Weak Entity Set

* A weak entity set is an entity set that does not contain sufficient attributes to uniquely identify its entities.

* In other words, a primary key does not exist for a weak entity set.

* However, it contains a partial key called as a discriminator.

* Discriminator can identify a group of entities from the entity set.

* Discriminator is represented by underlining with a dashed line.

Note:

* The combination of discriminator and primary key of the strong entity set makes it possible to uniquely identify all entities of the weak entity set.

* Thus, this combination serves as a primary key for the weak entity set.

* Clearly, this primary key is not formed by the weak entity set completely.

> Primary key of weak entity set
> = Its own discriminator + Primary key of strong entity set.

Symbols Used :

* A double rectangle is used for representing a weak entity set.

* A double diamond symbol is used for representing the relationship that exists between the strong and weak entity sets and this relationship is known as identifying relationship.

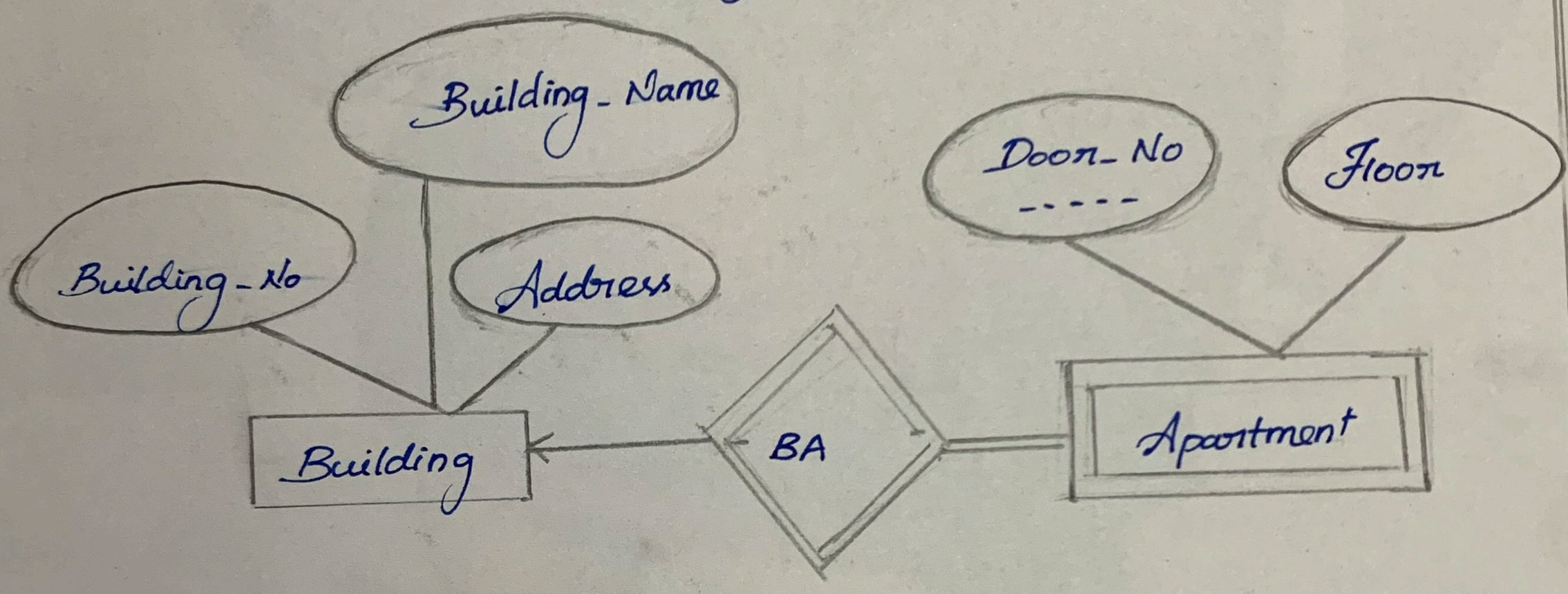
* A double line is used for representing the connection of the weak entity set with

the relationship set.

* Total participation always exists in the identifying relationship.

Example:

Consider the following ER diagram.



In this ER diagram,

* One strong entity set "Building" and one weak entity set "Apartment" are related to each other.

* Strong entity set "Building" has building number as its primary key.

* Door number is the discriminator of

weak entity set "Apartment".

* This is because door number alone can not identify an apartment uniquely as there may be several other buildings having the same door number.

* Double line between Apartment and relationship set signifies total participation.

* It suggests that each apartment must be present in at least one building

* Single line between Building and relationship set signifies partial participation.

* It suggests that there might exist some buildings which has no apartment.

To uniquely identify any apartment,

* First, building number is required to identify the particular building

*Secondly, door number of the apartment is required to uniquely identify the apartment.

Thus,

Primary key of Apartment

= Primary key of Building + Its own discriminator