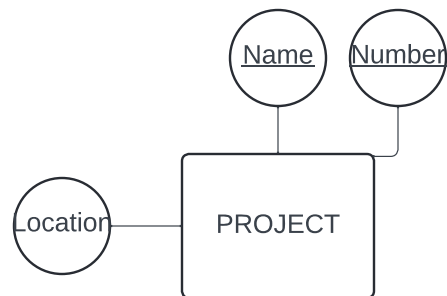
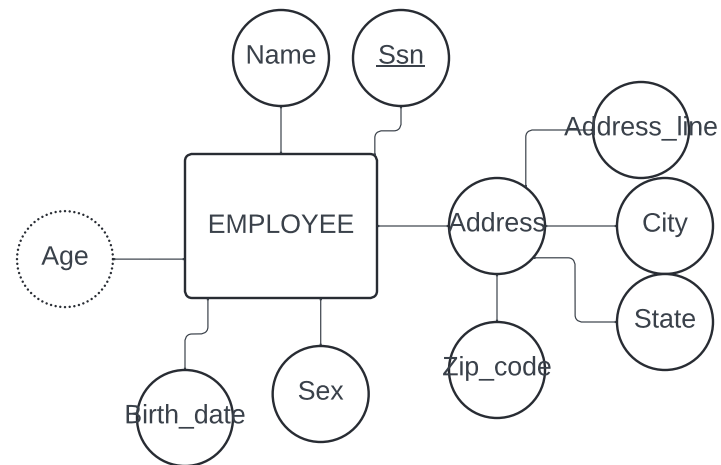


How you might model
without relationships*



- The company is organized into departments. 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, 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.

Relational Data Model

- Entities
 - Having independent existence
 - Physical existence
 - Conceptual existence
- Attributes
- Relationships

NULL Value

- We don't know it's value
- The value doesn't apply
- Doesn't exist

Simple (Atomic) attributes vs. Composite attributes - can be broken down into simple attributes.

Stored attributes vs. Derived attributes

Single valued attributes vs. Multivalued attributes

Key attributes
Complex attributes

