STAR TALENT

Milestone: NoSQL Implementation (MongoDB)

Group 14

Student 1: Pooja Laxmi Sankarakameswaran

Student 2: Sabarish Subramaniam Anandhi Vijayaragavan

(857)-423-0754

(617)-992-5508

sankarakameswaran.p@northeastern.edu

anandhivijayaragav.s@northeastern.edu

Percentage of Effort Contributed by Student1: 50

Percentage of Effort Contributed by Student2: 50

Signature of Student 1: 

Signature of Student 2: 

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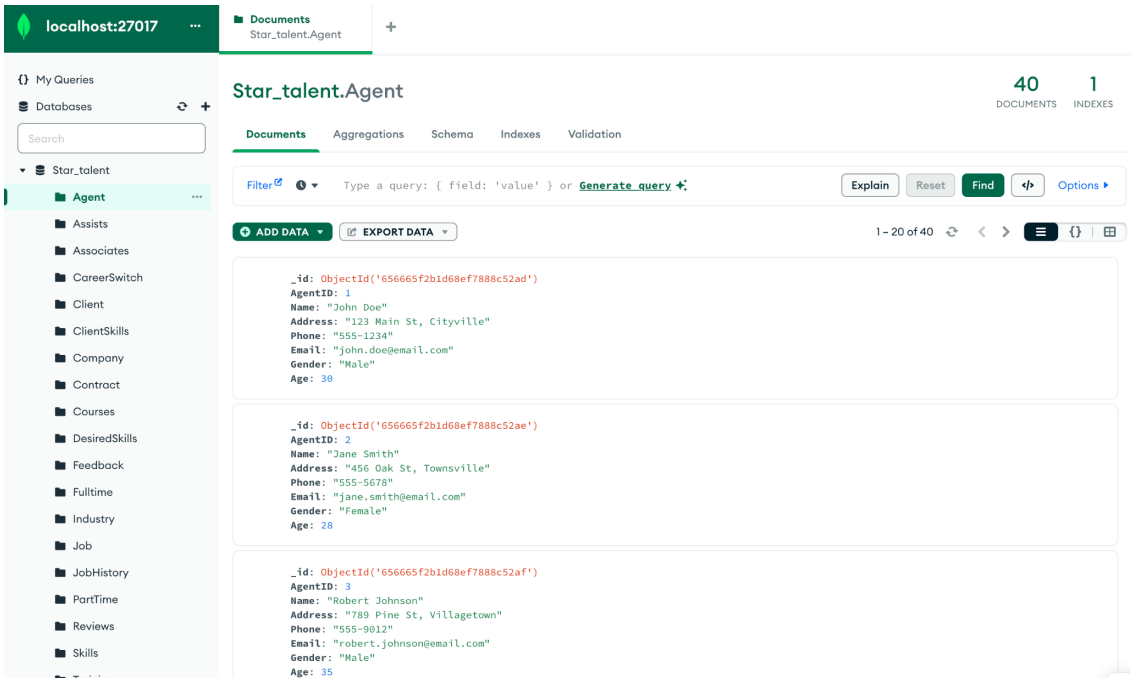
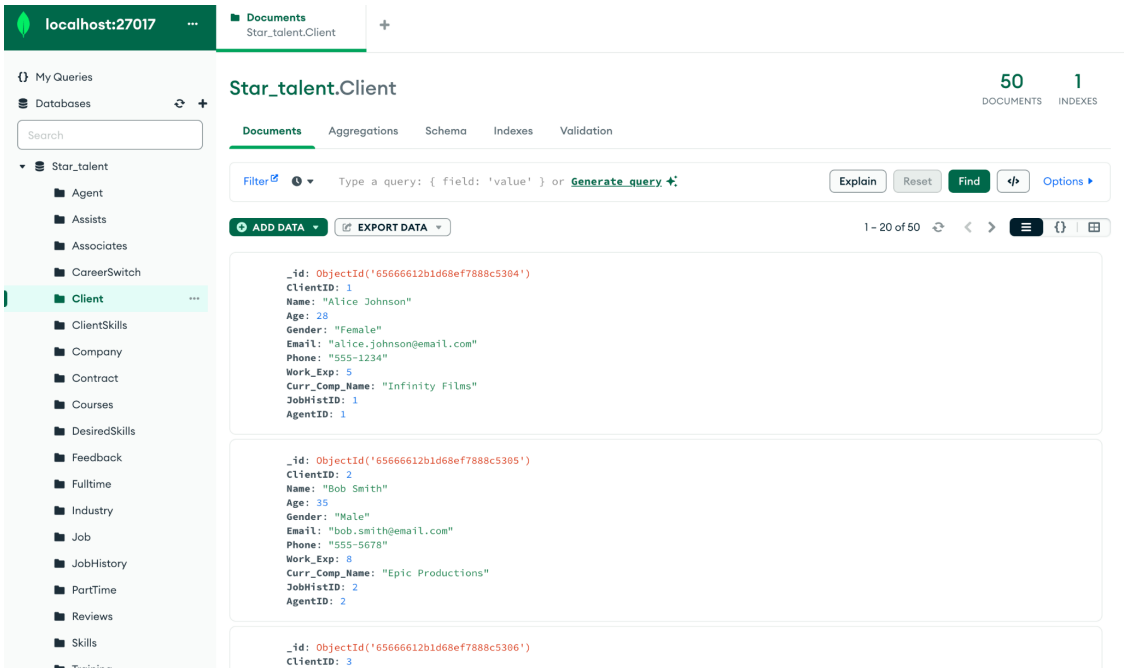
The below images show the Agent, Client, Job, Company, and Courses after we populate the required data in all the collections in MongoDB

