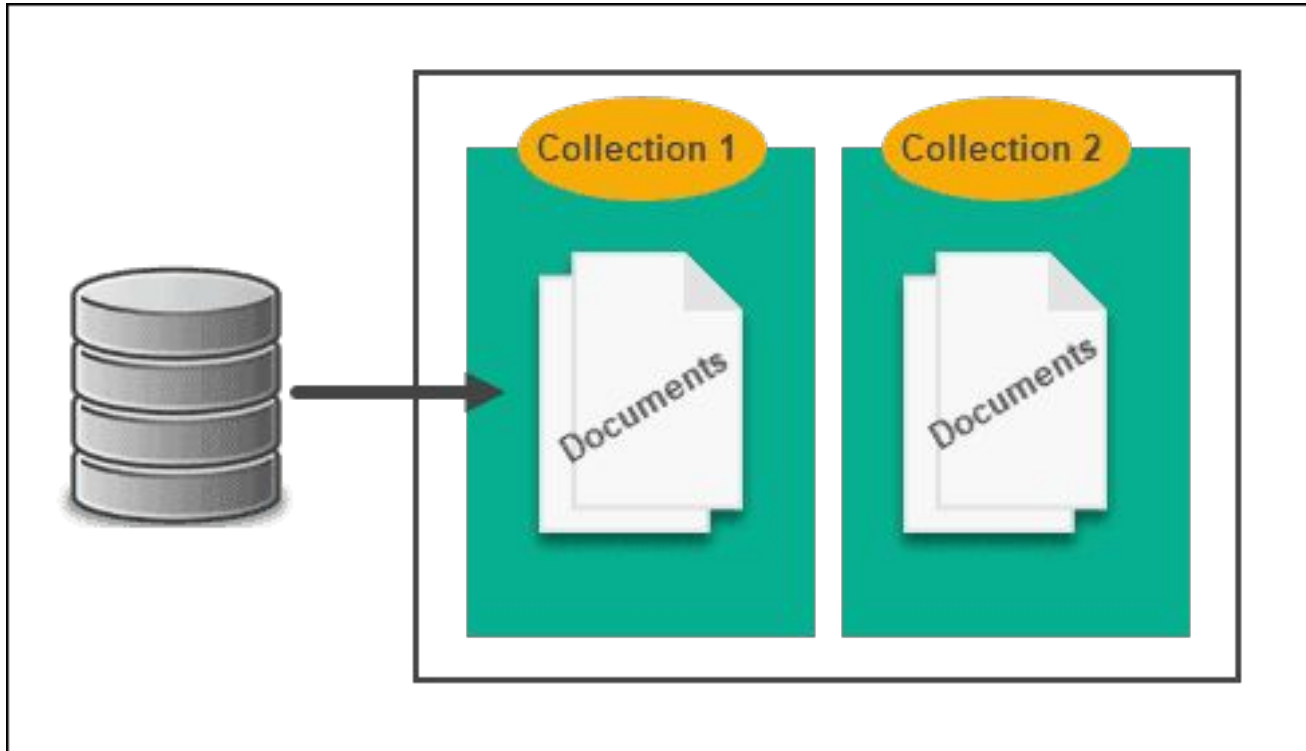


# Unit - 4

# What Is a Document Database



# Document Database using MongoDB

## MongoDB

### Collection1



### Collection2



## Document Database using MongoDB



Collection

## MongoDB Data types

Type	Number	Alias	Notes
Double	1	"double"	
String	2	"string"	
Object	3	"object"	
Array	4	"array"	
Binary Data	5	"binData"	
Undefined	6	"undefined"	Deprecated
ObjectId	7	"objectId"	
Boolean	8	"bool"	
Date	9	"date"	
Null	10	"null"	
Regular Expression	11	"regex"	
DBPointer	12	"dbPointer"	Deprecated
JavaScript	13	"javascript"	
Symbol	14	"symbol"	Deprecated
Javascript (with scope)	15	"javascriptWithScope"	
32-bit integer	16	"int"	
Timestamp	17	"timestamp"	
64-bit Integer	18	"long"	
Decimal128	19	"decimal"	New in Version 3.4
Min Key	-1	"minKey"	
Max Key	127	"maxKey"	

JSON

# What is { JSON }?



```
{  
  "firstName": "John",  
  "lastName": "Smith",  
  "isAlive": true,  
  "age": 27,  
  "address": {  
    "streetAddress": "21 2nd Street",  
    "city": "New York",  
    "state": "NY",  
    "postalCode": "10021-3100"  
  },  
  "phoneNumbers": [  
    {  
      "type": "home",  
      "number": "212 555-1234"  
    },  
    {  
      "type": "office",  
      "number": "646 555-4567"  
    },  
    {  
      "type": "mobile",  
      "number": "123 456-7890"  
    }  
  ],  
  "children": [],  
  "spouse": null  
}
```

