Guidelines for converting an E/R diagram to a schema

For every (non-weak) entity set E:

- Create a new relation.
- Each attribute of E becomes an attribute of the new relation.
- E's key becomes the primary key of the new relation.

For every (non-supporting) relationship R:

- Create a new relation.
- Each attribute of R becomes an attribute of the new relation.
- Each *key* attribute of every entity set connected to R becomes an attribute of the new relation.
- The primary key of the new relation is probably one of:
    - The union of the keys of the entity sets involved, or
    - The union of the keys of the entity sets involved, plus one or more additional attributes of the relationship,
    - One or more attributes of the relationship alone.

For every weak entity set W:

- Create a new relation.
- Each attribute of W becomes an attribute of the table.
- Each attribute of all supporting relationships become attributes of the new relation.
- Each *key* attribute of all entity sets connected by supporting relationships become attributes of the new relation. If an entity set connected by a supporting relationship is itself weak, this process continues until a non-weak entity set is found.
- The primary key of the new relation will include any key attributes of W, plus key attributes of entity sets connected by supporting relationships.

Do not create a new relation for any supporting relationship for a weak entity set.

Combining relations for a many-one relationship: For every (non-supporting) many-one relationship from entity E to entity F:

- Do not create a new relation for the relationship itself.
- In the relation for entity E, add the key attributes for F and any attributes of the relationship.
- E might have NULLs in the key attributes for F if this is an "at most one" relationship.

Combining relations for a one-one relationship: Use the same process as for a many-one relationship, but you may decide which relation should hold the relationship information. In other words, for a one-one relationship between entity sets E and F, you can add the relationship information either to the new relation created for E, or the new relation created for F, but not both.