

Sprint 9

Tasca S9.01. Consultes amb MongoDB

Treballarem amb una base de dades que conté col·leccions relacionades amb una aplicació d'entreteniment cinematogràfic:

users: Emmagatzema informació d'usuaris/es, incloent-hi noms, emails i contrasenyes xifrades.

theatres: Conté dades de cinemes, com ID, ubicació (direcció i coordenades geogràfiques).

sessions: Guarda sessions d'usuari, incloent-hi ID d'usuari i tokens JWT per a l'autenticació.

movies: Inclou detalls de pel·lícules, com a trama, gèneres, durada, elenc, comentaris, any de llançament, directors, classificació i premis.

comments: Emmagatzema comentaris d'usuaris/es sobre pel·lícules, amb informació de l'autor/a del comentari, ID de la pel·lícula, text del comentari i la data.

Duràs a terme algunes consultes que et demana el client/a, el qual està mesurant si seràs capaç o no de fer-te càrrec de la part analítica del projecte vinculat amb la seva base de dades.

Sprint 9

Nivell 1

Exercici 1

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Exercici 3

Nivell 2

Exercici 1

Exercici 2

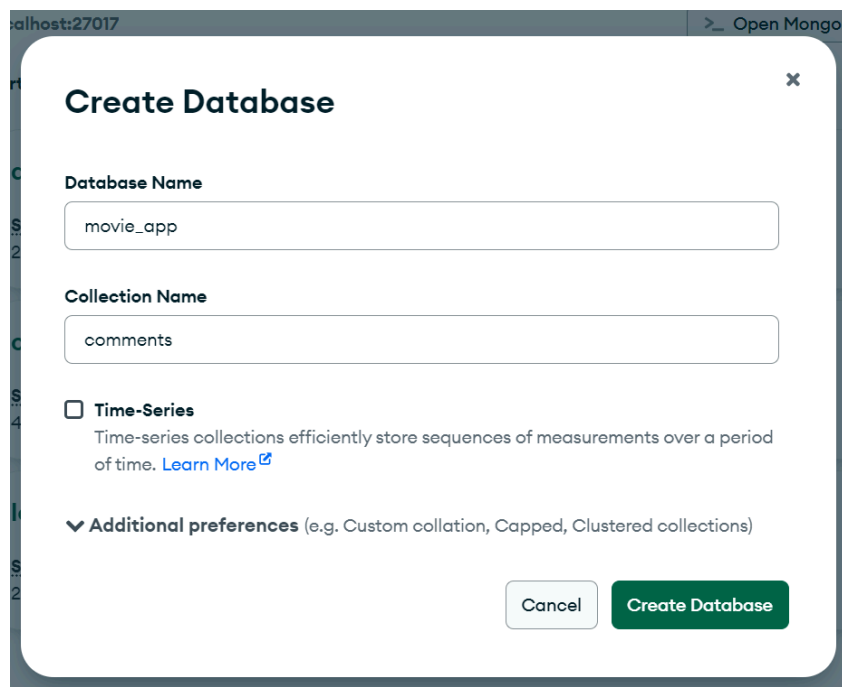
Nivell 3

Exercici 1

Exercici 2

Nivell 1

Crea una base de dades amb MongoDB utilitzant com a col·leccions els arxius adjunts.



A screenshot of the MongoDB 'Create Database' dialog box. The dialog has a title bar with 'localhost:27017' and 'Open MongoDB'. The main title is 'Create Database'. It contains two input fields: 'Database Name' with the value 'movie_app' and 'Collection Name' with the value 'comments'. Below these is a checkbox for 'Time-Series' which is unchecked, with a description: 'Time-series collections efficiently store sequences of measurements over a period of time. [Learn More](#)'. At the bottom, there is a section for 'Additional preferences' (e.g. Custom collation, Capped, Clustered collections) which is currently collapsed. At the bottom right are two buttons: 'Cancel' and 'Create Database'.

