Blood Donation Database System

Milestone: Implementation in NoSQL

Group 16
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Implementation in MySQL

Summary : We have created a NoSQL database in mongodb and have successfully migrated our data from SQL tables to NoSQL collections in mongodb, further we have ran some NoSQL queries on the collections which are as follows :

1) Creating Blood_bank database in mongodb.

```
> show databases;
Blood_bank   0.000GB
admin        0.000GB
config       0.000GB
local        0.000GB
testdb       0.000GB
```

2) Collections present in our mongodb blood_bank database.

```
> show collections;
blood
blood_bank
blood_bank_manager
donor
hospital
medical_report
nurse
order
order_history
patient
payment
```

3) Select query on blood collection.

```
> db.blood.find().pretty()
{
        "_id" : ObjectId("6369a9b1a1334618dad58762"),
        "blood_id" : 1,
        "blood_type" : "O-",
        "quantity" : 324,
        "date" : ISODate("1979-08-24T04:00:00Z"),
        "donor_id" : 1
}
{
        "_id" : ObjectId("6369a9b1a1334618dad58763"),
        "blood_id" : 2,
        "blood_type" : "O-",
        "quantity" : 103,
        "date" : ISODate("1971-03-12T05:00:00Z"),
        "donor_id" : 2
}
{
        "_id" : ObjectId("6369a9b1a1334618dad58764"),
        "blood_id" : 3,
        "blood_type" : "O-",
        "quantity" : 382,
        "date" : ISODate("2013-05-15T04:00:00Z"),
        "donor_id" : 3
}
{
        "_id" : ObjectId("6369a9b1a1334618dad58765"),
        "blood_id" : 4,
        "blood_type" : "A-",
        "quantity" : 406,
        "date" : ISODate("1975-01-20T05:00:00Z"),
        "donor_id" : 4
}
{
        "_id" : ObjectId("6369a9b1a1334618dad58766"),
        "blood_id" : 5,
        "blood_type" : "B+",
        "quantity" : 393,
        "date" : ISODate("1974-04-10T04:00:00Z"),
        "donor_id" : 5
}
```

4) Finding total quantity of each blood type available.

```
> db.blood.aggregate([
... {$group: {_id: "$blood_type", total: {$sum: "$quantity"}}}
... ])
{ "_id" : "AB-", "total" : 3507 }
{ "_id" : "A-", "total" : 7144 }
{ "_id" : "O-", "total" : 5336 }
{ "_id" : "O+", "total" : 4676 }
{ "_id" : "B+", "total" : 3539 }
{ "_id" : "B-", "total" : 1283 }
{ "_id" : "A+", "total" : 2739 }
{ "_id" : "AB+", "total" : 4417 }
```

5) Finding Blood Banks which has more than 4 liters of O+ blood.

```
> db.blood_bank.find({
... quantity:{$gt:4000},blood_type:"O+"
... }).pretty()
{
        "_id" : ObjectId("6369aadea1334618dad58805"),
        "blood_bank_id" : 27,
        "name" : "McClure, Legros and Kuphal",
        "address" : "616 Danika Fords Apt. 237\nTillmanland, CT 46254-2465",
        "quantity" : 4419,
        "blood_type" : "O+",
        "bbm_id" : 27
}
{
        "_id" : ObjectId("6369aadea1334618dad5880d"),
        "blood_bank_id" : 35,
        "name" : "Wuckert, Doyle and Gislason",
        "address" : "56167 Alexie Keys\nFlavietown, MS 30290-7413",
        "quantity" : 4946,
        "blood_type" : "O+",
        "bbm_id" : 35
}
{
        "_id" : ObjectId("6369aadea1334618dad58823"),
        "blood_bank_id" : 57,
        "name" : "Renner-Davis",
        "address" : "68981 Hammes Parkway Apt. 555\nSouth Melyssatown, CO 22381",
        "quantity" : 4124,
        "blood_type" : "O+",
        "bbm_id" : 57
}
>
```