

# MONGODB PRACTICE

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## 1. NOTES REGARDING THE PRACTICE

- When you see the dollar sign in a command you need to execute, note this is just a command prompt indication. You do not need to actually write the "\$", as it is not part of the command.
- **For all practices below – write all the commands you have used in a "Practice answers document".**  
**When you are complete, you can submit this document for review.**

## 2. CONNECT TO THE THE MONGODB ENVIRONMENT

- Verify the "MongoDB" environment is up and running:  
`docker ps -a`
- Open a BASH session to the practice environment  
`docker exec -it Mongo /bin/bash`

### 3. GENERAL DETAILS AND PRACTICE PREPARATION (5)

- Download the “[products.json](#)” file to your computer (for example, to “c:\temp”) and copy it to “/data/products.json” in the Docker container.
  - See the Guidelines documents if you require assistance on this.

### 4. IMPORT PRODUCTS DATA INTO MONGODB (15)

- Import the products information from the JSON file you have loaded into MongoDB.
  - Import into a collection named “products” and a database name “epam”
  - Specify the default MongoDB port in the relevant parameter
  - Specify an option so that the collection will be dropped if it exists before loading the new data
    - View the relevant command options using “-help” to find the relevant option
  - See the Guidelines documents if you require assistance on this.

### 5. VERIFY THE LOADED DATA IN MONGODB (20)

- Login to MongoDB
  - Do we have to specify the hostname and port number? Why?
  - What is the MongoDB version?
- Check – what options are available in MongoDB for the following:
  - Databases
  - Collection
  - Find options in collections
  - See the Guidelines documents if you require assistance on this.
- Check – Which databases currently exist in this MongoDB instance?
- Switch to use the database named “epam”
- Check – Which collections currently exist in the database “epam”?
- List all data in the collection “products”
- Check – How many documents currently exist in this collection?

## 6. CRUD OPERATIONS IN MONGODB COLLECTIONS (40)

- Insert the following new document to the “products” collection with the following attributes:
  - Product id: “ac9”
  - Product name: “AC9 Phone”
  - Product brand: “ACME”
  - Product type: “phone”
  - Product price: 333
  - Product Warranty (in years): 0.25
  - Product availability: true
  
- Perform queries to display products according to the following requirements:
  - Query 1:
    - Skip the first 2 products and display the next 10 products in the collection.
    - Make the output in an easy to read JSON format. (Each field and its value should appear in a separate row)
  
  - Query 2:
    - Display only the “name” and “brand” fields for each product.
  
  - Query 3:
    - Display only the “id” and “limits” fields for the first 10 products
    - Collect the results into a single array, in which each element is both “id” and “limits” of a specific product.
    - Examine the result you have received:  
Did all “id” values had a matching “limits” value? Why so?
  
  - Query 4:
    - Display the IDs, names and prices of all products of which prices are greater or equal to 200.
  
  - Query 5:
    - Display the IDs, names and prices of all products.
    - Sort the result according to price in descending order and name in ascending order (secondary sort)
  
  - Query 6:
    - Write a query that displays how many products we have of type “service”. (Check the field which is named “type”)

- **Updating records**
  - General questions
    - Can we update the “\_id” field? Why so?
    - When should we use the “**set**” keyword? What happens if we omit it?
    - When should use the “**multi**” keyword?
  - Please perform a query after each of the following updates to verify you have updates the documents as expected.
  - Update 1:
    - Update product with ID “ac3”, so that he will now have only the following field values:
      - company: “EPAM”
      - item: “MongoDB”
  - Update 2:
    - Update all products which have “ac3” somewhere in their name, and add a new field to their document – “subtype” with the value “AC3”.

Note that the “ac3” string in the name can be either lower or upper case.
- **Deleting records**
  - Remove all records of type “service”.

## 7. USING INDEXES (5)

- Create an index for the “price” field
- Create a compound index for “type” and “subtype” fields
- Create a text index for the “name” field.
  - What is the benefit of a text index over a regular index?

## 8. ARCHITECTURE AND MONITORING (15)

- Consult the guidelines document if required for assistance on the following requirements.
- Run a command which describes the current MongoDB node.
  - Change the command to display only the local time of the current instance.
- Run a command which describes the current state of the database, with all its metrics and stats.
- Display information about all currently running operations in the database instance.
- Check – are replication sets currently enabled?