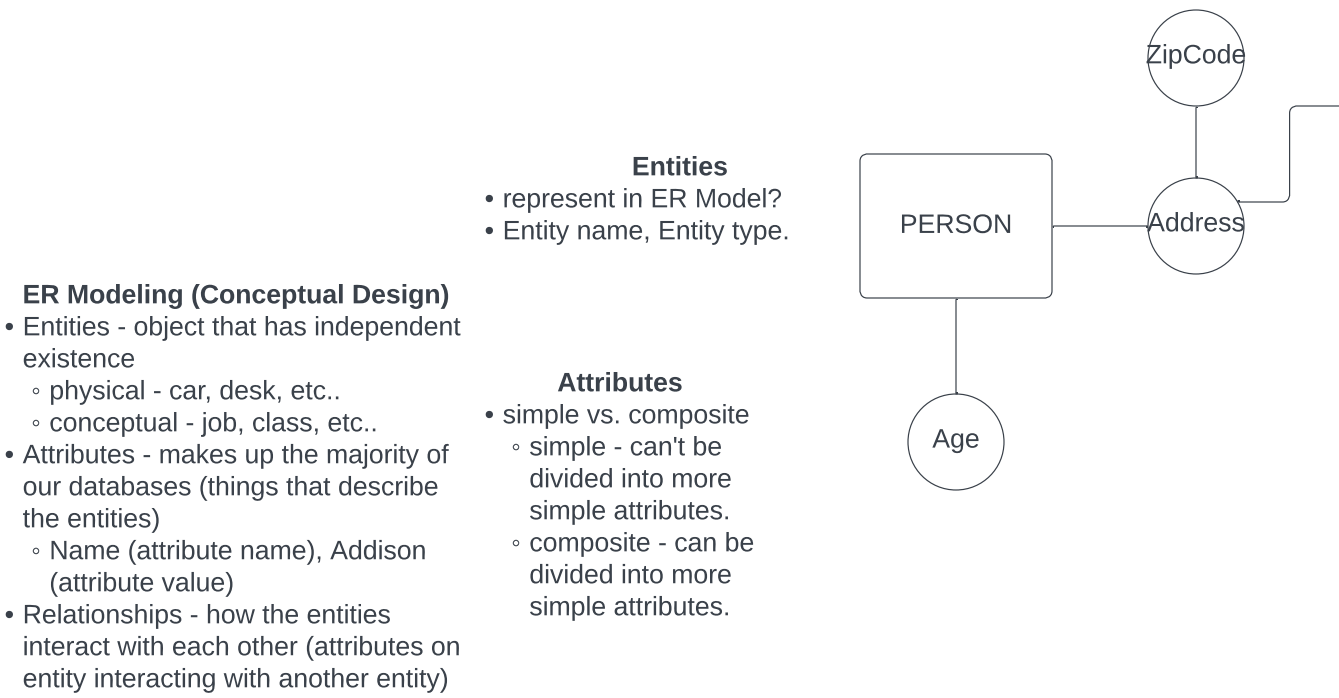


- Data Independence**
- Logical - ability to make change at conceptual level without having to change external.
 - Physical - ability to make change at internal level without having to change higher levels (i.e. conceptual and external).



Let's diagram these logical data requirements as a class (assume we model relationships as attributes for now) this is fair game for a simple quiz question*:

- Algorithm:**
- Identify each entity type E , for each entity type E_i in $\{E_1, E_2, \dots, E_n\}$ identify attributes $A(E)$ and the type of attribute i.e. simple vs. composite, single valued vs. multi valued, derived vs. stored, complex*.
- The company (Entity) is organized into departments (Entity). Each department has a unique name, a unique number, and a particular employee who manages the department. We keep track of the start date when that employee began managing the department. A department may have several locations.
 - A department controls a number of projects, each of which has a unique name, a unique number, and a single location.
 - The database will store each employee's name, Social Security number, 2 address, salary, sex (gender), and birth date. An employee is assigned to one department, but may work on several projects, which are not necessarily controlled by the same department. It is required to keep track of the current number of hours per week that an employee works on each project, as well as the direct supervisor of each employee (who is another employee).
 - The database will keep track of the dependents of each employee for insurance purposes, including each dependent's first name, sex, birth date, and relationship to the employee.

ER Diagram (use cheat sheat below):

Symbol	Meaning
	Entity
	Attribute
	Key Attribute
	Multivalued Attribute
	Composite Attribute
	Derived Attribute