localhost:27017 > Open MongoDB

Create Database

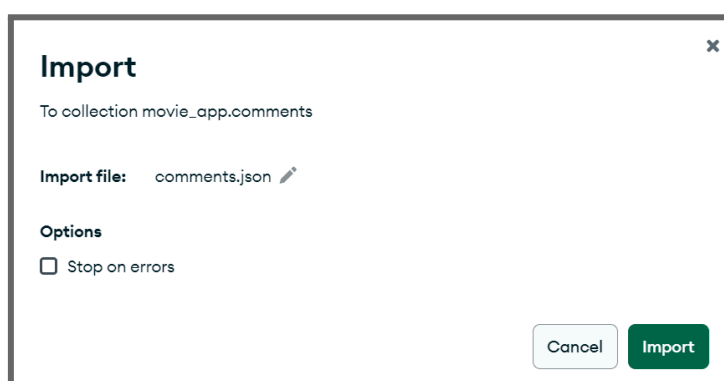
Database Name
movie_app

Collection Name
comments

☐ Time-Series
Time-series collections efficiently store sequences of measurements over a period of time. [Learn More](#)

▼ Additional preferences (e.g. Custom collation, Capped, Clustered collections)

Cancel Create Database



A screenshot of the MongoDB 'Import' dialog box. The dialog has a title bar with a close button. The title is 'Import'. It shows the target collection as 'To collection movie_app.comments'. The 'Import file' is 'comments.json' with an edit icon. Under the 'Options' section, there is an unchecked checkbox for 'Stop on errors'. At the bottom right are two buttons: 'Cancel' and 'Import'.

Import

To collection movie_app.comments

Import file: comments.json

Options

☐ Stop on errors

Cancel Import

Se crea la base de datos y luego se importan cada una de las colecciones en formato JSON. Así queda la base de datos *movie_app*:

The screenshot shows the MongoDB Compass interface for a database named 'movie_app' on 'localhost:27017'. The left sidebar shows the database structure with collections: comments, movies, sessions, theatres, and users. The main panel displays details for four collections: comments, movies, sessions, and theatres. Each collection's details are shown in a card format with the following metrics:

Collection	Storage size	Documents	Avg. document size	Indexes	Total index size
comments	6.93 MB	50 K	284.00 B	1	524.29 kB
movies	21.55 MB	24 K	1.60 kB	1	364.54 kB
sessions	20.48 kB	1	540.00 B	1	20.48 kB
theatres	147.46 kB	1.6 K	223.00 B	1	32.77 kB

Exercici 1

Mostra els 2 primers comentaris que hi ha en la base de dades.

Consulta:

```
db.comments.find().limit(2)
```

```

comments  mongosh: localhos... x +
>_MONGOSH
> use movie_app
< switched to db movie_app
> db.comments.find().limit(2)
< {
  _id: ObjectId('5a9427648b0beeb69579cc'),
  name: 'Andrea Le',
  email: 'andrea_le@fakegmail.com',
  movie_id: ObjectId('573a1390f29313caabcd418c'),
  text: 'Rem officiis eaque repellendus amet eos doloribus. Porro dolor voluptatum voluptates neque culpa molestias. Voli
  date: 2012-03-26T23:20:16.000Z
}
{
  _id: ObjectId('5a9427648b0beeb69579cf'),
  name: 'Greg Powell',
  email: 'greg_powell@fakegmail.com',
  movie_id: ObjectId('573a1390f29313caabcd41b1'),
  text: 'Tenetur dolorum molestiae ea. Eligendi praesentium unde quod porro. Commodi nisi sit placeat rerum vero cupidit
  date: 1987-02-10T00:29:36.000Z
}
movie_app>

```

Quants usuaris tenim registrats?

Consulta:

```
db.users.countDocuments()
```

```

> db.users.countDocuments()
< 185
movie_app>

```

Quants cinemes hi ha en l'estat de Califòrnia?

Consulta:

```
db.theatres.countDocuments({"location.address.state": "CA"})
```

```

> db.theatres.countDocuments({"location.address.state": "CA"})
< 169
movie_app> |

```

Quin va ser el primer usuari/ària en registrar-se?

Como en MongoDB el campo `_id` contiene la fecha de creación del documento, se ordena por este campo y se limita a 1 la búsqueda.

Consulta:

```
db.users.find().sort({_id: 1}).limit(1)
```

```
> db.users.find().sort({_id: 1}).limit(1)
< {
  _id: ObjectId('59b99db4cfa9a34dcd7885b6'),
  name: 'Ned Stark',
  email: 'sean_bean@gameofthron.es',
  password: '$2b$12$UREFwsRUoyF0CRqGNK0Lz00HM/jLhgUCNNIJ9RJAqMUQ74cr1J1Vu'
}
movie_app> |
```

Quantes pel·lícules de comèdia hi ha en la nostra base de dades?

