

# MongoDB installation

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# MongoDB

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- MongoDB is a non-relational database
- Mongo stores data in flexible, JSON-like documents
- Non-relational databases are schemaless, meaning that fields can vary from document to document and data structure can be changed over time

# Install MongoDB

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- In this week's lab, we will install and test MongoDB
- Over the next few weeks, we will explore the CRUD (Create, Read, Update, Delete) functions in MongoDB

File Explorer window showing the contents of the folder: **Computer > Default (C:) > Program Files > MongoDB > Server > 4.0 > bin**. The address bar is highlighted with a red box.

The left sidebar shows the navigation pane with the following sections:

- Favorites:** Desktop, Recent Places, Dropbox, Downloads, Google Drive, Creative Cloud Files
- Libraries:** Documents, Music, Pictures, Videos
- Computer:** Default (C:), Staff H Drive (H:), Student P Drive (P:), Staff Q Drive (Q:), My WIT OneDrive

The main pane displays a list of files and folders. The files are sorted by Name. The following files are highlighted with red boxes:

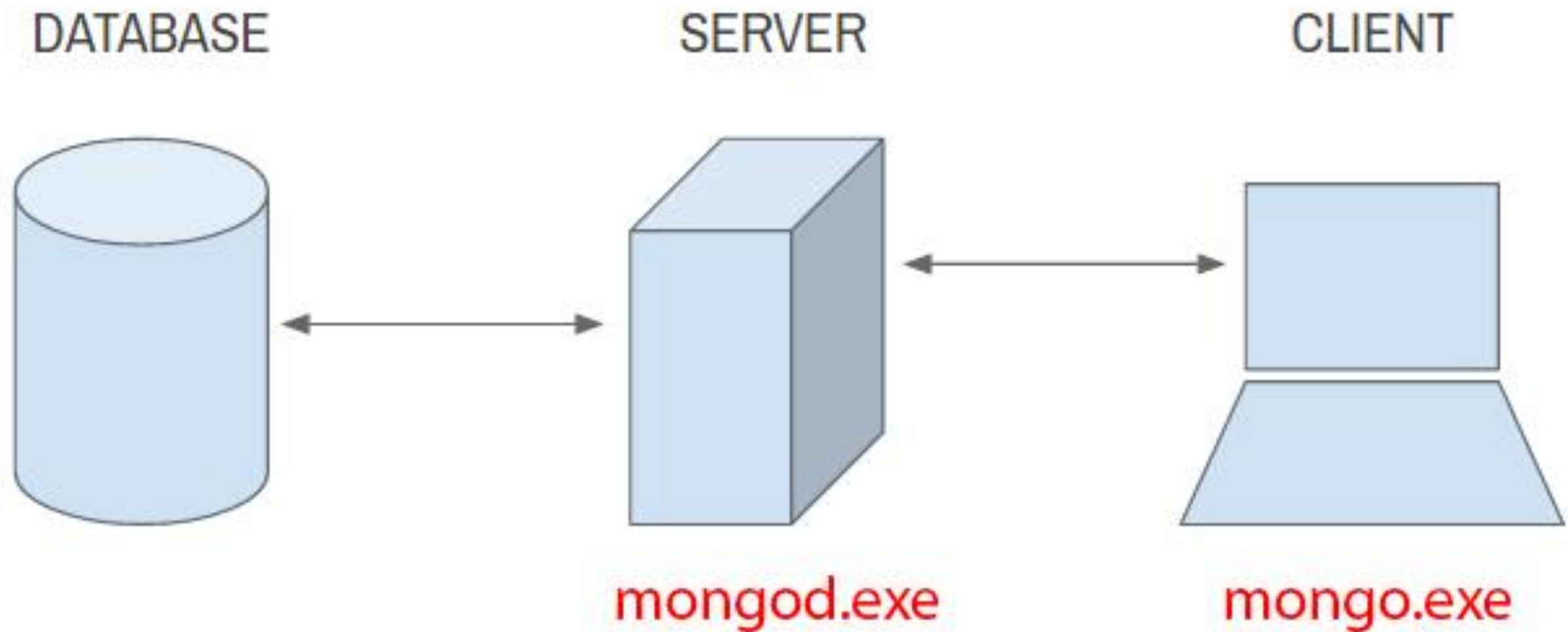
- mongo.exe** (Application, 17,934 KB)
- mongod.exe** (Application, 31,601 KB)

