |
| --- | --- |
| database | [*database*](http://docs.mongodb.org/manual/reference/glossary/#term-database) |
| table | [*collection*](http://docs.mongodb.org/manual/reference/glossary/#term-collection) |
| row | [*document*](http://docs.mongodb.org/manual/reference/glossary/#term-document) or [*BSON*](http://docs.mongodb.org/manual/reference/glossary/#term-bson) document |
| column | [*field*](http://docs.mongodb.org/manual/reference/glossary/#term-field) |
| index | [*index*](http://docs.mongodb.org/manual/reference/glossary/#term-index) |
| table joins | embedded documents and linking |
| primary key  Specify any unique column or column combination as primary key. | [*primary key*](http://docs.mongodb.org/manual/reference/glossary/#term-primary-key)  In MongoDB, the primary key is automatically set to the [*\_id*](http://docs.mongodb.org/manual/reference/glossary/#term-id)field. |
| aggregation (e.g. group by) | aggregation framework  See the [*SQL to Aggregation Framework Mapping Chart*](http://docs.mongodb.org/manual/reference/sql-aggregation-comparison/). |

**Examples**

The following table presents the various SQL statements and the corresponding MongoDB statements. The examples in the table assume the following conditions:

* The SQL examples assume a table named users.
* The MongoDB examples assume a collection named users that contain documents of the following prototype:
* {
* \_id: ObjectID("509a8fb2f3f4948bd2f983a0"),
* user\_id: "abc123",
* age: 55,
* status: 'A'
* }

**Create and Alter**

The following table presents the various SQL statements related to table-level actions and the corresponding MongoDB statements.

| **SQL Schema Statements** | **MongoDB Schema Statements** | **Reference** |
| --- | --- | --- |
| **CREATE** **TABLE** users (  id MEDIUMINT **NOT** **NULL**  AUTO\_INCREMENT,  user\_id Varchar(30),  age Number,  status char(1),  **PRIMARY** **KEY** (id)  ) | Implicitly created on first [**insert**](http://docs.mongodb.org/manual/reference/javascript/#db.collection.insert) operation. The primary key \_id is automatically added if \_id field is not specified.  **db**.**users**.**insert**( {  **user\_id**: "abc123",  **age**: 55,  **status**: "A"  } )  However, you can also explicitly create a collection:  **db**.**createCollection**("users") | See [**insert()**](http://docs.mongodb.org/manual/reference/javascript/#db.collection.insert) and **[createCollection()](http://docs.mongodb.org/manual/reference/javascript/" \l "db.createCollection" \o "db.createCollection)** for more information. |
| **ALTER** **TABLE** users  **ADD** join\_date DATETIME | Collections do not describe or enforce the structure of the constituent documents. See the [Schema Design](http://www.mongodb.org/display/DOCS/Schema+Design) wiki page for more information. | See [**update()**](http://docs.mongodb.org/manual/reference/javascript/#db.collection.update) and [**$set**](http://docs.mongodb.org/manual/reference/operators/#_S_set) for more information on changing the structure of documents in a collection. |
| **ALTER** **TABLE** users  **DROP** **COLUMN** join\_date | Collections do not describe or enforce the structure of the constituent documents. See the [Schema Design](http://www.mongodb.org/display/DOCS/Schema+Design) wiki page for more information. | See [**update()**](http://docs.mongodb.org/manual/reference/javascript/#db.collection.update) and [**$set**](http://docs.mongodb.org/manual/reference/operators/#_S_set) for more information on changing the structure of documents in a collection. |
| **CREATE** **INDEX** idx\_user\_id\_asc  **ON** users(user\_id) | **db**.**users**.**ensureIndex**( { **user\_id**: 1 } ) | See **[ensureIndex()](http://docs.mongodb.org/manual/reference/javascript/" \l "db.collection.ensureIndex" \o "db.collection.ensureIndex)** and [*indexes*](http://docs.mongodb.org/manual/core/indexes/) for more information. |
| **CREATE** **INDEX**  idx\_user\_id\_asc\_age\_desc  **ON** users(user\_id, age **DESC**) | **db**.**users**.**ensureIndex**( { **user\_id**: 1, **age**: -1 } ) | See **[ensureIndex()](http://docs.mongodb.org/manual/reference/javascript/" \l "db.collection.ensureIndex" \o "db.collection.ensureIndex)** and [*indexes*](http://docs.mongodb.org/manual/core/indexes/) for more information. |
| **DROP** **TABLE** users | **db**.**users**.**drop**() | See [**drop()**](http://docs.mongodb.org/manual/reference/javascript/#db.collection.drop) for more information. |