Consulta:

```
db.movies.countDocuments({"type": "movie", "genres": "Comedy"})
```

```
> use movie_app
< switched to db movie_app
> db.movies.countDocuments({"type": "movie", "genres": "Comedy"})
< 7002
```

Exercici 2

Mostra'm tots els documents de les pel·lícules produïdes en 1932, però que el gènere sigui drama o estiguin en francès.

Consulta:

```
db.movies.find(
  {$and:[{"year": 1932},
          {"type": "movie"}],
  {$or:[{"genres": "Drama"}, {"languages": "French"}]})
```

```
> db.movies.find(
  {$and:[{"year": 1932},
          {"type": "movie"}],
  {$or:[{"genres": "Drama"}, {"languages": "French"}]})
< {
  _id: ObjectId('573a1391f29313caabcd9458'),
  plot: 'A young artist draws a face at a canvas on his easel. Suddenly the mouth on the drawing comes into life and sta
  runtime: 55,
  rated: 'UNRATED',
  cast: [
    'Enrique Rivero',
    'Elizabeth Lee Miller',
    'Pauline Carton',
    'Odette Talazac'
  ],
  num_mflix_comments: 1,
  poster: 'https://m.media-amazon.com/images/M/MV5BYWY30DE5ZWEtYjlmYi00NjA4LTk4ZWYtMzBhZDE5MjY0YTUxXkEyXkFqcGdeQXVyNzI4Ml
  title: 'The Blood of a Poet',
  lastupdated: '2015-09-16 13:13:05.537000000',
  languages: [
    'French'
  ],
}
```

En Mongosh pueden verse los documentos enteros pero es difícil hacer una captura de pantalla que los incluya todos. Se hizo un conteo que da un total de 18 películas con las características solicitadas.

```
> db.movies.find(
  {$and:[{"year": 1932},
          {"type": "movie"}],
  {$or:[{"genres": "Drama"}, {"languages": "French"}]})
  .count()
< 18
movie_app> |
```

Exercici 3

Mostra'm tots els documents de pel·lícules estatunidenques que tinguin entre 5 i 9 premis que van ser produïdes entre 2012 i 2014.

Consulta:

```
db.movies.find(
  {"type": "movie",
   "countries": "USA",
   "awards.wins": {$gte: 5, $lte: 9},
   "year": {$gte: 2012, $lte: 2014}},
  {title: 1})
```

Listado de los primeros documentos de la búsqueda por título de la película. *Type “it” for more* al final de la consulta indica que hay más resultados que pueden verse escribiendo “it” en el terminal.

```
> db.movies.find(
  {"type": "movie",
   "countries": "USA",
   "awards.wins": {$gte: 5, $lte: 9},
   "year": {$gte: 2012, $lte: 2014}},
  {title: 1})
< {
  _id: ObjectId('573a13acf29313caabd29366'),
  title: 'The Secret Life of Walter Mitty'
}
{
  _id: ObjectId('573a13b5f29313caabd45772'),
  title: 'The Croods'
}
{
  _id: ObjectId('573a13b9f29313caabd4dd15'),
  title: 'The Book Thief'
}
{
  _id: ObjectId('573a13b9f29313caabd4de39'),
  title: 'World War Z'
}
```

```
{
  _id: ObjectId('573a13b9f29313caabd4f21f'),
  title: 'Godzilla'
}
{
  _id: ObjectId('573a13bbf29313caabd5271d'),
  title: 'Mr Hockey: The Gordie Howe Story'
}
{
  _id: ObjectId('573a13bcf29313caabd57341'),
  title: 'Hitchcock'
}
{
  _id: ObjectId('573a13bef29313caabd5d9c2'),
  title: 'Lone Survivor'
}
{
  _id: ObjectId('573a13clf29313caabd63af2'),
  title: 'One Chance'
}
```

```
{
  _id: ObjectId('573a13clf29313caabd648d3'),
  title: 'The Lone Ranger'
}
{
  _id: ObjectId('573a13clf29313caabd64b93'),
  title: 'The World's End'
}
{
  _id: ObjectId('573a13clf29313caabd65df8'),
  title: 'That's My Boy'
}
{
  _id: ObjectId('573a13clf29313caabd65e49'),
  title: '21 Jump Street'
}
{
  _id: ObjectId('573a13c2f29313caabd66592'),
  title: 'Mariachi Gringo'
}
```



```

    _id: ObjectId('573a13c3f29313caabd6a560'),
    title: 'Kill Your Darlings'
  }
  {
    _id: ObjectId('573a13c3f29313caabd6b522'),
    title: 'The Lucky One'
  }
  {
    _id: ObjectId('573a13c5f29313caabd6fcf7'),
    title: 'Particle Fever'
  }
  {
    _id: ObjectId('573a13c5f29313caabd714a6'),
    title: 'Star Trek Into Darkness'
  }
  {
    _id: ObjectId('573a13c7f29313caabd742df'),
    title: 'Prometheus'
  }
  {
    _id: ObjectId('573a13c7f29313caabd7654a'),
    title: 'Four Assassins'
  }
}

