Checklist for review of ER Diagrams

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1. Check all entities
   a. Are the names ok?
      - ✍ No duplicate names
      - ✍ Avoid variable-style names
   b. Is each entity required? Or is it an attribute?
      - ✍ Entities, which are better modelled as an attribute, may be shown as an entity in the ER diagram. However, when the model is converted to a relational schema, it must be collapsed as an attribute of the appropriate entity.
   c. Could there be a specialisation/generalisation of some entities

2. Check relationships
   a. Check degree
   b. Check cardinality
      - ✍ Given one instance of one entity, how many related instances COULD there be of the other entity? (one or many?)
      - ✍ Reverse direction
   c. Check existence
      - ✍ Must there be AT LEAST ONE instance associated with an instance of the other entity?
      - ✍ Reverse direction
   d. Many:many relationships
      - ✍ Have they been collapsed?
      - ✍ If they have been collapsed, check the cardinalities and existence.
   e. Are there redundant relationships?
      - ✍ A relationship is redundant if it communicates information that can be derived from other relationships anyway.
   f. Relationship names – “has”, “is”, “can” (and all their conjugations in different tenses) are explicitly disallowed.
   g. No duplicates in the relationship names.

3. Check for completeness
   a. Go through the miniworld and ensure that no entities have been omitted

4. Schema: check attribute names (attribute names must follow the TableName_AttribName norms)

5. Specialisations must be drawn so as to have the sub-types BELOW the super-type and not above the super-type.

6. Use reports only to draw data requirements, not to design the tables.

- ✍ Consider a railway time-table. The Time-table is actually a report that will show multiple columns. Those columns indicate the data requirements – i.e., the data to be stored in the database, but that report must not form the basis for the structure of the database.

7. Grading:
   Total – 40 (Design component of the Project Marks)
   a. 10 - Completeness
   b. 10 - Correctness
   c. 10 - Contribution to the team effort
   d. 10 - Viva
      - ✍ General questions about concepts of database design (properties a relationship, specialisation, general principles of ER to relational mapping)

   These marks will then carry a weighting of 10 marks in the final project assessment.