a. Attribute in the Context of a Database:

- In the context of a database, an attribute is a property or characteristic that describes an entity in a table. It represents the specific pieces of information or data that are stored in the database. Attributes are the columns in a table, and they define the different aspects or features of the entities being modeled.

b. Examples of Attributes for a "Student" Entity in a University Database:

1. StudentID: A unique identifier assigned to each student.
2. Name: The full name of the student.
3. Age: The age of the student.
4. Major: The academic major or course of study.
5. GPA: The grade point average of the student.

c. Single-Valued Attribute vs. Multi-Valued Attribute:

- Single-Valued Attribute:
    - A single-valued attribute is an attribute that holds a single value for each entity. It means that at any given time, the attribute has only one value associated with it.
    - *Example:* In a "Student" entity, the attribute "Age" is single-valued because a student has only one age.
- Multi-Valued Attribute:
    - A multi-valued attribute is an attribute that can hold multiple values for each entity. It means that the attribute can have a set or list of values associated with it.
    - *Example:* In a "Student" entity, the attribute "Phone Numbers" might be multi-valued because a student can have multiple phone numbers (home, mobile, etc.).