```

Primer documento, para verificar que sí se cumplen las condiciones:

```

{
  _id: ObjectId('573a13acf29313caabd29366'),
  fullplot: "The manager of the negative assets sector of Life magazine, Walter Mitty, has been working for sixteen years for the magazine and has a tedious life, not going anywhere but from his home to his job and vice-versa. He is an escapist, daydreaming into a world of fantasy many times a day. Walter has a crush on the recently hired Cheryl Melhoff but he is too shy to invite her on a date and he is trying to contact her via online dating. The magazine is preparing to release its last printed edition and the loathsome manager of transition Ted Hendricks is preparing an inevitable downsizing over the next few days. Walter has been the liaison between the magazine and the mysterious independent photographer Sean O'Connell who has sent to him a package of negatives and a wallet as a gift for his work. Sean also suggests to the senior management the use of negative 25 for the cover of the last edition. However, Walter cannot find the negative that is missing. Walter has no means to contact Sean and finds a clue that he might be in Greenland. He decides to travel to Greenland to track Sean down in the beginning of an unbelievable adventure.",
  imdb: {
    rating: 7.4,

```

```

    votes: 211230,
    id: 359950
  },
  year: 2013,
  plot: 'When his job along with that of his co-worker are threatened, Walter takes
action in the real world embarking on a global journey that turns into an adventure
more extraordinary than anything he could have ever imagined.',
  genres: [
    'Adventure',
    'Comedy',
    'Drama'
  ],
  rated: 'PG',
  metacritic: 54,
  title: 'The Secret Life of Walter Mitty',
  lastupdated: '2015-08-31 00:10:51.747000000',
  languages: [
    'English',
    'Spanish',
    'Icelandic'
  ],
  writers: [
    'Steve Conrad (screenplay)',
    'Steve Conrad (screen story by)',
    'James Thurber (based on the short story by)'
  ],
  type: 'movie',
  tomatoes: {
    website: 'http://WalterMitty.com',
    viewer: {
      rating: 3.7,
      numReviews: 77663,
      meter: 70
    },
    dvd: 2014-04-15T00:00:00.000Z,
    critic: {
      rating: 6,
      numReviews: 177,
      meter: 50
    },
    boxOffice: '$58.2M',
    consensus: "It doesn't lack for ambition, but The Secret Life of Walter Mitty
fails to back up its grand designs with enough substance to anchor the spectacle.",
    rotten: 88,
    production: '20th Century Fox',
    lastUpdated: 2015-08-20T18:09:50.000Z,
    fresh: 89
  },
  poster:
'https://m.media-amazon.com/images/M/MV5BODYwNDYxNDk1N15BM15BanBnXkFtZTgwOTAwMTk2MD
E@._V1_SY1000_SX677_AL_.jpg',
  num_mflix_comments: 1,

```

```
released: 2013-12-25T00:00:00.000Z,  
awards: {  
  wins: 6,  
  nominations: 13,  
  text: '6 wins & 13 nominations.'  
},  
countries: [  
  'USA',  
  'Canada'  
],  
cast: [  
  'Ben Stiller',  
  'Kristen Wiig',  
  'Jon Daly',  
  'Kathryn Hahn'  
],  
directors: [  
  'Ben Stiller'  
],  
runtime: 114  
}
```

Nivell 2

Exercici 1

Compte quants comentaris escriu un usuari/ària que utilitza "GAMEOFTHRON.ES" com a domini de correu electrònic.

Consulta:

```
db.comments.countDocuments( {email: {$regex: /gameofthron.es/}})
```

```
> db.comments.countDocuments( {email: {$regex: /gameofthron.es/}})
< 22841
movie_app> |
```

Exercici 2

Quants cinemes hi ha en cada codi postal situats dins de l'estat Washington D. C. (DC)?