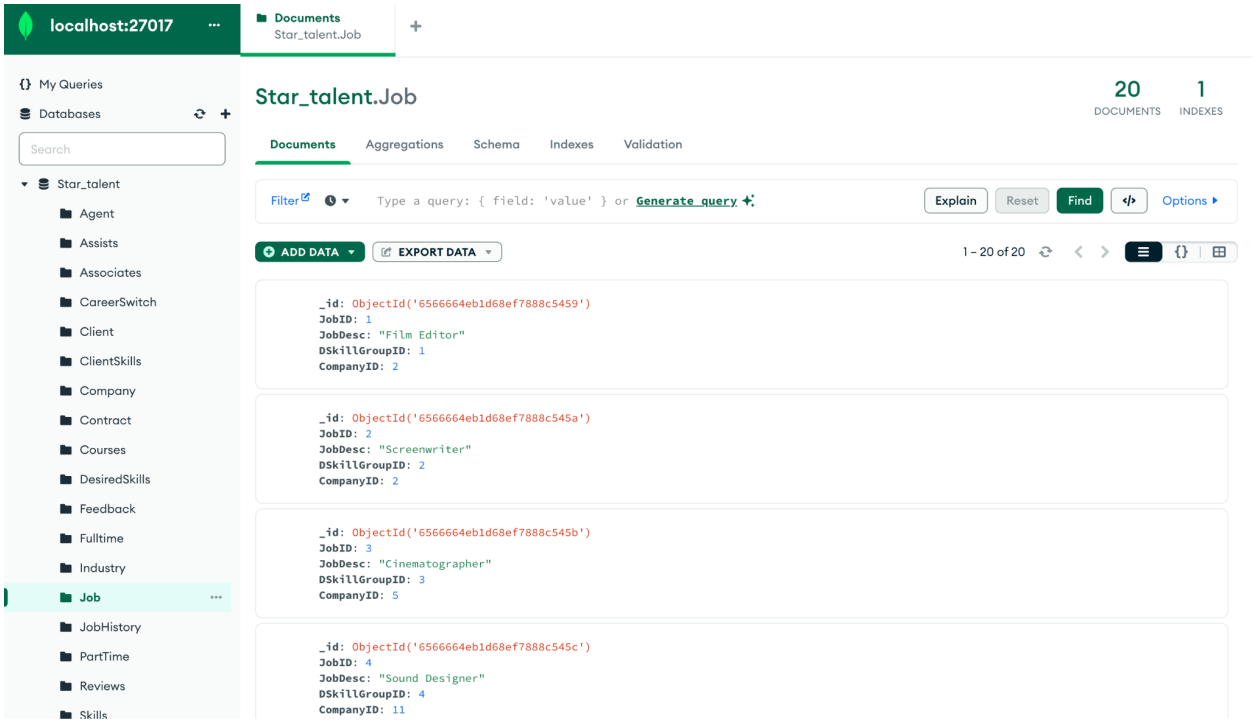
Agent



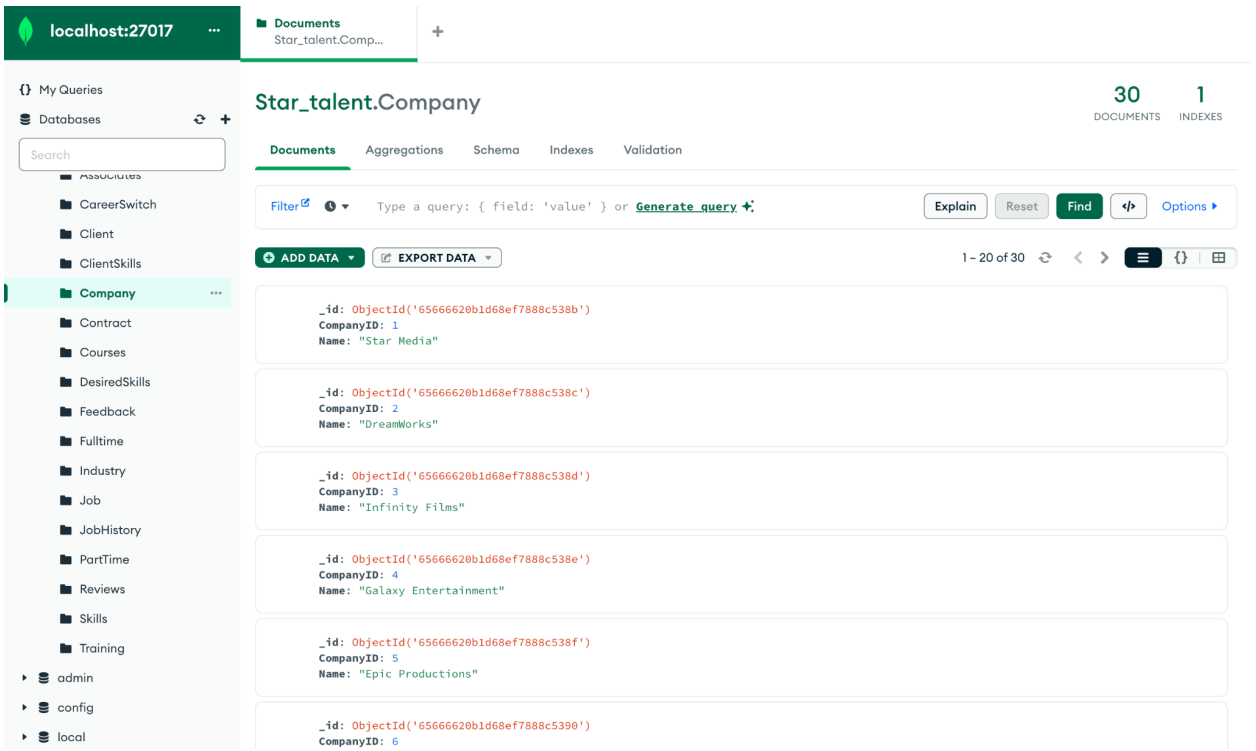
Client



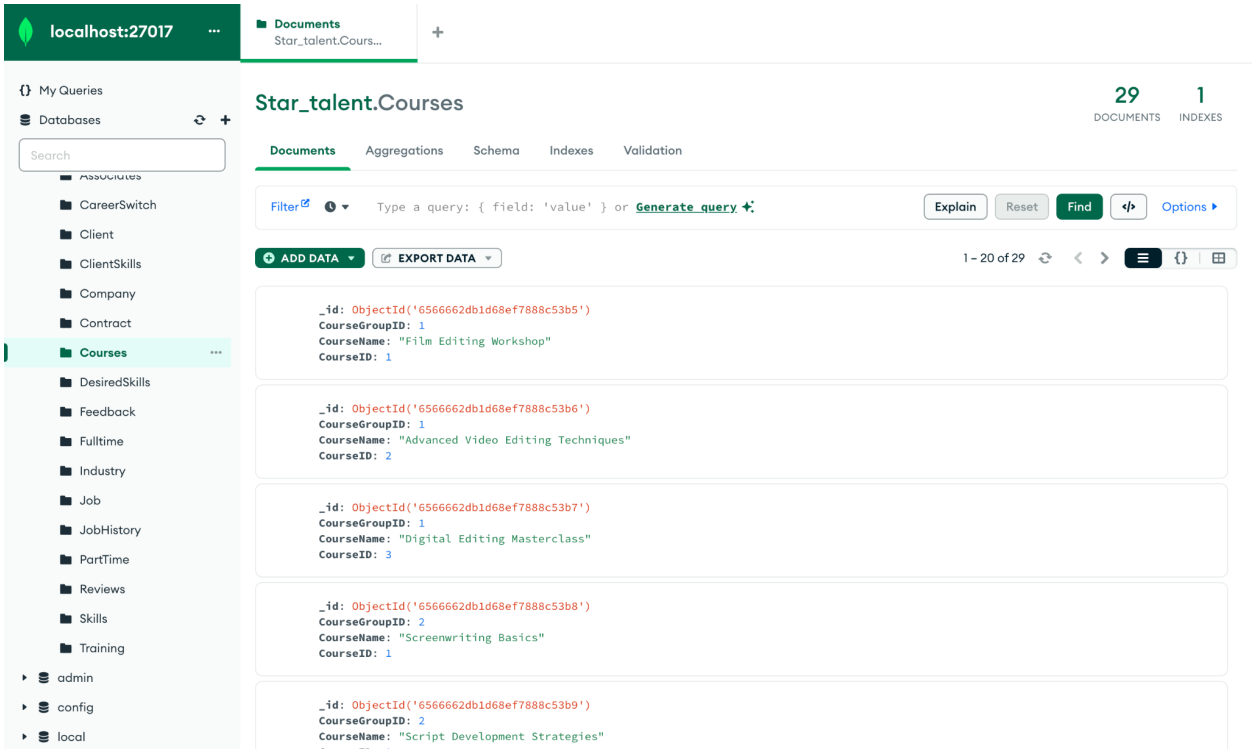
Job


localhost:27017
Documents
Star_talent.Job
My Queries
Databases
Search
Star_talent
Agent
Assists
Associates
CareerSwitch
Client
ClientSkills
Company
Contract
Courses
DesiredSkills
Feedback
Fulltime
Industry
Job
JobHistory
PartTime
Reviews
Skills
Star_talent.Job
20
DOCUMENTS
1
INDEXES
Documents
Aggregations
Schema
Indexes
Validation
Filter
Type a query: { field: 'value' } or Generate query
Explain
Reset
Find
Options
ADD DATA
EXPORT DATA
1 - 20 of 20
_id: ObjectId('6566664eb1d68ef7888c5459')
JobID: 1
JobDesc: "Film Editor"
DSkillGroupID: 1
CompanyID: 2
_id: ObjectId('6566664eb1d68ef7888c545a')
JobID: 2
JobDesc: "Screenwriter"
DSkillGroupID: 2
CompanyID: 2
_id: ObjectId('6566664eb1d68ef7888c545b')
JobID: 3
JobDesc: "Cinematographer"
DSkillGroupID: 3
CompanyID: 5
_id: ObjectId('6566664eb1d68ef7888c545c')
JobID: 4
JobDesc: "Sound Designer"
DSkillGroupID: 4
CompanyID: 11

