Tutorial: JSON and MongoDB

The online music database company ask you to design and prototype a JSON version of the database application. You are provided with a sample JSON document.

Download the following file from Luminus "`Luminus Files > Cases > Music Library`.

`library.json`.

The following is an excerpt of the JSON file "`library.json`".

```
[
{
        "title": "Bua Hati",
        "artists":
        {
                "artist":
                [
                        {
                                "name": "Anang Ashanty",
                                "country": "Indonesia"
                        },
                        {
                                "name": "Kris Dayanti",
                                "country": "Indonesia"
                        }
                ]
        },
        "songs": {
                "song":
                [
                        {
                                "title": "Timang-Timang",
                                "duration": "5:13"
                        },
                        {
                                "title": "Miliki Diriku",
                                "duration": "5:35"
                        },
                        {
                                "title": "Bua Hati",
                                "duration": "5:07"
                        }
                ]
        },
        "genres":
        {
                "genre":
                [
                        "Pop",
                        "World"
                ]
        },
        "year": "1998"
},
{
....
]
```

1. Install MongoDB Community Edition by following the installation manual in `https://docs.mongodb.com/manual/administration/install-community/`
2. Import the data into MongoDB by starting your MongoDB service. Use the following command to import the data to your MongoDB:

`mongoimport --db test --collection library --jsonArray library.json`

It should shows this status: `6 document(s) imported successfully`.

3. Try the following queries.

(a) Find the albums with the title "Separuh Jiwaku Pergi".

Solution: Similar SQL query:

```
SELECT * FROM library WHERE title = "Separuh Jiwaku Pergi";
```

```
db.library.find({'title' : 'Separuh Jiwaku Pergi'})
```

```
db.library.find({'title' : 'Separuh Jiwaku Pergi'}, {})
```

(b) Find the titles of the albums sorted by year in ascending order.

Solution: Similar SQL query:

```
SELECT title FROM library ORDER BY year ASC;
```

```
db.library.find({}, {'title' : 1}).sort( { year: 1 } )
```

(c) Find the titles of the songs from albums that are released after 1995.

Solution:

```
db.library.find({'year': {$gt: 1995}}, {'songs.song.title': 1})
```

(d) Find the names of the Indonesian artists interpreting songs published between 1998 and 2000.

Solution:

```
db.library.find({'year' : {$gte: 1998, $lte: 2000},
'artists.artist.country': 'Indonesia'}, {'artists.artist.name' : 1})
```

(e) Find the names of the artists from a country with a name containing the string "sia" interpreting songs published before 1998 or after 2000.

Solution:

```
db.library.find({ $or : [{'year' : {$lt: 1998}}, {'year' : { $gt: 2000}}],
'artists.artist.country': {$regex : /sia/}}, {'artists.artist.name' : 1})
```

(f) Find how many albums in the library were interpreted by Anang Ashanty.

Solution:

```
db.library.find( {'artists.artist.name': 'Anang Ashanty'}).count()
```

(g) Propose an interesting query. Write it both in English and with a MongoDB JavaScript function.

Solution: Propose an interesting query by looking at the link for the mapping between SQL queries and MongoDB JavaScript function callsby visiting Django Query Set API reference (`https://docs.djangoproject.com/en/3.0/ref/models/querysets/`).