Name	Date modified	Type	Size
bsondump.exe	27/08/2018 23:02	Application	8,608 KB
grades.json	20/09/2018 15:39	JSON File	92 KB
InstallCompass.ps1	27/08/2018 23:26	PS1 File	2 KB
libeay32.dll	03/04/2018 18:58	Application extens...	2,405 KB
mongo.exe	27/08/2018 23:18	Application	17,934 KB
mongod.cfg	11/09/2018 08:40	CFG File	1 KB
mongod.exe	27/08/2018 23:28	Application	31,601 KB
mongod.pdb	27/08/2018 23:28	Source Browser D...	346,052 KB
mongodump.exe	27/08/2018 23:06	Application	10,674 KB
mongoexport.exe	27/08/2018 23:04	Application	8,862 KB
mongofiles.exe	27/08/2018 23:03	Application	8,793 KB
mongoimport.exe	27/08/2018 23:04	Application	8,961 KB
mongorestore.exe	27/08/2018 23:05	Application	11,760 KB
mongos.exe	27/08/2018 23:19	Application	16,385 KB
mongos.pdb	27/08/2018 23:19	Source Browser D...	180,804 KB
mongostat.exe	27/08/2018 23:03	Application	8,950 KB
mongotop.exe	27/08/2018 23:06	Application	8,758 KB
ssleay32.dll	03/04/2018 18:58	Application extens...	350 KB