**Insert**

The following table presents the various SQL statements related to inserting records into tables and the corresponding MongoDB statements.

| **SQL INSERT Statements** | **MongoDB insert() Statements** | **Reference** |
| --- | --- | --- |
| **INSERT** **INTO** users(user\_id,  age,  status)  **VALUES** ("bcd001",  45,  "A") | **db**.**users**.**insert**( {  **user\_id**: "bcd001",  **age**: 45,  **status**: "A"  } ) | See [**insert()**](http://docs.mongodb.org/manual/reference/javascript/#db.collection.insert) for more information. |

**Select**

The following table presents the various SQL statements related to reading records from tables and the corresponding MongoDB statements.

| **SQL SELECT Statements** | **MongoDB find() Statements** | **Reference** |
| --- | --- | --- |
| **SELECT** \*  **FROM** users | **db**.**users**.**find**() | See [**find()**](http://docs.mongodb.org/manual/reference/javascript/#db.collection.find) for more information. |
| **SELECT** id, user\_id, status  **FROM** users | **db**.**users**.**find**(  { },  { **user\_id**: 1, **status**: 1 }  ) | See [**find()**](http://docs.mongodb.org/manual/reference/javascript/#db.collection.find) for more information. |
| **SELECT** user\_id, status  **FROM** users | **db**.**users**.**find**(  { },  { **user\_id**: 1, **status**: 1, **\_id**: 0 }  ) | See [**find()**](http://docs.mongodb.org/manual/reference/javascript/#db.collection.find) for more information. |
| **SELECT** \*  **FROM** users  **WHERE** status = "A" | **db**.**users**.**find**(  { **status**: "A" }  ) | See [**find()**](http://docs.mongodb.org/manual/reference/javascript/#db.collection.find) for more information. |
| **SELECT** user\_id, status  **FROM** users  **WHERE** status = "A" | **db**.**users**.**find**(  { **status**: "A" },  { **user\_id**: 1, **status**: 1, **\_id**: 0 }  ) | See [**find()**](http://docs.mongodb.org/manual/reference/javascript/#db.collection.find) for more information. |
| **SELECT** \*  **FROM** users  **WHERE** status != "A" | **db**.**users**.**find**(  { **status**: { **$ne**: "A" } }  ) | See [**find()**](http://docs.mongodb.org/manual/reference/javascript/#db.collection.find) and [**$ne**](http://docs.mongodb.org/manual/reference/operators/#_S_ne) for more information. |
| **SELECT** \*  **FROM** users  **WHERE** status = "A"  **AND** age = 50 | **db**.**users**.**find**(  { **status**: "A",  **age**: 50 }  ) | See [**find()**](http://docs.mongodb.org/manual/reference/javascript/#db.collection.find) and [**$and**](http://docs.mongodb.org/manual/reference/operators/#_S_and) for more information. |
| **SELECT** \*  **FROM** users  **WHERE** status = "A"  **OR** age = 50 | **db**.**users**.**find**(  { **$or**: [ { **status**: "A" } ,  { **age**: 50 } ] }  ) | See [**find()**](http://docs.mongodb.org/manual/reference/javascript/#db.collection.find) and [**$or**](http://docs.mongodb.org/manual/reference/operators/#_S_or) for more information. |
| **SELECT** \*  **FROM** users  **WHERE** age > 25 | **db**.**users**.**find**(  { **age**: { **$gt**: 25 } }  ) | See [**find()**](http://docs.mongodb.org/manual/reference/javascript/#db.collection.find) and [**$gt**](http://docs.mongodb.org/manual/reference/operators/#_S_gt) for more information. |
| **SELECT** \*  **FROM** users  **WHERE** age < 25 | **db**.**users**.**find**(  { **age**: { **$lt**: 25 } }  ) | See [**find()**](http://docs.mongodb.org/manual/reference/javascript/#db.collection.find) and [**$lt**](http://docs.mongodb.org/manual/reference/operators/#_S_lt) for more information. |
| **SELECT** \*  **FROM** users  **WHERE** age > 25  **AND** age <= 50 | **db**.**users**.**find**(  { **age**: { **$gt**: 25, **$lte**: 50 } }  ) | See [**find()**](http://docs.mongodb.org/manual/reference/javascript/#db.collection.find), [**$gt**](http://docs.mongodb.org/manual/reference/operators/#_S_gt), and [**$lte**](http://docs.mongodb.org/manual/reference/operators/#_S_lte) for more information. |
