

NOSQL

INFO-H-415

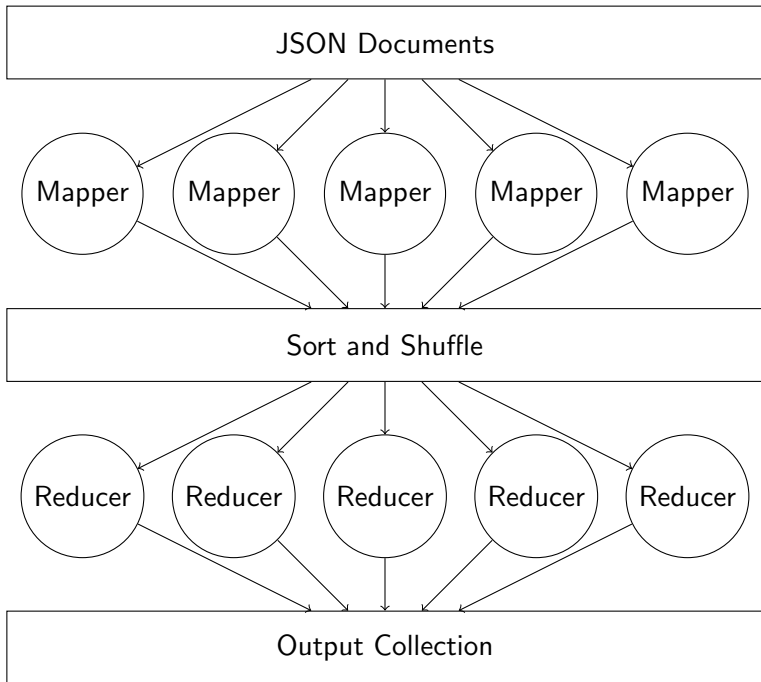
Université Libre de Bruxelles

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MongoDB

- ▶ MongoDB is a document oriented database
- ▶ MongoDB support map-reduce over its document
- ▶ *json* documents

```
{
  "name": "John Smith",
  "address": {
    "street": "Lily Road",
    "number": 32,
    "city": "Owatonna",
    "zip": 55060
  },
  "hobbies": [ "yodeling", "ice skating" ]
}
```



Map and Reduce functions

- ▶ Documents are bound to `this` in the map function.
- ▶ Map produces (key, value) pairs through `emit`.
- ▶ Reduce **must** be idempotent.

Example Query

```
{  
  "name": "John Smith",  
  "address": { "street": "Lily Road",  
               "number": 32,  
               "city": "Owatonna",  
               "zip": 55060 },  
  "hobbies": [ "yodeling", "ice skating" ]  
}
```

- ▶ Count the number of employee per city

Example Query

```
var map = function () {
    emit(this.address.city,
        {city: this.address.city, count: 1});
};

var reduce = function (key, values) {
    var result = {city: key, count: 0};

    values.forEach(function (value) {
        result.count += value.count;
    });

    return result;
};
```

Example Query

```
var result = db.employees.mapReduce(map, reduce);

result = {
  "result" : "tmp.mr.mapreduce_1304255132_12",
  "timeMillis" : 82,
  "counts" : {
    "input" : 164,
    "emit" : 164,
    "output" : 30
  },
  "ok" : 1
}
```