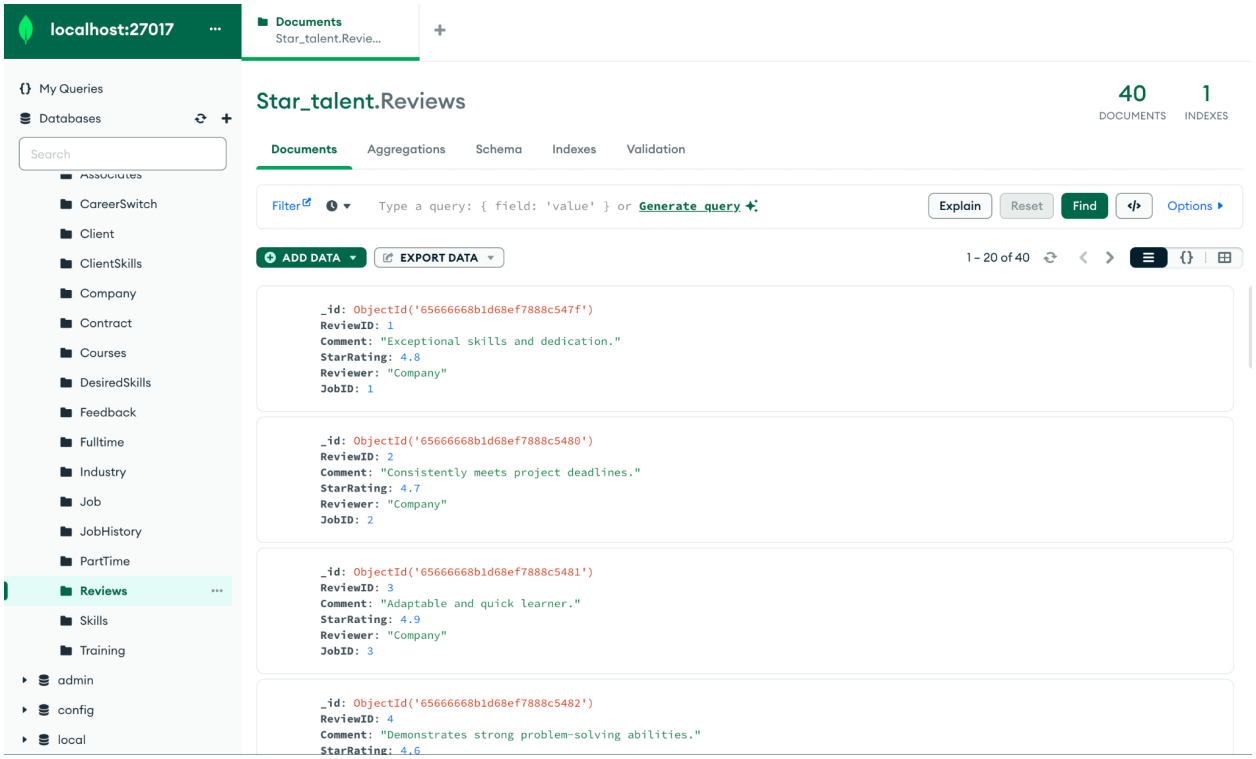
Company


localhost:27017
Documents
Star_talent.Comp...
My Queries
Databases
Search
CareerSwitch
Client
ClientSkills
Company
Contract
Courses
DesiredSkills
Feedback
Fulltime
Industry
Job
JobHistory
PartTime
Reviews
Skills
Training
admin
config
local
Star_talent.Company
30
DOCUMENTS
1
INDEXES
Documents
Aggregations
Schema
Indexes
Validation
Filter
Type a query: { field: 'value' } or Generate query
Explain
Reset
Find
Options
ADD DATA
EXPORT DATA
1 - 20 of 30
_id: ObjectId('65666620b1d68ef7888c538b')
CompanyID: 1
Name: "Star Media"
_id: ObjectId('65666620b1d68ef7888c538c')
CompanyID: 2
Name: "DreamWorks"
_id: ObjectId('65666620b1d68ef7888c538d')
CompanyID: 3
Name: "Infinity Films"
_id: ObjectId('65666620b1d68ef7888c538e')
CompanyID: 4
Name: "Galaxy Entertainment"
_id: ObjectId('65666620b1d68ef7888c538f')
CompanyID: 5
Name: "Epic Productions"
_id: ObjectId('65666620b1d68ef7888c5390')
CompanyID: 6

Courses



Reviews:



NoSQL Queries:

1. Write a NoSQL query to select all the clients who are assisted by agents with agent ID "2" and "4"

Query:

```
Star_talent> db.Agent. find( {AgentID : { $in: [2,4]}} )
```

Output:


```
[
  {
    _id: ObjectId('656665f2b1d68ef7888c52ae'),
    AgentID: 2,
    Name: 'Jane Smith',
    Address: '456 Oak St, Townsville',
    Phone: '555-5678',
    Email: 'jane.smith@email.com',
    Gender: 'Female',
    Age: 28
  },
  {
    _id: ObjectId('656665f2b1d68ef7888c52b0'),
    AgentID: 4,
    Name: 'Emily Davis',
    Address: '101 Cedar St, Hamletville',
    Phone: '555-3456',
    Email: 'emily.davis@email.com',
    Gender: 'Female',
    Age: 32
  }
]
```

2. Write a NoSQL query to select all clients whose contracts started before January 2022 (using aggregate function).

Query:

```
startalent> db.Client.aggregate([
...     {
...         $lookup: {
...             from: "Contract",
...             localField: "ClientID",
...             foreignField: "ClientID",