Consulta:

```
db.theatres.aggregate([
  {$match: {"location.address.state": "DC"}},
  {$group: {_id: "$location.address.zipcode",
            count: {$sum: 1}
          }
        })
```

```
> db.theatres.aggregate([
  {$match: {"location.address.state": "DC"}},
  {$group: {_id: "$location.address.zipcode",
            count: {$sum: 1}
          }
        })
< {
  _id: '20016',
  count: 1
}
{
  _id: '20010',
  count: 1
}
{
  _id: '20002',
  count: 1
}
movie_app>
```

Nivell 3

Exercici 1

Troba totes les pel·lícules dirigides per John Landis amb una puntuació IMDb (Internet Movie Database) d'entre 7,5 i 8.

Consulta:

```
db.movies.find(  
  {"type": "movie",  
   "directors": "John Landis",  
   "imdb.rating": {$gte: 7.5, $lte: 8}},  
  {title: 1, directors: 1, "imdb.rating": 1})
```

```
> db.movies.find(
  {"type": "movie",
   "directors": "John Landis",
   "imdb.rating": {$gte: 7.5, $lte: 8}},
  {title: 1, directors: 1, "imdb.rating": 1})
< {
  _id: ObjectId('573a1397f29313caabce6d94'),
  imdb: {
    rating: 7.6
  },
  title: 'Animal House',
  directors: [
    'John Landis'
  ]
}
```

```
{
  _id: ObjectId('573a1397f29313caabce76f7'),
  title: 'The Blues Brothers',
  directors: [
    'John Landis'
  ],
  imdb: {
    rating: 7.9
  }
}
{
  _id: ObjectId('573a1397f29313caabce7d06'),
  imdb: {
    rating: 7.6
  },
  title: 'An American Werewolf in London',
  directors: [
    'John Landis'
  ]
}
```

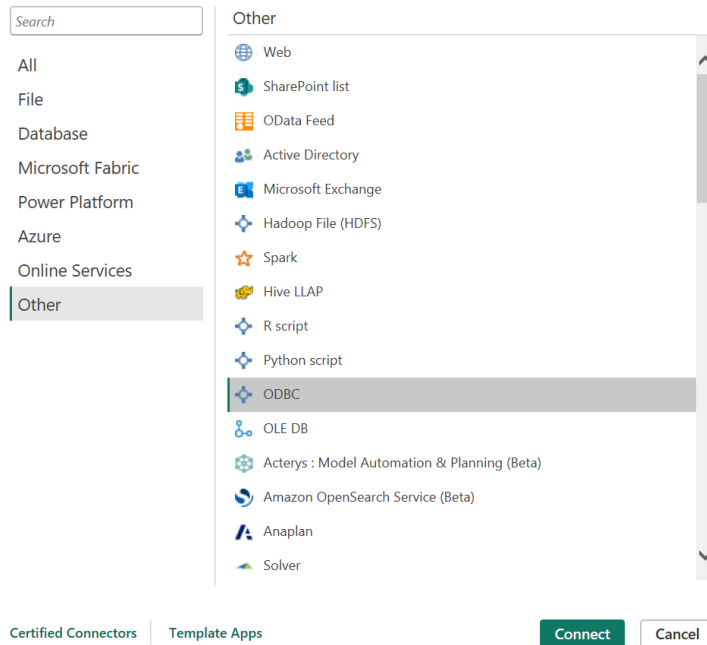
```
{
  _id: ObjectId('573a1398f29313caabce8deb'),
  title: 'Trading Places',
  directors: [
    'John Landis'
  ],
  imdb: {
    rating: 7.5
  }
}
movie_app>
```

Exercici 2

Mostra en un mapa la ubicació de tots els teatres de la base de dades.

Tras instalar el BI Connector de MongoDB, se carga en PowerBI la colección *theatres* de MongoDB.