# JSON Syntax

```
1 //Student JSON Object
2 {
3   "rollNumber" : 11,
4   "firstName" : "Saurabh",
5   "lastName" : "Gupta",
6   "permanent" : false,
7   "address" : {
8     "addressLine" : "Lake Union Hill Way",
9     "city" : "Atlanta",
10    "zipCode" : 50005
11  },
12  "phoneNumbers" : [ 2233445566, 3344556677 ],
13  "cities" : [ "Dallas", "San Antonio", "Irving" ],
14  "properties" : {
15    "play" : "Badminton",
16    "interst" : "Math",
17    "age" : "34 years"
18  }
19 }
```

Annotations:

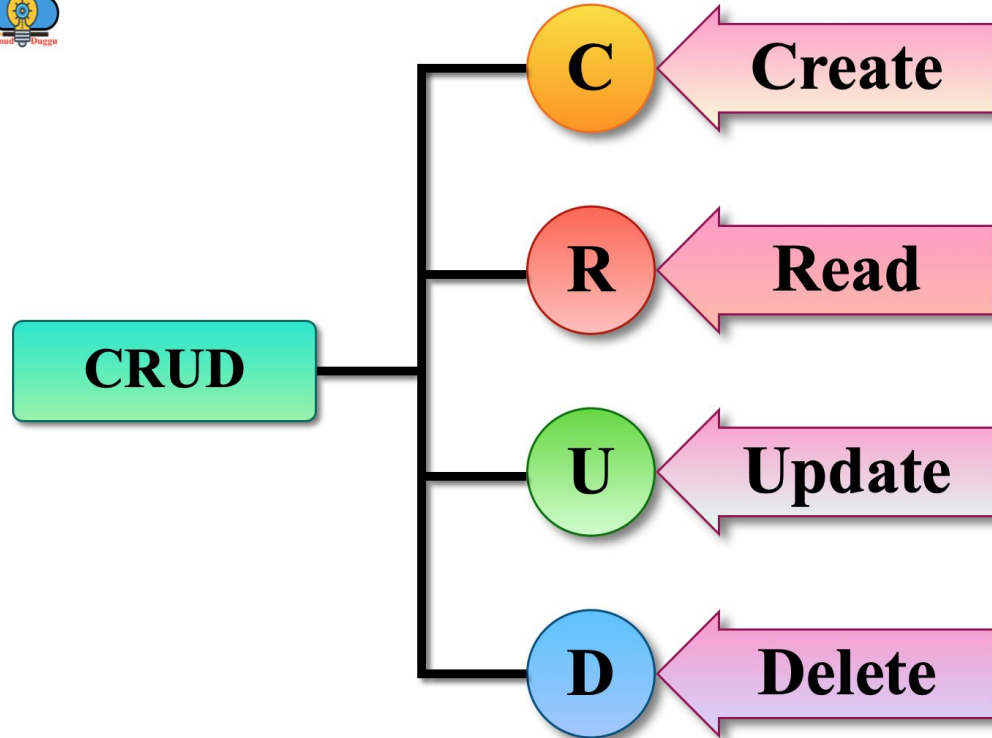
- ↑ JSON for number values without doublequote
- ↑ JSON for String values with double quote
- ↑ JSON for boolean allow values true/false
- ↑ JSON for address object with in curly bracket
- ← Array of Numeric Values
- ← Array of String values
- ← JSON to represent map in key value pairs

# MongoDB Data Modelling

- Flexible Schema
- Document Structure
- Embedded Data
- References
- Single Document Atomicity
- Multi-Document Transactions



# MongoDB CRUD operations



Create Operation:

```
db.users.insertOne(  ← collection
{
  name: "sue",        ← field: value
  age: 26,            ← field: value
  status: "pending"   ← field: value
}                    } document
)
```

## Create Operation:

```
db.users.insertMany(  
  [  
    {  
      name: "sue",  
      age: 26,  
      status: "pending"  
    },  
    {  
      name: "bob",  
      age: 25,  
      status: "enrolled"  
    },  
    {  
      name: "ann",  
      age: 28,  
      status: "enrolled"  
    }  
  ]  
)
```

