**Knowledge and Theory: Database Design**

**Part 1 – Entity Relationship Diagram Example:** *Draw an entity-relationship diagram for a database with companies, people, and professionals (people who work for companies).*

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| **People Entity:** The first entity you should illustrate is “people”. Simply create a box for it and add all the attributes. |  |
| **Professional Entity:** Illustrate an entity for “professional”. Add all the relevant attributes. |  |
| **“Is a” Relationship:** Add an “is a” relationship between “Professional” and “People”. This means that “professional” inherits all the attributes from “people”. Before you illustrate an entity, make sure you check for “is a” relationships. If there is an “is a” relationship for this entity, omit the attributes that it will inherit later. This will save you from having to erase the name, address, etc, when you realize it is redundant do to the inherit properties. |  |
| **Company:** Add an entity for “company”. Include all the relevant attributes. |  |
| **“Works For Relationship”:** Add a many to one relationship called “works for” that connects professionals to companies. Add attributes to the relationship such as “join date”, “salary” and perhaps things like “benefits, hours, schedule” etc. These attributes should specify the details of the relationship.  **Note:** Image to the right is shown below but larger. |  |

**Step 1:** Identify all the entities and relationships. In this case, there are three entities (people, professional and companies) and two relationships (profesional is a person, professionals work for companies, the “works for” is a one to many relationship).

**Step 2:** For all the entities, add their attributes.

* Make sure you do not add redundant attributes for entities that inherit from other entities.
* Make sure you do not add relationship attributes to an entity. For example, do not add “years married” to a male. Add a married relationship (which is one to one), then add “years married” to the relationship. This saves you from having database anomalies (since you have two separate “years married” attributes in the male and female that are the same thing.

**Step 3:** Add Relationships and Relationship Attributes