| **SELECT** \*  **FROM** users  **WHERE** user\_id **like** "%bc%" | **db**.**users**.**find**(  { **user\_id**: /bc/ }  ) | See [**find()**](http://docs.mongodb.org/manual/reference/javascript/#db.collection.find) and [**$regex**](http://docs.mongodb.org/manual/reference/operators/#_S_regex) for more information. |
| **SELECT** \*  **FROM** users  **WHERE** user\_id **like** "bc%" | **db**.**users**.**find**(  { **user\_id**: /^bc/ }  ) | See [**find()**](http://docs.mongodb.org/manual/reference/javascript/#db.collection.find) and [**$regex**](http://docs.mongodb.org/manual/reference/operators/#_S_regex) for more information. |
| **SELECT** \*  **FROM** users  **WHERE** status = "A"  **ORDER** **BY** user\_id **ASC** | **db**.**users**.**find**( { **status**: "A" } ).**sort**( { **user\_id**: 1 } ) | See [**find()**](http://docs.mongodb.org/manual/reference/javascript/#db.collection.find) and [**sort()**](http://docs.mongodb.org/manual/reference/javascript/#cursor.sort) for more information. |
| **SELECT** \*  **FROM** users  **WHERE** status = "A"  **ORDER** **BY** user\_id **DESC** | **db**.**users**.**find**( { **status**: "A" } ).**sort**( { **user\_id**: -1 } ) | See [**find()**](http://docs.mongodb.org/manual/reference/javascript/#db.collection.find) and [**sort()**](http://docs.mongodb.org/manual/reference/javascript/#cursor.sort) for more information. |
| **SELECT** **COUNT**(\*)  **FROM** users | **db**.**users**.**count**()  *or*  **db**.**users**.**find**().**count**() | See [**find()**](http://docs.mongodb.org/manual/reference/javascript/#db.collection.find) and [**count()**](http://docs.mongodb.org/manual/reference/method/cursor.count/#cursor.count) for more information. |
| **SELECT** **COUNT**(user\_id)  **FROM** users | **db**.**users**.**count**( { **user\_id**: { **$exists**: **true** } } )  *or*  **db**.**users**.**find**( { **user\_id**: { **$exists**: **true** } } ).**count**() | See [**find()**](http://docs.mongodb.org/manual/reference/javascript/#db.collection.find), [**count()**](http://docs.mongodb.org/manual/reference/method/cursor.count/#cursor.count), and [**$exists**](http://docs.mongodb.org/manual/reference/operators/#_S_exists) for more information. |
| **SELECT** **COUNT**(\*)  **FROM** users  **WHERE** age > 30 | **db**.**users**.**count**( { **age**: { **$gt**: 30 } } )  *or*  **db**.**users**.**find**( { **age**: { **$gt**: 30 } } ).**count**() | See [**find()**](http://docs.mongodb.org/manual/reference/javascript/#db.collection.find), [**count()**](http://docs.mongodb.org/manual/reference/method/cursor.count/#cursor.count), and [**$gt**](http://docs.mongodb.org/manual/reference/operators/#_S_gt) for more information. |
| **SELECT** **DISTINCT**(status)  **FROM** users | **db**.**users**.**distinct**( "status" ) | See [**find()**](http://docs.mongodb.org/manual/reference/javascript/#db.collection.find) and [**distinct()**](http://docs.mongodb.org/manual/reference/method/db.collection.distinct/#db.collection.distinct) for more information. |
| **SELECT** \*  **FROM** users  **LIMIT** 1 | **db**.**users**.**findOne**()  *or*  **db**.**users**.**find**().**limit**(1) | See [**find()**](http://docs.mongodb.org/manual/reference/javascript/#db.collection.find), **[findOne()](http://docs.mongodb.org/manual/reference/javascript/" \l "db.collection.findOne" \o "db.collection.findOne)**, and [**limit()**](http://docs.mongodb.org/manual/reference/javascript/#cursor.limit) for more information. |
| **SELECT** \*  **FROM** users  **LIMIT** 5  SKIP 10 | **db**.**users**.**find**().**limit**(5).**skip**(10) | See [**find()**](http://docs.mongodb.org/manual/reference/javascript/#db.collection.find), [**limit()**](http://docs.mongodb.org/manual/reference/javascript/#cursor.limit), and [**skip()**](http://docs.mongodb.org/manual/reference/javascript/#cursor.skip) for more information. |
| **EXPLAIN** **SELECT** \*  **FROM** users  **WHERE** status = "A" | **db**.**users**.**find**( { **status**: "A" } ).**explain**() | See [**find()**](http://docs.mongodb.org/manual/reference/javascript/#db.collection.find) and [**explain()**](http://docs.mongodb.org/manual/reference/javascript/#cursor.explain) for more information. |

