uc3m | Universidad **Carlos III** de Madrid

_____

OpenCourseWare

Database

Lourdes Moreno López

Paloma Martínez Fernández

José Luis Martínez Fernández

Rodrigo Alarcón García

_____

Project 5 (MongoDB (3.2))

Statement

Exercise 1:

It is a MongoDB database of a novel catalogue in which novels with their writers and comments are published.

- Each writer has a name, a short biography and may have a date of birth.
- Concerning the novels written by writers, each novel has a title, writing genre, year, publisher, country, and summary. It may have awards. The awards have a name, organization and year.
- In addition, each novel post can receive comments, registering the written comment, a score from 1 to 10, and the date and time it was made.

The objective of this database is to store and retrieve information about novels and writers about their characteristics.

Do the following:

1. In order to describe the design of the scheme, explain some documents of the JSON.
2. Make inserts in the database such that when making the following queries, results are obtained.
3. Make the following statements:
   3.1. Retrieve all novels from the writer with the name "Juan Gómez-Jurado".
   3.2. Retrieve titles of the novels con writing genre de "crime novel".
   3.3. Retrieve the comments of the novel "Loba Negra".
   3.4. Retrieve the title and award name of the novels that have received awards in 2020.
   3.5. Retrieve the title and summary of the novels that have been written by the writter "Dolores Redondo" with a score greater than 8.

Exercise 2:

In the project, you will use the zipcodes collection (Source: https://www.mongodb.com/docs/manual/tutorial/aggregation-zip-code-data-set/). This collection is available at: media.mongodb.org/zips.json . Use mongoimport to load this data set into your mongod instance.

Each document in the zipcodes collection has the following form:

```
{
  "_id": "10280",
  "city": "NEW YORK",
  "state": "NY",
  "pop": 5574,
  "loc": [
    -74.016323,
    40.710537
  ]
}
```

- The **_id** field holds the zip code as a string.
- The **city** field holds the city name. A city can have more than one zip code associated with it, as different city sections can each have a different zip code.
- The **state** field holds the two-letter state abbreviation.
- The **pop** field holds the population.
- The **loc** field holds the location as a latitude-longitude pair.

1. Perform the following statements
    1.1. Retrieve all the zip codes in the city "WORCESTER". How many?
    1.2. Retrieve all zip codes whose name starts with "S"
    1.3. Retrieve all cities in the state " ME " that have a population between 3000 and 4000. How many?
    1.4. Update the populations to 10000 for those cities that have a population less than 10000.
    1.5. Retrieve the zip code, city and state whose latitude longitude pair is [-69.03169, 44.592674]

Requested information

- Exercise 1: schema description, insert statements, queries statements
- Exercise 2: import code, queries statements