

MongoDB	MDB1
MongoDB Exercises	Due: 8th August 2023
<p>Develop skills in setting up mongoDB databases, collections and documents.</p> <p>Perform CRUD operations on mongoDB collections.</p>	
Evidence: Annotated Screenshots	

Create a Database in mongoDB

1. Create a new mongoDB Database called **Websites**
2. Create a collection called **Clients**
3. Add the following records

Surname	Forename	Address	Postcode	Email
Illingworth	Chris	52 Acoma Street	WA14 5DD	Illingworthc@mymail.com
Reynolds	Martin	Mill House	BG15 4RT	MartinR@mymail.com
Hand	Jenny	37 Beggars Lane	YO1 5TY	Jen@blueskythinking.com
Sparrow	Ivana	72 Cambridge Street	OL7 0EQ	IvanTheTerrible@bigwig.com
Akhtar	Noor	91 Blaire Road	HH7 9WS	NoorFTW@newmail.com
Lau	Emma	67 Crumshaw Road	M17 9PR	EmzyEll@netmail.com

Here is the input, entered in shell using the “insertMany” command, and the result in shown Compass.

```
Library> use Websites
switched to db Websites
Websites> db.Clients.insertMany([{$Surname: "Illingworth", Forname: "Chris", Address: "52 Acoma Street", Postcode: "WA14 5DD", Email: "Illingworthc@mymail.com"},
{$Surname: "Reynolds", Forname: "Martin", Address: "Mill House", Postcode: "BG15 4RT", Email: "MartinR@mymail.com"},{$Surname: "Hand", Forname: "Jenny",
Address: "37 Beggars Lane", Postcode: "YO1 5TY", Email: "Jen@blueskythinking.com"},{$Surname: "Sparrow", Forname: "Ivana", Address: "72 Cambridge Street", Postcode: "OL7 0EQ", Email: "IvanTheTerrible@bigwig.com"},{$Surname: "Akhtar", Forname: "Noor", Address: "91 Blaire Road", Postcode: "HH7 9WS", Email: "NoorFTW@newmail.com"},{$Surname: "Lau", Forname: "Emma", Address: "67 Crumshaw Road", Postcode: "M17 9PR", Email: "EmzyEll@netmail.com"}])
{
  acknowledged: true,
  insertedIds: {
    '0': ObjectId("64cbaf593297d4b544cc2085"),
    '1': ObjectId("64cbaf593297d4b544cc2086"),
    '2': ObjectId("64cbaf593297d4b544cc2087"),
    '3': ObjectId("64cbaf593297d4b544cc2088"),
    '4': ObjectId("64cbaf593297d4b544cc2089"),
    '5': ObjectId("64cbaf593297d4b544cc208a")
  }
}
```

Websites.Clients

6 DOCUMENTS 1 INDEXES

Documents Aggregations Schema Indexes Validation

Filter Type a query: { field: 'value' } Explain Reset Find Options

ADD DATA EXPORT DATA 1 - 6 of 6

	Surname String	Forname String	Address String	Postcode String	Email String	
1	"Illingworth"	"Chris"	"52 Acoma Street"	"WA14 5DD"	"Illingworthc@mymail.com"	
2	"Reynolds"	"Martin"	"Mill House"	"BG15 4RT"	"MartinR@mymail.com"	
3	"Hand"	"Jenny"	"37 Beggars Lane"	"YO1 5TY"	"Jen@blueskythinking.com"	
4	"Sparrow"	"Ivana"	"72 Cambridge Street"	"OL7 0EQ"	"IvanTheTerrible@bigwig.com"	
5	"Akhtar"	"Noor"	"91 Blaire Road"	"HH7 9WS"	"NoorFTW@newmail.com"	
6	"Lau"	"Emma"	"67 Crumshaw Road"	"M17 9PR"	"EmzyEll@netmail.com"	

CRUD operations:

4. Add the following records **one at a time** (*db.Clients.insertOne*)

Meadows	Fiona	14 Tay Street	NM11 6DS	FiMeadow@mymail.com
Ali	Safdar	182 Valley Parade	BR7 8GH	SafdarAli@boringmail.com

5. Add the following records using *insertMany*

Godfrey	James	17A Mercy Street	PG11 3ER	JimmyGee@newmail.com
Shaw	Max	218 Hollinwood Avenue	M17 5SD	MaxValue@openmail.com

```
Websites> db.Clients.insertOne({Surname: "Ali", Forname: "Safdar", Address: "182 Valley Parade", Postcode: "BR7 8GH", Email: "SafdarAli@boringmail.com"})
{
  acknowledged: true,
  insertedId: ObjectId("64cbb1323297d4b544cc200b")
}
Websites> db.Clients.insertOne({Surname: "Meadows", Forname: "Fiona", Address: "14 Tay Street", Postcode: "NM11 6DS", Email: "FiMeadow@mymail.com"})
{
  acknowledged: true,
  insertedId: ObjectId("64cbb1943297d4b544cc200c")
}
Websites> db.Clients.insertMany([
  {Surname: "Godfrey", Forname: "James", Address: "17A Mercy Street", Postcode: "PG11 3ER", Email: "JimmyGee@newmail.com"},
  {Surname: "Shaw", Forname: "Max", Address: "218 Hollinwood Avenue", Postcode: "M17 5SD", Email: "MaxValue@openmail.com"}
])
{
  acknowledged: true,
  insertedIds: {
    '0': ObjectId("64cbb2723297d4b544cc200d"),
    '1': ObjectId("64cbb2723297d4b544cc200e")
  }
}
```

Above you will see the “insertOne” command used to add a single record and again “insertMany” for 2 more.

