Homework Mongo DB

CS 3200

Please take time to review the schema listed below. It is a collection of entities used to represent a virtual library management system. A library tracks the books of the library, the data associated with those books (author, publisher, book details) as well as the library users. There are authors, library users, and books. Here are the cardinality relationships:

- A user can have multiple addresses
- A book can have multiple publishers
- Publishers can have multiple addresses
- A book can have many notes
- A book can belong to multiple categories

Submission to Blackboard:

Please submit one zip file named lastnamefirstinitalhwk7.zip. It should contain 4 files, where all file names are prefixed with your last name and the first letter of your first name. One file should be named lastnamefirstinitalhwk7.pdf. This file should contain the answers to the 9 questions. The other 3 files are exports of the three containers you created. Use the following commands to export the containers:

mongoexport -d dbname -c user --type json --jsonArray --pretty --out yourlastnamefirstinitialuser.json

mongoexport -d dbname -c book --type json --jsonArray --pretty --out yourlastnamefirstinitialbook.json

mongoexport -d dbname -c author --type json --jsonArray --pretty –out yourlastnamefirstinitialauthor.json

AUTHOR

FIRST NAME

LAST NAME

DATE OF BIRTH

USER

USERNAME

PASSWORD

ACTIVE Y/N (Y = Active account, value of N = Not active account)

ADDRESS

STREET

CITY

ZIP

STATE

COUNTRY

DATE OF CREATION

BOOK

TITLE

AUTHOR

ISBN

PUBLISHER

NAME

DATE

CITY

ADDRESS

STREET

CITY

ZIP

STATE

COUNTRY

AVAILABLE Y/N (value of Y = Book is available for loan from the library, value of N = Book is not available for loan)

PAGES

SUMMARY

SUBJECTS

NOTES – users ate allowed to leave notes on the books they have borrowed

USER

NOTE BODY

LANGUAGE

Homework Problems:

1) Design a schema for this library management system for MongoDB using the data in the provided .csv files. Have MongoDB COLLECTIONS for AUTHOR, USER AND BOOK. Please feel free to change the schema. If you do modify the schema, provide a short justification for the modification. (10 points)

2) Insert the data provided into your MongoDB database (10 points)

Write queries for the following:

3) Retrieve all information on all of the books (All data associated with the books) (10 points)

4) Retrieve all information on the books where the author = 'Danielle Steel' (10 points)

5) Retrieve all information on the users where the user id creation is > 15 DEC 2014 and the city = 'Boston' (10 points)

6) Retrieve all information on books that have multiple publishers (10 points)

7) Retrieve all information on the books that have Notes (10 points)

8) Read the paper https://www.mongodb.com/customers/craigslist . State if you agree with the decision to use MongoDB for their data storage. Provide an argument to defend your decision. (15 points)

9) Which type of database (Relational or NoSQL) would be a good choice for the following database applications? Justify your answers by providing the type of data model you would use to support the application as well as other factors that guided your choice. Please limit the response to 2 or 3 sentences. (15 points)

a) Craigslist

b) Amazon.com's product recommendations database

c) Twitter posts

d) A traditional banking application