...             as: "contracts"
...         }
...     },
...     {
...         $unwind: "$contracts"
...     },
...     {
...         $match: {
...             "contracts.startDate": { $lt: ISODate("2022-01-01") }
...         }
...     },
...     {
...         $group: {
...             _id: "$ClientID",
...             ClientName: { $first: "$Name" }
...         }
...     }
... ])
```

Output:

```
[
  { _id: 33, ClientName: 'Giselle Fisher' },
  { _id: 28, ClientName: 'Benjamin Hayes' },
  { _id: 38, ClientName: 'Liam Murphy' },
  { _id: 3, ClientName: 'Charlie Davis' },
  { _id: 13, ClientName: 'Mia Turner' },
  { _id: 48, ClientName: 'Vincent Murphy' },
  { _id: 8, ClientName: 'Henry Anderson' },
  { _id: 18, ClientName: 'Robert Turner' }
]
```

3. Write a NoSQL query to select clients with a rating greater than 4.3 stars (using aggregate function).

```
startalent> db.Client.aggregate([
...     {
...         $lookup: {
...             from: "JobHistory",
...             localField: "JobHistID",
...             foreignField: "JobHistID",
...             as: "jobHistory"
...         }
...     },
...     {
...         $unwind: "$jobHistory"
...     },
...     {
...         $lookup: {
...             from: "Job",
...             localField: "jobHistory.JobID",
...             foreignField: "JobID",
...             as: "job"
...         }
...     },
...     {
...         $unwind: "$job"
...     },
...     {
...         $lookup: {
...             from: "Reviews",
...             localField: "job.JobID",
...             foreignField: "JobID",
...             as: "reviews"
...         }
...     },
...     {
...         $unwind: "$reviews"
...     },
...     {
...         $match: {
...             "reviews.StarRating": { $gt: 4.3 }
...         }
...     },
...     {
...         $group: {
...             _id: "$ClientID",
...             ClientName: { $first: "$Name" }
...         }
...     }
... ])
```

