Kirirom Institute of Technology

FULL STACK DEVELOPMENT BOOTCAMP

Module 2 (Database) - Mongodb

Instructions:

- Each exercise carries 10 points.
- Each exercise contains Description of the problem, requirement, hint and expected output.
- Read the instruction clearly before practicing the exercises.
- The answer sheet must be named after the naming convention mentioned in each exercise.
- Each exercise done by student is expected to meet the learning outcome mentioned in each exercise.
- All the exercises must be completed on time.
- You may discuss about the problem conceptually with the trainer or fellow students or from internet **however getting direct answers or copying code from others or from internet is strictly prohibited.**
- All the exercise files must be submitted to google classroom.
- All the exercises will be evaluated and points will be updated by the end of each week.
- Based on the points obtained by each student the overall ranking will be maintained.
- **All the documents (including this document) used in this bootcamp are sole properties of KIT and for internal purposes only. Must not be shared to anyone outside of this bootcamp.**

EXERCISE_01:

Description:

- Download and install the Mongodb database from the below URL: https://www.mongodb.com/try/download/community .
- Create your first three database **"Student"**, **"Teacher"** and **"School"**.
- Display the names of all the available databases.
- Delete the databases one by one.

- Research and write the short notes on the differences between SQL and NoSQL databases with advantages and disadvantages comparing with SQL databases.
- Research and list the other no SQL databases available other than mongodb.
- Research on JSON documents in mongodb.

Requirements:

- Command prompt must be used for DB operations.
- Screenshots of the steps to install, create, display and delete the databases must be added to the word file **01_Mod_02_mongodb_installation_screenshots.docx** and to be submitted to the google classroom.
- The researched answers must be added to the word file **01_Mod_02_mongodb_basic_research.docx**

Expected Outcome:

To understand how to download and install the mongodb
To learn how to create, list and drop a database

EXERCISE_02:

Description:

- Create a database '**employee** and a collection **"records".** Insert the below document with the below properties and values into the **"records"** collection database as a single operation using command prompt.

id: 123
name: "<Your name>"
phone: <Your phone number>
current_date: <Current Date>

Requirements:

- Screenshots of the steps and results must be added to the word file **02_Mod_02_mongodb_insert_record.docx** and to be submitted to the google classroom.

Hint:

- insert()

Expected Outcome:

To learn how to create a database
To understand how to insert a record in mongodb

EXERCISE_03:

Description:

- Insert all the below records with properties and with their corresponding values into the **"records"** collection of the **"employee"** database as a single operation using command prompt.

id: 134
name: "Vichea"
phone: 12345
current_date: <Current Date>

id: 1250
name: "Phalin"
phone: 132345
current_date: <Current Date>

id: 126
name: "Vichea"
current_date: <Current Date>
address: { street: "West street", city : "Phnom Penh" }
favourites: ["Music", "Reading books", "Singing"]

Requirements:

- Screenshots of the steps and results must be added to the word file **03_Mod_02_mongodb_insert_many_records.docx** and to be submitted to the google classroom.

Hint:

- insertMany()

Expected Outcome:

To learn how to insert multiple records in a single operation
To understand how to insert a record with arrays and objects

EXERCISE_04:

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Module 2 (Database) - Mongodb

Description:

- Read and display all the records from the **"records"** collection of the **"employee"** database as a single operation using command prompt.
- Display the records in a proper format.

Requirements:

- Screenshots of the steps and results must be added to the word file **04_Mod_02_mongodb_read_records.docx** and to be submitted to the google classroom.

Hint:

- find()
- pretty()

Expected Outcome:

To learn how to read records from the collection in a single operation
To learn to display the organized output

EXERCISE_05:

Description:

- Read and display the records with the name **"Vichea"** from the **"records"** collection of the **"employee"** database as a single operation using command prompt.
- Display the records in a proper format.

Requirements:

- Screenshots of the steps and results must be added to the word file **05_Mod_02_mongodb_read_a_record.docx** and to be submitted to the google classroom.

Hint:

- find({condition})
- pretty()

Expected Outcome:

To learn how to read a particular record/records from the collection in a single operation (Similar to using where conditions in Relational Databases)

EXERCISE_06:

Description:

- Read and display all the records from the **"records"** collection of the **"employee"** database as a single operation using command prompt.
- Sort and display the records in ascending order of the **"id"** property.
- Sort and display the records in descending order of the **"id"** property.
- Display the records in a proper format.

Requirements:

- Screenshots of the steps and results must be added to the word file **06_Mod_02_mongodb_read_and_sort.docx** and to be submitted to the google classroom.

Hint:

- sort()
- pretty()

Expected Outcome:

To learn how to read a particular record/records from the collection in a single operation (Similar to using where conditions in Relational Databases)

EXERCISE_07:

Description:

- Count and display the number of records with the **"name"** property with the value **"Vichea"** from the **"records"** collection of the **"employee"** database.

Requirements:

- Screenshots of the steps and results must be added to the word file **07_Mod_02_mongodb_count_records.docx** and to be submitted to the google classroom.

Hint:

- count()

Expected Outcome:

To learn how to count the number of records with specific condition

EXERCISE_08:

Description:

- Read and display the first two records with the **"name"** property with the value **"Vichea"** from the **"records"** collection of the **"employee"** database and sort them with the **"id"** property in descending order.
- Display the records in a proper format.

Requirements:

- Screenshots of the steps and results must be added to the word file **08_Mod_02_mongodb_limit_sort.docx** and to be submitted to the google classroom.

Hint:

- limit()
- sort()
- pretty()

Expected Outcome:

To learn how to read limited number of records with a specific condition and sort them.

EXERCISE_09:

Description:

- Read and display the **"id"** property of all the rows from the **"records"** collection of the **"employee"** database using a loop.

Requirements:

- Screenshots of the steps and results must be added to the word file **09_Mod_02_mongodb_looping.docx** and to be submitted to the google classroom.

Hint:

- forEach()

Expected Outcome:

To learn how to iterate through the records .

EXERCISE_10:

Description:

- Read and display the record/records with the "**phone**" with the value **"132345"** from the **"records"** collection of the **"employee"** database using findOne() function.

Requirements:

- Screenshots of the steps and results must be added to the word file **10_Mod_02_mongodb_fineARecord.docx** and to be submitted to the google classroom.

Hint:

- findOne()

Expected Outcome:

To learn how to find a particular record from the database .

ALERT

Make sure that you follow all instructions properly. Be aware that each character is important. Upload your solutions for all the exercises on the google classroom created and shared with you.