

## Unit 3 PS2 NoSQL

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CS120 Summer 2023

The screenshot displays the MongoDB Atlas web interface. The top navigation bar includes the Atlas logo, a 'Student' user profile, and links for 'Access Manager' and 'Billing'. The main interface is divided into a left sidebar with navigation options like 'DEPLOYMENT', 'Database', 'Data Lake', 'SERVICES', and 'SECURITY'. The central panel shows the 'cs120\_songs.songs' collection, with a search bar and a 'Filter' button. Below the search bar, three document entries are displayed, each with a unique ObjectId and fields for title, artist, genre, and year.

**cs120\_songs.songs**

STORAGE SIZE: 36KB LOGICAL DATA SIZE: 108B TOTAL DOCUMENTS: 10 INDEXES TOTAL SIZE: 36KB

**Find** Indexes Schema Anti-Patterns Aggregation Search Indexes

**Filter** Type a query: { field: 'value' } **Reset** **Apply** **More Options**

**INSERT DOCUMENT**

**Document 1:**

```
{
  "_id": ObjectId("64ace08d6cf4745c899e5bec"),
  "title": "Galway Girl",
  "artist": "Ed Sheeran",
  "genre": "Pop",
  "year": 2017
}
```

**Document 2:**

```
{
  "_id": ObjectId("64ace0266cf4745c899e6fab"),
  "title": "Massachusetts",
  "artist": "The Bee Gees",
  "genre": "Pop",
  "year": 1967
}
```

**Document 3:**

```
{
  "_id": ObjectId("64ace0396cf4745c899e7fcb"),
  "title": "Back In Black",
  "artist": "AC/DC",
  "genre": Array
    0: "Hard Rock"
    1: "Heavy Metal"
  "year": 1980
}
```

System Status: All Good

```
mongosh mongodb+srv://<c X + v
PS C:\Users\gavin> mongosh "mongodb+srv://cluster0.pjhpgiv.mongodb.net/" --apiVersion 1 --username kayratorvi
Enter password: *****
Current Mongosh Log ID: 64ace4403c16355d053b31da
Connecting to: mongodb+srv://<credentials>@cluster0.pjhpgiv.mongodb.net/?appName=mongosh+1.10.1
Using MongoDB: 6.0.6 (API Version 1)
Using Mongosh: 1.10.1

For mongosh info see: https://docs.mongodb.com/mongosh-shell/

Atlas atlas-1080uo-shard-0 [primary] test> use cs120_songs
switched to db cs120_songs
Atlas atlas-1080uo-shard-0 [primary] cs120_songs>
```

## 2.1

```
mongosh mongodb+srv://<c X + v
PS C:\Users\gavin> mongosh "mongodb+srv://cluster0.pjhpgiv.mongodb.net/" --apiVersion 1 --username kayratorvi
Enter password: *****
Current Mongosh Log ID: 64ace4403c16355d053b31da
Connecting to: mongodb+srv://<credentials>@cluster0.pjhpgiv.mongodb.net/?appName=mongosh+1.10.1
Using MongoDB: 6.0.6 (API Version 1)
Using Mongosh: 1.10.1

For mongosh info see: https://docs.mongodb.com/mongosh-shell/

Atlas atlas-1080uo-shard-0 [primary] test> use cs120_songs
switched to db cs120_songs
Atlas atlas-1080uo-shard-0 [primary] cs120_songs> show collections
songs
Atlas atlas-1080uo-shard-0 [primary] cs120_songs>
```

## 2.2

```
mongosh mongodb+srv://<c x + v
Atlas atlas-1080uo-shard-0 [primary] cs120_songs> db.songs.find({}, {title: 1, _id: 0})
[
  { title: 'Perfect' },
  { title: 'Ends of the Earth' },
  { title: 'The Change' },
  { title: 'Galway Girl' },
  { title: 'Massachusetts' },
  { title: 'Back In Black' },
  { title: 'Give Me the Future' },
  { title: 'Nobody's Home' },
  { title: 'Simple Song' },
  { title: 'Scream' }
]
Atlas atlas-1080uo-shard-0 [primary] cs120_songs>
```

## 2.3

```
mongosh mongodb+srv://<c x + v
{ title: 'Galway Girl' },
{ title: 'Massachusetts' },
{ title: 'Back In Black' },
{ title: 'Give Me the Future' },
{ title: 'Nobody's Home' },
{ title: 'Simple Song' },
{ title: 'Scream' }
]
Atlas atlas-1080uo-shard-0 [primary] cs120_songs> db.songs.find({}, {title: 1, _id: 0, genre: 1, artist: 1})
[
  { title: 'Perfect', artist: 'Ed Sheeran', genre: 'Pop' },
  { title: 'Ends of the Earth', artist: 'Lord Huron', genre: 'Rock' },
  { title: 'The Change', artist: 'Evanescence', genre: 'Rock' },
  { title: 'Galway Girl', artist: 'Ed Sheeran', genre: 'Pop' },
  { title: 'Massachusetts', artist: 'The Bee Gees', genre: 'Pop' },
  {
    title: 'Back In Black',
    artist: 'AC/DC',
    genre: [ 'Hard Rock', 'Heavy Metal' ]
  },
  {
    title: 'Give Me the Future',
    artist: 'Bastille',
    genre: [ 'Alternative', 'Dance Pop' ]
  },
  { title: 'Nobody's Home', artist: 'Avril Lavigne', genre: 'Pop' },
  { title: 'Simple Song', artist: 'The Shins', genre: 'Alternative' },
  { title: 'Scream', artist: 'Halestorm', genre: 'Hard Rock' }
]
Atlas atlas-1080uo-shard-0 [primary] cs120_songs> |
```

## 2.4

```
Atlas atlas-1088uo-shard-0 [primary] cs120_songs> db.songs.aggregate([{$unwind: "$genre"},{$group: { _id : "$genre", titles: { $firstN: { input: "$title", n: 100}}}}])
[
  { _id: 'Rock', titles: [ 'Ends of the Earth', 'The Change' ] },
  {
    _id: 'Alternative',
    titles: [ 'Give Me the Future', 'Simple Song' ]
  },
  { _id: 'Hard Rock', titles: [ 'Back In Black', 'Scream' ] },
  {
    _id: 'Pop',
    titles: [ 'Perfect', 'Galway Girl', 'Massachusetts', 'Nobody's Home' ]
  },
  { _id: 'Dance Pop', titles: [ 'Give Me the Future' ] },
  { _id: 'Heavy Metal', titles: [ 'Back In Black' ] }
]
Atlas atlas-1088uo-shard-0 [primary] cs120_songs>
```

2.5