Output:

```
[
  { _id: 28, ClientName: 'Benjamin Hayes' },
  { _id: 33, ClientName: 'Giselle Fisher' },
  { _id: 26, ClientName: 'Zane Powell' },
  { _id: 44, ClientName: 'Ryan Turner' },
  { _id: 9, ClientName: 'Ivy Brown' },
  { _id: 16, ClientName: 'Peter Hayes' },
  { _id: 45, ClientName: 'Sophie Powell' },
  { _id: 31, ClientName: 'Eva Turner' },
  { _id: 29, ClientName: 'Catherine Brown' },
  { _id: 36, ClientName: 'James Powell' },
  { _id: 6, ClientName: 'Frank Turner' },
  { _id: 22, ClientName: 'Victor Turner' },
  { _id: 43, ClientName: 'Quinn Hayes' },
  { _id: 15, ClientName: 'Olivia Ward' },
  { _id: 38, ClientName: 'Liam Murphy' },
  { _id: 40, ClientName: 'Noah Fisher' },
  { _id: 20, ClientName: 'Tom Murphy' },
  { _id: 19, ClientName: 'Samantha Brooks' },
  { _id: 7, ClientName: 'Grace Taylor' },
  { _id: 17, ClientName: 'Quinn Powell' }
]
Type "it" for more
startalent> it
[
  { _id: 8, ClientName: 'Henry Anderson' },
  { _id: 42, ClientName: 'Preston Murphy' },
  { _id: 30, ClientName: 'Dylan Murphy' },
  { _id: 13, ClientName: 'Mia Turner' },
  { _id: 48, ClientName: 'Vincent Murphy' },
  { _id: 50, ClientName: 'Xavier Turner' },
  { _id: 49, ClientName: 'Willa Fisher' },
  { _id: 47, ClientName: 'Uma Turner' },
  { _id: 11, ClientName: 'Karen Green' },
  { _id: 25, ClientName: 'Yara Fisher' },
  { _id: 12, ClientName: 'Leo Reed' },
  { _id: 2, ClientName: 'Bob Smith' },
  { _id: 21, ClientName: 'Ursula Ross' },
  { _id: 35, ClientName: 'Isabel Hayes' },
  { _id: 39, ClientName: 'Megan Hayes' },
  { _id: 34, ClientName: 'Harrison Turner' },
  { _id: 4, ClientName: 'David Wilson' },
  { _id: 1, ClientName: 'Alice Johnson' },
  { _id: 24, ClientName: 'Xander Hayes' }
]
```

4. Write a NoSQL query to find the average age of clients per company (using MapReduce).

```
Star_talent> db.runCommand({
...   mapReduce: "Client",
...   map: function() {
...     emit(this.CompanyID, { age: this.Age, count: 1 });
...   },
...   reduce: function(key, values) {
...     var result = { age: 0, count: 0 };
...     values.forEach(function(value) {
...       result.age += value.age;
...       result.count += value.count;
...     });
...     return result;
...   },
...   finalize: function(key, reducedValue) {
...     reducedValue.average_age = reducedValue.age / reducedValue.count
...     return { average_age: reducedValue.average_age };
...   },
...   out: { inline: 1 }
... });
```

Output:

```
{
  results: [ { _id: null, value: { average_age: 33.5 } } ],
  ok: 1
}
```

5. Write a NoSQL query to group all the clients by gender and count (using MapReduce).

```
Star_talent> db.runCommand({
...   mapReduce: "Client",
...   map: function() {
...     emit(this.Gender, 1);
...   },
...   reduce: function(key, values) {
...     return Array.sum(values);
...   },
...   out: { inline: 1 }
... });
```

Output

```
{
  results: [ { _id: 'Male', value: 26 }, { _id: 'Female', value: 24 } ],
  ok: 1
}
```