

MongoDB Crash Course

ComputeFest

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Starting MongoDB

- Commands to run are in blue
- Start server
 - Open terminal window
 - `mkdir DB`
 - `mongod --dbpath DB`
- Start client
 - `mongo`

Create a Collection

- Create a database entry
 - `var customer = {name: "bob", balance: 100}`
 - `db.customers.insert(customer)`
- We now have one collection of customers
 - `show collections`
- In the collection, we have one customer
 - `db.customers.find()`

Pretty Printing

- Print things nicely
 - `db.customers.find().pretty()`
- Note that each document within a collection has a unique ID that is created automatically

Filtering

- Create another customer
 - `var customer2 = {name: "sara", balance: 200}`
 - `db.customers.insert(customer2)`
- Again, list all customers:
 - `db.customers.find().pretty()`
- List customers called Sara
 - `db.customers.find({name: "sara"}).pretty()`
- List customers with balance greater than 150
 - `db.customers.find({ balance: { $gt: 150} }).pretty()`

Updating Documents

- Give bob a surname
 - `db.customers.update(
 {name : "bob"}, {$set : {surname: "Dylan"}})`
- Add 50 to Bob's account
 - `db.customers.update({name : "bob"},
 {$inc : {balance: 50}})`
- Check outcome
 - `db.customers.find().pretty()`

Copying a Document

- Create a copy of Bob
 - `var cust = db.customers.findOne({name : "bob"})`
- Print the surname of the copy
 - `cust["surname"]`
- Change the surname of the copy
 - `cust["surname"] = "Marley"`

Saving a Copy to the Database

- Try to save the copy in the database (won't work)
 - `db.customers.insert(cust)`
- Generate a new object ID
 - `var o = ObjectId()`
- Assign the new ID to the copy
 - `cust["_id"] = o`
- Now try to insert again
 - `db.customers.insert(cust)`

Aggregation

- Find sum of all account balances
- `db.customers.aggregate([{ $group: {
_id: null, total: { $sum: "$balance" } } }])`

Summary

- When to use MongoDB?
- You need a flexible data model
- Non-interacting entities
 - No sharing (e.g. bank account)
 - No exchanging (e.g. money transfers)
- Commutative operations on data
- You do not need advanced analytics