1. **Define what an attribute is in the context of a database.**

- An attribute in a database refers to a characteristic or property associated with an entity. Entities represent real-world objects, and attributes describe specific aspects of those objects. In a relational database, attributes correspond to columns in a table.

- For example, consider a database for a library. The "Book" entity might have attributes such as "Title," "Author," "Publication Year," and "ISBN."

2. **Why is it important to have a unique identifier for each item in a database?**

- Having a unique identifier (also known as a primary key) for each item in a database is crucial for several reasons:

- Uniqueness: It ensures that each record (or tuple) in a table can be uniquely identified. This prevents data duplication and ambiguity.

- Data Integrity: A unique identifier helps maintain data integrity by preventing duplicate entries.

- Referential Integrity: When linking tables through relationships (e.g., foreign keys), unique identifiers ensure accurate references.

- Efficient Retrieval: Searching for specific items becomes faster and more efficient with a unique identifier.

3. **Provide at least five examples of attributes that might be associated with a "Patient" entity in a hospital database.**

1. Patient ID: A unique identifier assigned to each patient.
2. Name: The patient's full name.
3. Date of Birth: The patient's birth date.
4. Gender: The patient's gender (e.g., male, female, non-binary).
5. Medical History: Information about the patient's past illnesses, surgeries, allergies, etc.

4. **Imagine a library book. List three characteristics that help distinguish one specific book from another.**
    1. ISBN (International Standard Book Number): A unique identifier for each book, allowing precise identification.
    2. Title: The specific name of the book.

3. Author: The person who wrote the book.

5. Explain the difference between a single-valued attribute and a multi-valued attribute, providing an example of each.

- Single-Valued Attribute:

- Accept one value for an entity.

- Example: The "Age" attribute of a patient (e.g., 35 years old).

- Multi-Valued Attribute:

- Can accept multiple values for an entity.

- Example: The "Phone Numbers" attribute of a patient (which may include home, work, and mobile numbers).