Gedaria Mandele

Data base assignment 2: week two

**Database Design - Entities and Attributes**

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**Assignment 2 Instructions:**

Write your solutions in a Google Doc document.

Ensure that your Google Doc is set to "Anyone with the link can view."

Share the link to your Google Doc via the submission link provided below.

1. Define what an attribute is in the context of a database.
2. Why is it important to have a unique identifier for each item in a database?
3. Provide at least five examples of attributes that might be associated with a "Patient" entity in a hospital database.
4. Imagine a library book. List three characteristics that help distinguish one specific book from another.
5. Explain the difference between a single-valued attribute and a multi-valued attribute, providing an example of each.

**Answers**

1. **An attribute** refers to a specific piece of information describing a characteristic of an entity and is stored within a database table.
2. The need for a unique identifier for each item in a database arises from multiple factors:
3. **Data Integrity:** Guaranteeing uniqueness prevents data duplication, ensuring data integrity, and enabling clear identification.
4. **Efficient Data Management:** Unique identifiers streamline data retrieval and manipulation by providing dependable references.
5. **Prevention of Redundancy and Improvement of Consistency:** They help prevent redundant data and enhance consistency within the database.
6. In a hospital database's "Patient" entity, attributes could include:
7. **Patient’s Name:** Consisting of first, optional middle, and last names (e.g., Gedaria Denis Mandele).
8. **Date of Birth:** it written In various formats like DD/MM/YY (e.g., 2001/feb/03).
9. **Gender**: Indicating patient gender like Male or Female.
10. **Medical History**: Detailing past and current medical conditions, treatments, and diagnoses.
11. **Contact Information**: Such as phone number (+255620852107).
12. Distinctive characteristics that differentiate one library book from another encompass:
13. **Title** of the book: name of the book Such as **"ITAWALE HOFU YAKO.”**
14. **Author's** Name: the one who wrote the book. For example, **FELICIAN CLEMENT MEZA.**
15. International Standard Book Number (ISBN): Like **ISBN:978-9912-40-089-4.**
16. The difference between a single-valued attribute and a multi-valued attribute is as follows:

**Single-valued attribute**: Represents a single value for an entity. For example, the "weight" and “age” attribute of a person would have only one value.

Where as:

**Multi-valued attribute**: Represents attributes that have multiple values for an entity. An example could be the "Interests" attribute of a person, which could include multiple values like "music," "programming," "reading," and "writing articles." Also “skills” “phone number” are multi-valued attribute