**Update Records**

The following table presents the various SQL statements related to updating existing records in tables and the corresponding MongoDB statements.

| **SQL Update Statements** | **MongoDB update() Statements** | **Reference** |
| --- | --- | --- |
| **UPDATE** users  **SET** status = "C"  **WHERE** age > 25 | **db**.**users**.**update**(  { **age**: { **$gt**: 25 } },  { **$set**: { **status**: "C" } },  { **multi**: **true** }  ) | See [**update()**](http://docs.mongodb.org/manual/reference/javascript/#db.collection.update), [**$gt**](http://docs.mongodb.org/manual/reference/operators/#_S_gt), and [**$set**](http://docs.mongodb.org/manual/reference/operators/#_S_set) for more information. |
| **UPDATE** users  **SET** age = age + 3  **WHERE** status = "A" | **db**.**users**.**update**(  { **status**: "A" } ,  { **$inc**: { **age**: 3 } },  { **multi**: **true** }  ) | See [**update()**](http://docs.mongodb.org/manual/reference/javascript/#db.collection.update), [**$inc**](http://docs.mongodb.org/manual/reference/operators/#_S_inc), and [**$set**](http://docs.mongodb.org/manual/reference/operators/#_S_set) for more information. |

**Delete Records**

The following table presents the various SQL statements related to deleting records from tables and the corresponding MongoDB statements.

| **SQL Delete Statements** | **MongoDB remove() Statements** | **Reference** |
| --- | --- | --- |
| **DELETE** **FROM** users  **WHERE** status = "D" | **db**.**users**.**remove**( { **status**: "D" } ) | See [**remove()**](http://docs.mongodb.org/manual/reference/javascript/#db.collection.remove) for more information. |
| **DELETE** **FROM** users | **db**.**users**.**remove**( ) | See [**remove()**](http://docs.mongodb.org/manual/reference/javascript/#db.collection.remove) for more information. |