Below you can see these added records are reflected in Compass after a refresh.

Websites.Clients

DOCUMENTS INDEXES

Documents Aggregations Schema Indexes Validation

Filter Type a query: { field: 'value' } Explain Reset Find Options

ADD DATA EXPORT DATA 1 - 9 of 9

	_id ObjectId	Surname String	Forname String	Address String	Postcode String	
1	ObjectId('64cbaf593297d4b544cc200b')	"Illingworth"	"Chris"	"52 Acoma Street"	"WA14 5DD"	
2	ObjectId('64cbaf593297d4b544cc200c')	"Reynolds"	"Martin"	"Mill House"	"BG15 4RT"	
3	ObjectId('64cbaf593297d4b544cc200d')	"Hand"	"Jenny"	"68 Brayford Court"	"YO2 3JJ"	
4	ObjectId('64cbaf593297d4b544cc200e')	"Sparrow"	"Ivana"	"72 Cambridge Street"	"OL7 0EQ"	
5	ObjectId('64cbaf593297d4b544cc200f')	"Akhtar"	"Noor"	"91 Blaire Road"	"M47 9WS"	
6	ObjectId('64cbaf593297d4b544cc2010')	"Lau"	"Emma"	"67 Crumshaw Road"	"M17 9PR"	
7	ObjectId('64cbb2723297d4b544cc200d')	"Godfrey"	"James"	"17A Mercy Street"	"PG11 3ER"	
8	ObjectId('64cbb2723297d4b544cc200e')	"Shaw"	"Max"	"218 Hollinwood Avenue"	"M17 5SD"	
9	ObjectId('64cbb2723297d4b544cc200f')	"Meadows"	"Fiona"	"14 Tay Street"	"NM11 6DS"	

6. Amend the following records as shown below

Reynolds	Martin	Mill House	BG15 4RT	MartinReynolds@WYNN.co.uk
Hand	Jenny	68 Brayford Court	YO2 3JJ	Jen@blueskythinking.com

```

Websites> db.Clients.updateOne({Surname: "Reynolds"}, {$set: { Email: "MartinReynolds@WYNN.co.uk"}})
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
Websites> db.Clients.updateOne({Surname: "Hand"}, {$set: { Address: "68 Brayford Court", Postcode: "YO2 3JJ"}})
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}

```

Above you will see how the records have been updated, using the “Surname” to select it and the “\$set” instruction to make the ammendment to “Emai” for Mr Reynolds and “Address” and “Postcode” for Ms Hand.

Websites.Clients 8 DOCUMENTS 1 INDEXES

Documents Aggregations Schema Indexes Validation

Filter ⓘ ⓘ Type a query: { field: 'value' } Explain Reset Find </> Options ▶

➕ ADD DATA 📄 EXPORT DATA 1 - 9 of 9 ⏪ ⏩ ⌵ ⌶ ⌷

★ Clients	Surname String	Forname String	Address String	Postcode String	Email String	
1	"Illingworth"	"Chris"	"52 Acoma Street"	"WA14 5DD"	"Illingworthc@mymail.com"	✎ 📄 🗑
2	"Reynolds"	"Martin"	"Mill House"	"BG15 4RT"	"MartinReynolds@WYNN.co.uk"	✎ 📄 🗑
3	"Hand"	"Jenny"	"68 Brayford Court"	"YO2 3JJ"	"Jen@blueskythinking.com"	✎ 📄 🗑
4	"Sparrow"	"Ivana"	"72 Cambridge Street"	"OL7 8EQ"	"IvanTheTerrible@bigwig.com"	✎ 📄 🗑
5	"Akhtar"	"Noor"	"91 Blaire Road"	"HH7 9WS"	"NoorFTW@newmail.com"	✎ 📄 🗑
6	"Lau"	"Emma"	"67 Crumshaw Road"	"M17 9PR"	"EmzyEll@netmail.com"	✎ 📄 🗑
7	"Godfrey"	"James"	"17A Mercy Street"	"PG11 3ER"	"JimmyGee@newmail.com"	✎ 📄 🗑
8	"Shaw"	"Max"	"218 Hollinwood Avenue"	"M17 5SD"	"MaxValue@openmail.com"	✎ 📄 🗑
9	"Meadows"	"Fiona"	"14 Tay Street"	"NM11 6DS"	"FIMeadow@mymail.com"	✎ 📄 🗑

7. Delete the record for:

Sparrow	Ivana	72 Cambridge Street	OL7 8EQ	IvanTheTerrible@bigwig.com
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```