Get Data



Navigator

Display Options ▾

- ODBC (dsn=MongoDB source) [3]
 - INFORMATION_SCHEMA
 - movie_app [12]
 - ☐ comments
 - ☐ movies
 - ☐ movies_cast
 - ☐ movies_countries
 - ☐ movies_directors
 - ☐ movies_genres
 - ☐ movies_languages
 - ☐ movies_writers
 - ☐ sessions
 - ☒ theatres
 - ☒ theatres_location_geo_coordinates
 - ☐ users
 - mysql

theatres_location_geo_coordinates

_id	location.geo.coordinates	location.geo.coordinates_idx	theatres
59a47286cfa9a3a73e51e72c	-93.24565	0	Value
59a47286cfa9a3a73e51e72c	44.85466	1	Value
59a47286cfa9a3a73e51e72d	-76.512016	0	Value
59a47286cfa9a3a73e51e72d	38.29697	1	Value
59a47286cfa9a3a73e51e72e	-121.96328	0	Value
59a47286cfa9a3a73e51e72e	38.367649	1	Value
59a47286cfa9a3a73e51e72f	-86.642662	0	Value
59a47286cfa9a3a73e51e72f	33.605438	1	Value
59a47286cfa9a3a73e51e730	-111.89966	0	Value
59a47286cfa9a3a73e51e730	33.430729	1	Value
59a47286cfa9a3a73e51e731	-85.76461	0	Value
59a47286cfa9a3a73e51e731	38.327175	1	Value
59a47286cfa9a3a73e51e732	-119.7412	0	Value
59a47286cfa9a3a73e51e732	39.579536	1	Value
59a47286cfa9a3a73e51e733	-100.81213	0	Value
59a47286cfa9a3a73e51e733	46.829876	1	Value
59a47286cfa9a3a73e51e734	-118.11414	0	Value
59a47286cfa9a3a73e51e734	33.760353	1	Value
59a47286cfa9a3a73e51e735	-77.459908	0	Value
59a47286cfa9a3a73e51e735	37.667957	1	Value
59a47286cfa9a3a73e51e736	-100.50107	0	Value
59a47286cfa9a3a73e51e736	31.435648	1	Value
59a47286cfa9a3a73e51e737	-117.83625	0	Value

Select Related Tables

Load Transform Data Cancel

Se transforman los datos, ya que las coordenadas estaban en una subtabla y deben separarse las columnas de latitud (0) y longitud (1). Esto se logra creando columnas condicionales y luego eliminando los valores nulos.

Add Conditional Column

Add a conditional column that is computed from the other columns or values.

New column name

Column Name	Operator	Value	Output
If <input type="text" value="location.geo.coor..."/>	<input type="text" value="equals"/>	<input type="text" value="ABC 123"/> 0	Then <input type="text" value="location.geo.coordinates"/> ...

Else

Query Settings

Query: `= Table.RemoveColumns("#Removed Duplicates",{"theatres"})`

	ABC 123	latitud	longitud
1	59a47286cfa9a3a73e51e72c	-93.24565	44.85466
2	59a47286cfa9a3a73e51e72d	-76.512016	38.29697
3	59a47286cfa9a3a73e51e72e	-121.96328	38.367649
4	59a47286cfa9a3a73e51e72f	-86.642662	33.605438
5	59a47286cfa9a3a73e51e730	-111.89966	33.430729
6	59a47286cfa9a3a73e51e731	-85.76461	38.327175
7	59a47286cfa9a3a73e51e732	-119.7412	39.579536
8	59a47286cfa9a3a73e51e733	-100.81213	46.829876
9	59a47286cfa9a3a73e51e734	-118.11414	33.760353
10	59a47286cfa9a3a73e51e735	-77.459908	37.667957
11	59a47286cfa9a3a73e51e736	-100.50107	31.435648
12	59a47286cfa9a3a73e51e737	-117.83625	34.11612
13	59a47286cfa9a3a73e51e738	-78.382912	40.490524
14	59a47286cfa9a3a73e51e739	-118.3960826	33.9051385
15	59a47286cfa9a3a73e51e73a	-121.65946	36.715809
16	59a47286cfa9a3a73e51e73b	-117.674814	33.590599
17	59a47286cfa9a3a73e51e73c	-122.51875	37.966579
18	59a47286cfa9a3a73e51e73d	-116.28111	33.709164
19	59a47286cfa9a3a73e51e73e	-72.583824	41.998211
20	59a47286cfa9a3a73e51e73f	-96.608055	33.685692
21	59a47286cfa9a3a73e51e740	-77.532104	39.098255

Query Settings

PROPERTIES

Name

All Properties

APPLIED STEPS

- Source
- Navigation
- Added Conditional Column
- Added Conditional Column1
- Removed Columns
- Reordered Columns
- Filled Up
- Removed Duplicates
- ☒ Removed Columns1

Se crea un elemento visual de mapa con las coordenadas de la base de datos.