18 items

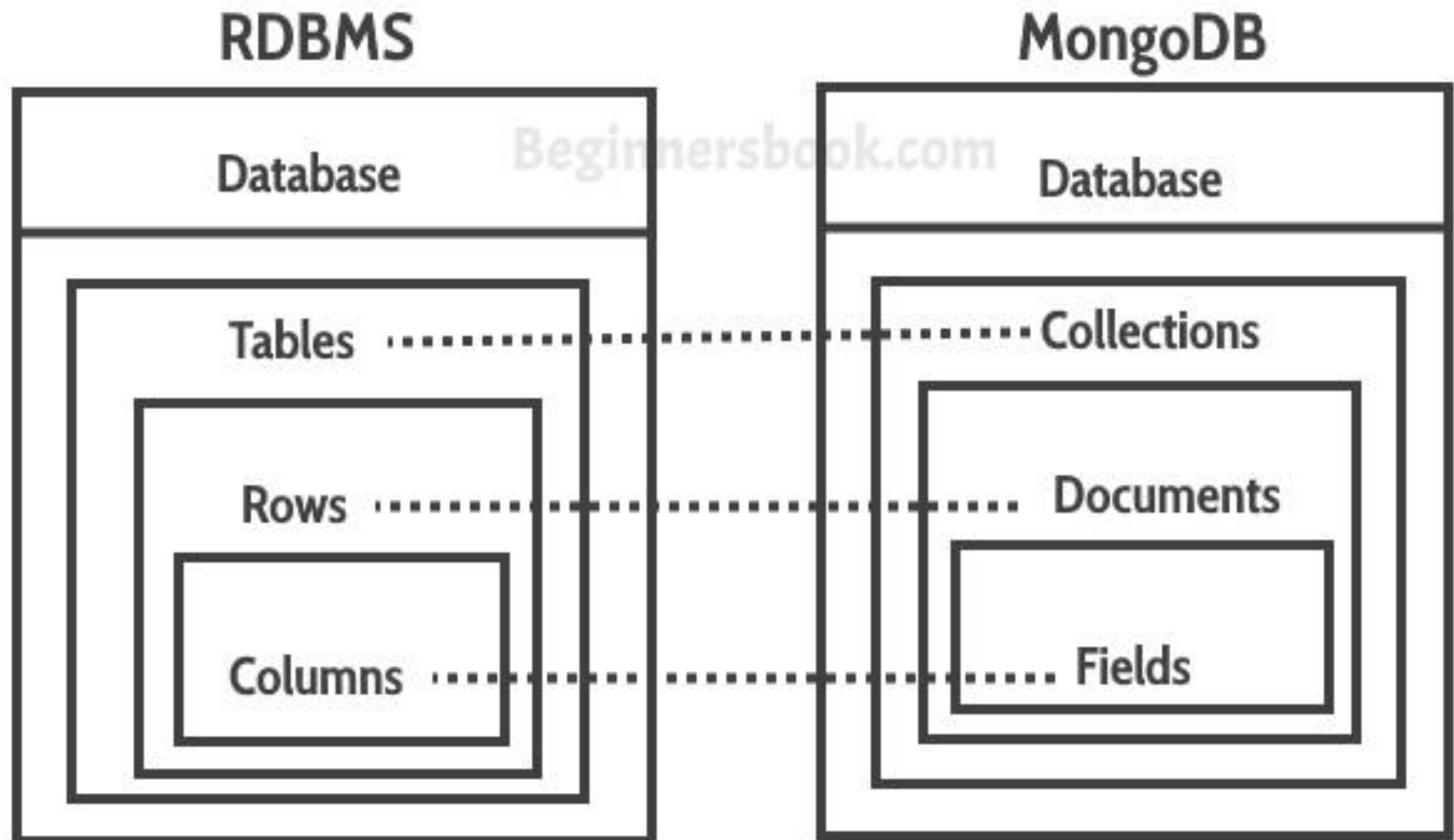
# MongoDB Client and Server

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# Collections and documents

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# MongoDB Commands

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- Some useful commands:

Command	What it does
show dbs	Shows all databases
show db	Shows which database you are currently using
use dbname	Switches to the database specified; also creates the database if it doesn't exist yet
show collections	Lists the collections in the current database

# Document syntax

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- Curly brackets are used to specify documents
- Fields consist of properties and values (with a : colon in between)
- When specifying multiple fields, use commas to separate them

```
{  
  item: "box",  
  qty: 20  
}
```



# Document syntax

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- As well as strings and integers, there are boolean, double and date datatypes

```
{  
  item: "box",  
  qty: 20,  
  price: 14.99,  
  available: true,  
  timestamp: new Date()  
}
```

# Document syntax

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- Documents can also contain arrays (indicated by square brackets) and nested documents (more curly brackets)

```
{  
  item: "box",  
  qty: 20,  
  price: 14.99,  
  available: true,  
  timestamp: new Date(),  
  itemcodes: [1002, 1003, 1004],  
  supplierinfo: { name: "Boxes Inc.", location: "Ireland" }  
}
```

