NATIONAL INSTITUTE OF BUSINESS MANAGEMENT

SQL DATABASES FOR DATA SCIENCE
INDIVIDUAL ASSIGNMENT - 1

Answer **All** questions. Read the following and provide your answers.
Deadline: - Answer Script should upload to LMS by includin Cover page, all the steps and screenshots of NoSQL queries as PDF document

*The marks given in brackets are **indicative** of the weight given to each of the question*

Part A

Read the following scenario and provide answers to following questions.

Scenario:
MedicHome private limited plans to develop online application named "CallMyDoctor". This application helps patients to find the nearest medical centre to their homes. Developer team of the "CallMyDoctor" application decided to use the MongoDB as the database platform in this application. They plan to expand their operation in future by using this data to find data patterns. Assume you are the database developer of the MedicHome and complete following tasks to develop database relevant to the "CallMyDoctotor" application. Develop a documentation with screen shots of all your activities in the MongoDB server an upload as a pdf document.

Create a documentation covering answers for following questions. Make sure you take screenshots of your commands, output results and then document it with the relevant question.

1. Create database with the name of "callMyDoctor". Then create a collection named "patientDetails" and insert one record. Use the following sample format to create key-value pairs in your "patentDetails" collection. **(Marks 04)**

```
({"name":"Nimal Shantha",
"birthday":new Date("Dec 26,2013"),
"address": {
    "house no": 34,
    "street":"Colombo Road",
    "town":"Kandy",
    "postCode": 20000
},
"gender":"Male",
"maritalStatus":"Single",
"medicalHistory": ["hypertension","Cholesterol"],
"heightInCentimeter":175,
"weightInKilograms":72,
"contactNo":078231935,
"email": "nimal@gmail.com"
})
```

2. Using "insertMany()" command, input ten records to "patientDetails" collection. **(Marks 10)**
3. After inserting data, update all patients with "covidVaccinated" status. It can be either "true" or "false". **(Marks 04)**

example output:

```
> db.patientDetails.find().pretty()
{
        "_id" : ObjectId("61c993dc35bace87df1bbcd9"),
        "name" : "Nimal Shantha",
        "birthday" : ISODate("2013-12-25T18:30:00Z"),
        "address" : {
                "house no" : 34,
                "street" : "Colombo Road",
                "town" : "Kandy",
                "postCode" : 20000
        },
        "gender" : "Male",
        "maritalStatus" : "Single",
        "medicalHistory" : [
                "hypertension",
                "Cholesterol"
        ],
        "heightInCentimeter" : 175,
        "weightInKilograms" : 72,
        "contactNo" : 78231935,
        "email" : "nimal@gmail.com",
        "covidVaccinated" : true
}
>
```

4. Find all patients, who are over 100 kg in weight. **(Marks 04)**
5. Delete all the records where " covidVaccinated" is false. **(Marks 04)**

Part B

Use the attached data set. This data set is taken from "kaggle" site, which related to world university Ranking. Complete the following tasks using given data set and put the screenshots of results in your documentation.

1. Import the data set into to "uniRank" collection in "uniDetails" database. **(Marks 04)**
2. Write a query to find Univrsities located in " United states " and "score" is above 80. **(Marks 04)**
3. Create an index with sorting using any field. Display query performance using "execution" plan. **(Marks 08)**
4. Create a compound text index using any field in the database. Display query performance using "execution" plan. **(Marks 08)**

Total Marks: 50