← collection

← field: value  
← field: value  
← field: value } document

} document

} document

## Read Operation:

```
db.users.find(  
  { age: { $gt: 18 } },  
  { name: 1, address: 1 }  
) .limit(5)
```

- ← collection
- ← query criteria
- ← projection
- ← cursor modifier

## Update Operation:

```
db.users.updateMany(  
  { age: { $lt: 18 } },  
  { $set: { status: "reject" } }  
)
```




← collection

← update filter

← update action

Delete Operation:

```
db.users.deleteMany(  
  { status: "reject" }  
)
```



collection

delete filter

# Import from CSV

MongoDB Compass - localhost:27017/data.data

Connect Edit View Collection Help

localhost:27017

Documents  
data.data

+

My Queries

Databases

Search

Narasimha

admin

config

data

data

local

data.data

Documents Aggregations Schema Explain Plan Indexes Validation

Filter ⚙️ ⌚ Type a query: { field: 'value' }

ADD DATA EXPORT COLLECTION

Import JSON or CSV file

Insert document

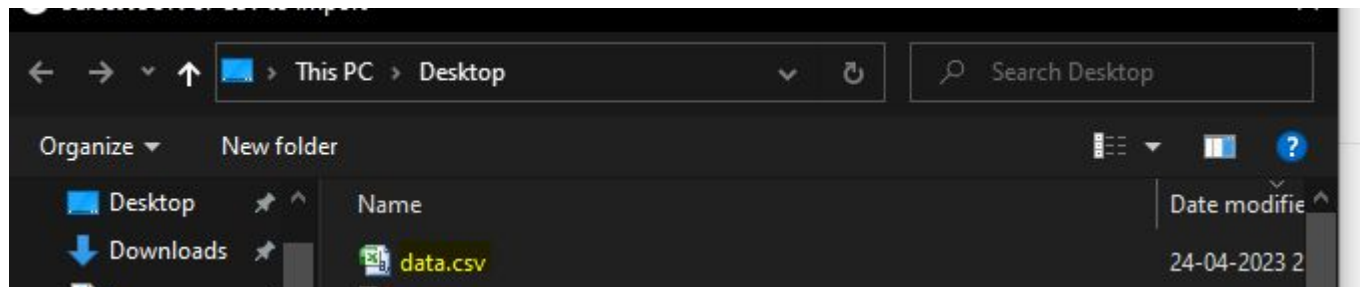
\_id: ObjectId('64466279aa3dd2d974cebe19')

name: 6

\_id: "64466279aa3dd2d974cebe19"

name: "narasimha"

# Import from CSV



## Import

To Collection data.data

data.csv

### Delimiter

comma

☒ Ignore empty strings

☐ Stop on errors

### Specify Fields and Types

☒ \_id  
String

1 64466279aa3dd2d974cebe19  
2 644662abaa3dd2d974cebe1a

☒ name  
Mixed

narasimha  
6

Cancel

Import



# Export to CSV

mongoose-compass | mongoose.com/docs

Connect Edit View Collection Help



localhost:27017



Documents  
data.data



My Queries

Databases



Search

Narasimha

admin

config

data

data



local

data.data

4

DOCUMENTS

Documents

Aggregations

Schema

Explain Plan

Indexes

Validation

Filter



Type a query: { field: 'value' }

Reset

Find



ADD DATA

EXPORT COLLECTION

1 - 4 of 4



```
{
  "_id": ObjectId('64466279aa3dd2d974cebe19'),
  "name": "narasimha"
}
```

```
{
  "_id": ObjectId('644662abaa3dd2d974cebe1a'),
  "name": 6
}
```

```
{
  "_id": "64466279aa3dd2d974cebe19",
  "name": "narasimha"
}
```

```
{
  "_id": "644662abaa3dd2d974cebe1a",
  "name": 6
}
```

# Export to CSV

## Export



Collection data.data

☒ Export query with filters — 4 results (Recommended)

```
db.data.find(  
  {}  
)
```

☐ Export Full Collection

Cancel

Select Fields

# Export to CSV

## Export



Collection data.data

### Select Fields

The fields displayed are from a sample of documents in the collection. To ensure all fields are exported, add missing field names.

**+ ADD NEW FIELD**

☒ **Field Name**

☒ \_id

☒ name

Add field

Press "Enter" to add field

[< Back](#)

Cancel

Select Output

# Export to CSV

## Export




Collection data.data


### Export File Type

JSON

CSV

### Output

 Select a file...

 Back

Cancel

Export

# Suitable Usecases

- Event Logging
- Content Management Systems, Blogging Platforms
- Web Analytics or Real-Time Analytics
- E-Commerce Applications

# When not to use

- Complex Transactions Spanning Different Operations