.Good Practice Rules for Constructing Entity Relationship Models

- All entities are entered in the singular.

- Give a relationship a good name and read it both ways using the words ‘but’ and ‘each’. Consider whether time is a factor. If it is, add the phrase, over time.e.g. Each vehicle is designated to one user and each user is designated to one vehicle but over time Each vehicle will be designated to many different users and each User will have been designated to many different vehicles.

- When resolving many to many relationships introduce a new entity in between the two entities with the many-to-many relationship and ‘put the manys in the middle’.

- Watch out for standard things which occur.:
  - Employees managing other employees would normally be a recursive relationship.
  - Anything which is checked out or assigned to someone for a given period of time but may later be assigned to someone else is probably a many-to-many relationship.

- The default position for Mandatory and Optional is that the ‘one’ side is mandatory and the ‘many’ side is optional. However, this is not always the case – it should always be challenged to see if it holds true in the real world.

- Start with the entities and relationships you are sure of. If you like call this the core of your database. Work from the core out.

- Date and Time is always an Attribute and never an Entity.

- If something needs to have a relationship with other entities then it itself is an entity.

- Be careful not to include the ‘Whole Thing’ as an entity. E.G. if you are modelling a McVities Biscuit Factory. Then write the words McVities Biscuit factory at the top and do not include it as an Entity. If there are multiple biscuit factories then include it as an entity.

- Be careful not to confuse the fact that many of something exist in a certain situation with the fact that they may or may not have a many relationship with another entity. The mere inclusion of that item as an entity means there are many of them.

- Watch out for ‘Implied Relationships’ i.e. if a patient is in a bed and a bed is in a room then the fact that the patient is in a room does not need to be modeled as the relationship is implied by the fact that the bed is in the room.

- Phone Numbers are text attributes as they may include brackets or dashes. When using a Number attribute in general it is something which might form part of some mathematical expression.

- If there is only EVER likely to be one of something e.g. a Stockroom or a Factory then it probably should not be an Entity. An Entity implies there are many of the *thing*.

- Watch out for Information stores in the real world. E.G the word File, Database, Record. These represent other peoples bad attempts to model the information.