**Part 1: Design Document**

**A.  Select one of the provided scenarios and complete the following:** Scenario 1

**1.  Describe a business problem that can be solved with a database solution and is in alignment with the chosen scenario.**

The business problem that HealthFit Innovations is facing is a lack of database support for their wide and varied data. Being a health device company, they have a lot of different data and data types that need to be stored such as medical history, continuous reporting data from numerous medical devices, patient information, etc. This large assortment of different data is overwhelming their current DBMS.

**2.  Justify why a NoSQL database solution will solve the identified business problem.**

A NoSQL database solution like MongoDB will be the perfect business solution for HealthFit Innovations due to the non-relational aspect of this database. Since this database is a document-based data solution it is capable of storing a wide volume of different data types, in a highly scalable, flexible, and secure way.

**3.  Identify a NoSQL database type to solve the identified business problem.**

The database type I have identified is a document based non-relational database model with MongoDB. This will enable HealthFit to store all of their current data, while giving them the resources to scale and store large amounts of varied data in documents in their MongoDB database.

**4.  Explain how the business data will be used within the database solution.** The business data will be stored within documents in the MongoDB database. All business data for each customer and medical device will be stored within 2 different collections. These collections will be medical data and health device data. Each collection will hold numerous documents which will contain the information of each patient and device relevant to the collection. This method will ensure that data is stored in a highly organized, scalable, and detailed manner. The team at HealthFit Innovations will be able to effectively search for any device, patient, or any other data withing their company and easily be able to locate this, due to the organization of MongoDB.

**B.  Discuss how the proposed database design addresses scalability concerns, including strategies that align with the chosen scenario.** Since MongoDB is a non-relational database there should be no scalability concerns. Horizontal growth is built into MongoDB and the application will have no issue storing the large volume of different data types that HealthFit Innovation collects as that is MongoDB’s designed purpose. Storing large quantities of different data types within separate documents.

**C.  Outline the privacy and security measures that should be implemented in the proposed database design.**

The privacy and security measures that should be implemented could include an authorization check, this will be to ensure whoever is accessing this database is authorized to access the database. While this is true for any stored data, this is especially true for HealthFit Innovations due to the sensitive medical nature of their data. Authorization, encryption, and appropriate separation of sensitive from non-sensitive information will ensure adequate protection for the company and their data.

**Part 2: Implementation**

***Note: The data files for each scenario are located in a folder titled “D597 Datasets” on the desktop of the WGU Virtual Lab environment. Be sure to pull the files from “Task 2” that relate to your chosen scenario.***

***Note: Submit your screenshots from the WGU Virtual Lab for each prompt with your design document.***

**D.  Implement the proposed database design in the WGU Virtual Lab environment by completing the following:**

**1.  Write script to create a database instance named “D597 Task 2” using the appropriate query language, based on your design in Part 1. Provide a screenshot showing the script and the database instance in the platform.**

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**2.  Write script to insert or map the data records from the chosen scenario JSON files into the database instance. Provide a screenshot showing the script and the data correctly inserted or mapped into the database.**

Medical Data Pasted into Medical collection**A screenshot of a computer

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Fitness tracker data pasted into medical collectionA screenshot of a computer

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**3.  Write script for three queries to retrieve specific information from the database that will help to solve the identified business problem. Provide a screenshot showing the script for each query and each query successfully executed.**

1. **Query to count how many patients are using each medical tracker. Useful for gathering data on which products are the most used.**

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1. **Query for which device has the best battery life, and is under 2500$. This will be useful for finding devices that are good for the everyday person, affordable and reliable.**

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1. **Query to find the fitness trackers with a battery life of over 10 days. Useful for being able to recommend the longest lasting products to customers.** **A black background with white text

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2. **Apply optimization techniques to improve the run time of your queries from part D3, providing output results via a screenshot.**

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**Query 1 afterA screenshot of a phone

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**Query 2 beforeA screenshot of a computer

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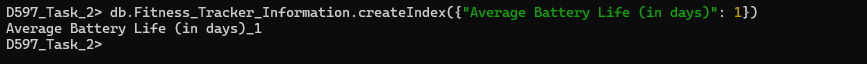
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**Query 2 afterA screenshot of a computer

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**Query 3 beforeA white rectangular object with black text

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**Query 3 Adding Index  
 **

**Query 3 After adding index, using the index search**

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**Part 3: Presentation**

***Note: The audiovisual recording should feature you visibly presenting the material (i.e., not in voiceover or embedded video) and should simultaneously capture both you and your multimedia presentation.***

***Note: For instructions on how to access and use Panopto, use the "Panopto How-To Videos" web link provided below. To access Panopto's website, navigate to the web link titled "Panopto Access" and then choose to log in using the "WGU" option. If prompted, log in using your WGU student portal credentials, and then it will forward you to Panopto's website.***

***To submit your recording, upload it to the Panopto drop box titled "Task 2: Non-Relational Database Design and Implementation – MKN1 | D597.” Once the recording has been uploaded and processed in Panopto's system, retrieve the URL of the recording from Panopto and copy and paste it into the Links option. Upload the remaining task requirements using the Attachments option.***

**E.  Present your functional database solution in the lab environment by doing the following:**

**1.  Record a walk-through of your program appropriate for an audience of a project team with technical knowledge using Panopto. Record yourself describing your program. Your recording should capture both you and your functioning program. Your presentation should also demonstrate appropriate communication skills for your audience, including a professional appearance.**

**2.  Demonstrate the following in your recorded walk-through:**

**•  Discuss how database design and indexing strategy optimize performance.**

**•  Describe the technical environment used in your database implementation.**

**•  Demonstrate the functionality of the script in the lab environment.**

**•  Discuss how the script solves the identified business problem.**

**F.  Acknowledge sources, using in-text citations and references, for content that is quoted, paraphrased, or summarized.**

All content was sourced from WGU lesson materials.

**G.  Demonstrate professional communication in the content and presentation of your submission.**