In general, an attribute is a characteristic.

It is the name of the column.An attribute gives the characteristics of the entity.

In a database management system (DBMS), an attribute refers to a database component, such a table.

It also may refer to a database field.Attributes describe the instances in the row of a database.

For example,A customer of bank may be described by : name, address, customer ID number.It is also called as data element, data field, a field, a data item, or an elementary item.

Type of Attributes in DBMS –

1. Single Values Attributes: An attribute, that has a single value for a particular entity is known as single valued attributes. For example, age of a employee entity.
2. Simple/Atomic Attributes: The attributes which cannot be divided into smaller subparts are called simple or atomic attributes. For example, age of employee entity
3. Multi Valued Attributes: An attributes that may have multiple values for the same entity is known as multi valued attributes. For example colors of a car entity.
4. Compound/Composite Attribute: Attribute can be subdivided into two or more other Attribute. For Example, Name can be divided into First name, Middle name and Last name.
5. Derived Attribute: Attributes derived from other stored attribute. For example age from Date of Birth and Today’s date.
6. Key Attributes : Represents primary key. (main characteristics of an entity). It is an

attribute, that has distinct value for each entity/element in an entity set. For example, Roll number in a Student Entity Type.

7. Required Attributes: A required attribute is an attribute that must have a data value.These attributes are required because they describe what is important in the entity. For example, In a STUDENT entity, firstname and lastname is a required attribute.
8. Complex Attributes: If an attribute fr an entity, is built using composite and multivalued attributes, then these attributes are called complex attributes. For example, a person can have more than one residence and each residence can have multiple phones, an addressphone for a person entity can be specified as – {Addressphone (phone {(Area Code, Phone Number)}, Address(Sector Address (Sector Number,House Number), City, State, Pin))}Here {} are used to enclose multivalued attributes and () are used to enclose composite attributes with comma separating individual attributes.
9. Non Key Attributes: These are attributes other than candidate key attributes in a table. For example Firstname is a non key attribute as it does not represent the main characteristics of the entity.
10. Optional/Null Value Attributes: An optional attribute may not have a value in it and can be left blank. For example, In a STUDENT entity, Middlename or email address is an optional attribute. as some students may not have middlename or email address.
11. Stored Attribute: An attribute, which cannot be derived from other attribute, is known as stored attribute. For example, BirthDate of employee.

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