# Document syntax

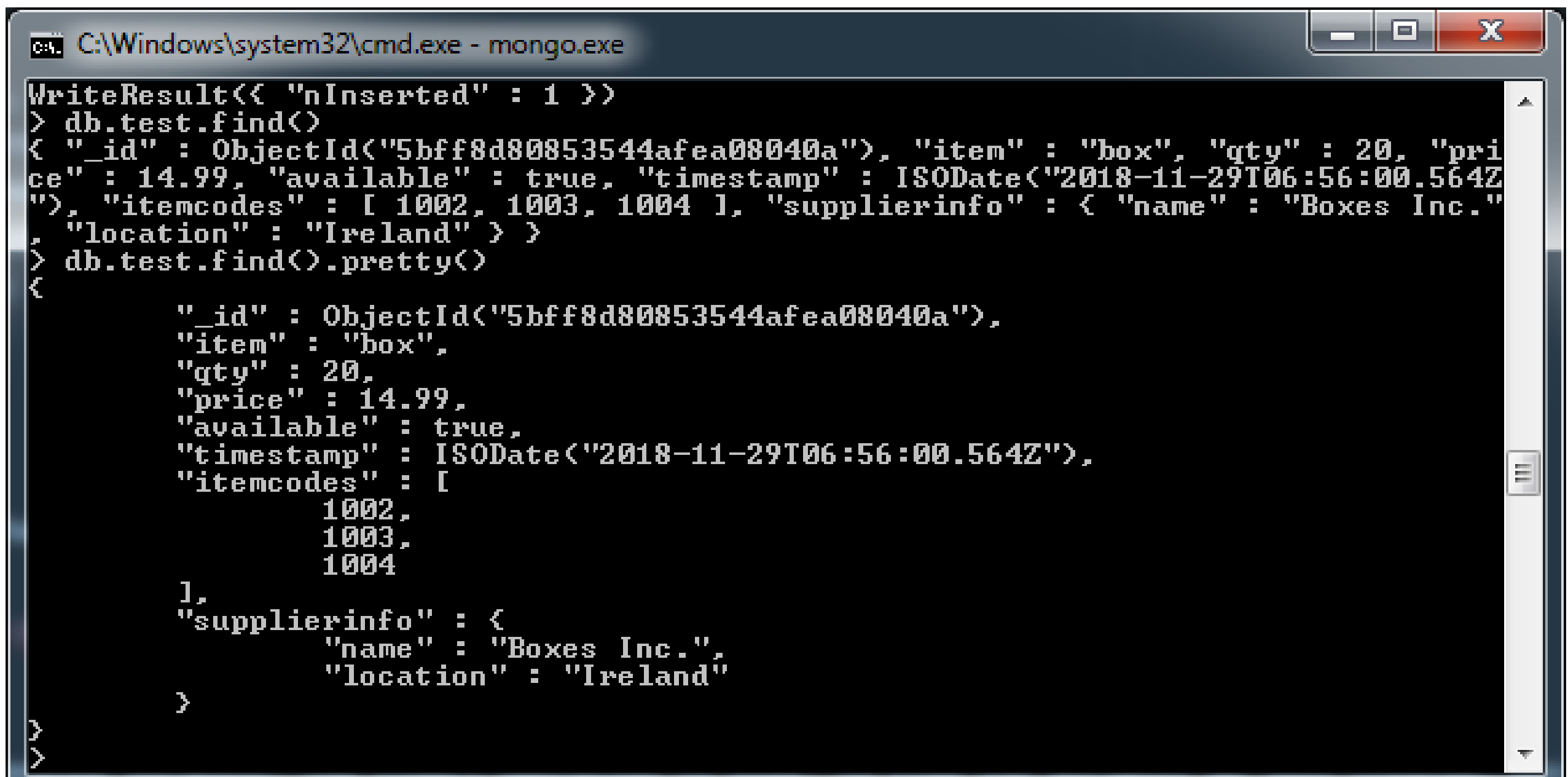
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- To add this to the test database:

```
db.test.insert(  
  {  
    item: "box",  
    qty: 20,  
    price: 14.99,  
    available: true,  
    timestamp: new Date(),  
    itemcodes: [1002, 1003, 1004],  
    supplierinfo: { name: "Boxes Inc.", location: "Ireland" }  
  }  
)
```

# Document syntax

- MongoDB will add an ObjectId to each document you create (unless you add your own id)



```
C:\Windows\system32\cmd.exe - mongo.exe
WriteResult(<< "nInserted" : 1 >>)
> db.test.find()
< {"_id" : ObjectId("5bfff8d80853544afea08040a"), "item" : "box", "qty" : 20, "price" : 14.99, "available" : true, "timestamp" : ISODate("2018-11-29T06:56:00.564Z"), "itemcodes" : [ 1002, 1003, 1004 ], "supplierinfo" : { "name" : "Boxes Inc.", "location" : "Ireland" } }
> db.test.find().pretty()
<
  "_id" : ObjectId("5bfff8d80853544afea08040a"),
  "item" : "box",
  "qty" : 20,
  "price" : 14.99,
  "available" : true,
  "timestamp" : ISODate("2018-11-29T06:56:00.564Z"),
  "itemcodes" : [
    1002,
    1003,
    1004
  ],
  "supplierinfo" : {
    "name" : "Boxes Inc.",
    "location" : "Ireland"
  }
}
```