Websites> db.Clients.deleteOne ({Surname: "Sparrow"})
{ acknowledged: true, deletedCount: 1 }
Websites>

```

8. Using mongoDB Shell, the final state of the data in the collection (most of it as it scrolled off screen) is shown below, followed by with the Compass version

```

Websites> db.Clients.find()
[
  {
    _id: ObjectId("64cbaf593297d4b544cc2005"),
    Surname: 'Illingworth',
    Forname: 'Chris',
    Address: '52 Acoma Street',
    Postcode: 'WA14 5DD',
    Email: 'Illingworthc@mymail.com'
  },
  {
    _id: ObjectId("64cbaf593297d4b544cc2006"),
    Surname: 'Reynolds',
    Forname: 'Martin',
    Address: 'Mill House',
    Postcode: 'BG15 4RT',
    Email: 'MartinReynolds@WYNN.co.uk'
  },
  {
    _id: ObjectId("64cbaf593297d4b544cc2007"),
    Surname: 'Hand',
    Forname: 'Jenny',
    Address: '68 Brayford Court',
    Postcode: 'Y02 3JJ',
    Email: 'Jen@blueskythinking.com'
  },
  {
    _id: ObjectId("64cbaf593297d4b544cc2009"),
    Surname: 'Akhtar',
    Forname: 'Noor',
    Address: '91 Blaire Road',
    Postcode: 'HH7 9WS',
    Email: 'NoorFTW@newmail.com'
  },
  {
    _id: ObjectId("64cbaf593297d4b544cc200a"),
    Surname: 'Lau',
    Forname: 'Emma',

```

Websites.Clients

8 1
DOCUMENTS INDEXES

Documents

Aggregations

Schema

Indexes

Validation

Filter ⓘ ⓘ

Type a query: { field: 'value' }

Explain

Reset

Find

↵

Options ▶

ADD DATA ▼

EXPORT DATA ▼

1 - 8 of 8

↺ ↻ ↷

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🏠 Clients

	Surname String	Forname String	Address String	Postcode String	Email String	
1	"Illingworth"	"Chris"	"52 Acoma Street"	"WA14 5DD"	"Illingworthc@mymail.com"	✎ 📄 🗑
2	"Reynolds"	"Martin"	"Mill House"	"BG15 4RT"	"MartinReynolds@WYNN.co.uk"	✎ 📄 🗑
3	"Hand"	"Jenny"	"68 Brayford Court"	"Y02 3JJ"	"Jen@blueskythinking.com"	✎ 📄 🗑
4	"Akhtar"	"Noor"	"91 Blaire Road"	"HH7 9WS"	"NoorFTW@newmail.com"	✎ 📄 🗑
5	"Lau"	"Emma"	"67 Crumshaw Road"	"M17 9PR"	"EmzyEll@netmail.com"	✎ 📄 🗑
6	"Godfrey"	"James"	"17A Mercy Street"	"PG11 3ER"	"JimmyGee@newmail.com"	✎ 📄 🗑
7	"Shaw"	"Max"	"218 Hollinwood Avenue"	"M17 5SD"	"MaxValue@openmail.com"	✎ 📄 🗑
8	"Meadows"	"Fiona"	"14 Tay Street"	"NP11 6DS"	"FIMeadow@mymail.com"	✎ 📄 🗑

Consolidation task:

Create the following collection called **Sites**

JobNumber	Website	Domain	NumPages	CSS	Cart
ILL0001	illingwortharts	.co.uk	10	Yes	Yes
WHA0003	whatyouneednow	.uk	15	Yes	No
LEN0002	lendahand	.org.uk	9	No	No
SPA0006	sparrowcrafts	.co.uk	12	Yes	Yes
ROO0003	roofmendersUK	.co.uk	6	Yes	No

The Website collection was added (with a typo later corrected in Compass).

Websites.Sites

5 DOCUMENTS 1 INDEXES

Documents Aggregations Schema Indexes Validation

Filter Type a query: { field: 'value' } Explain Reset Find Options

ADD DATA EXPORT DATA 1 - 5 of 5

Website String	Domain String	NumPages Int32	CSS Boolean	Cart Boolean
1 "illingworharts"	".co.uk"	10	true	true
2 "whatyouneednow"	".uk"	15	true	false
3 "lendahand"	".org.uk"	9	false	false
4 "sparrowcrafts"	".co.uk"	12	true	true
5 "roofmendersUK"	".co.uk"	6	true	false

A good referent for queries:

https://www.w3schools.com/mongodb/mongodb_query_operators.php

For example a query that will search for .co.uk websites that will have a shopping cart.

```
 Websites> db.Sites.find({Domain: ".co.uk", Cart: true})
[
  {
    _id: ObjectId("64cbc1c63297d4b544cc2011"),
    JobNumber: 'ILL0001',
    Website: 'illingworharts',
    Domain: '.co.uk',
    NumPages: 10,
    CSS: true,
    Cart: true
  },
  {
    _id: ObjectId("64cbc1c63297d4b544cc2014"),
    JobNumber: 'SPA0006',
    Website: 'sparrowcrafts',
    Domain: '.co.uk',
    NumPages: 12,
    CSS: true,
    Cart: true
  }
]
```