WEEK TWO ASSIGNMENTS: DATABASES

1. Define what an attribute is in the context of a database: An attribute in the context of a database refers to a characteristic or property that describes an entity. It represents a piece of information that can be stored within a database table as a column.

2. Why is it important to have a unique identifier for each item in a database? Having a unique identifier for each item in a database ensures that each entity can be uniquely identified and distinguished from others. This unique identifier, often referred to as a primary key, helps maintain data integrity, enables efficient retrieval and manipulation of data, and supports relationships between different entities in the database.

3. Provide at least five examples of attributes that might be associated with a "Patient" entity in a hospital database:
   - Patient ID (unique identifier)
   - Name
   - Date of Birth
   - Gender
   - Medical History

4. Imagine a library book. List three characteristics that help distinguish one specific book from another:
   - ISBN (International Standard Book Number)
   - Title
   - Author

5. Explain the difference between a single-valued attribute and a multi-valued attribute, providing an example of each:
   - Single-valued attribute: A single-valued attribute is an attribute that holds a single value for each entity instance. For example, in a "Student" entity, the attribute "Age" would typically be single-valued because each student has only one age.

- Multi-valued attribute: A multi-valued attribute is an attribute that can hold multiple values for each entity instance. For example, in a "Student" entity, the attribute "Phone Numbers" could be multi-valued because a student may have more than one phone number.