

# Software Design & Architecture

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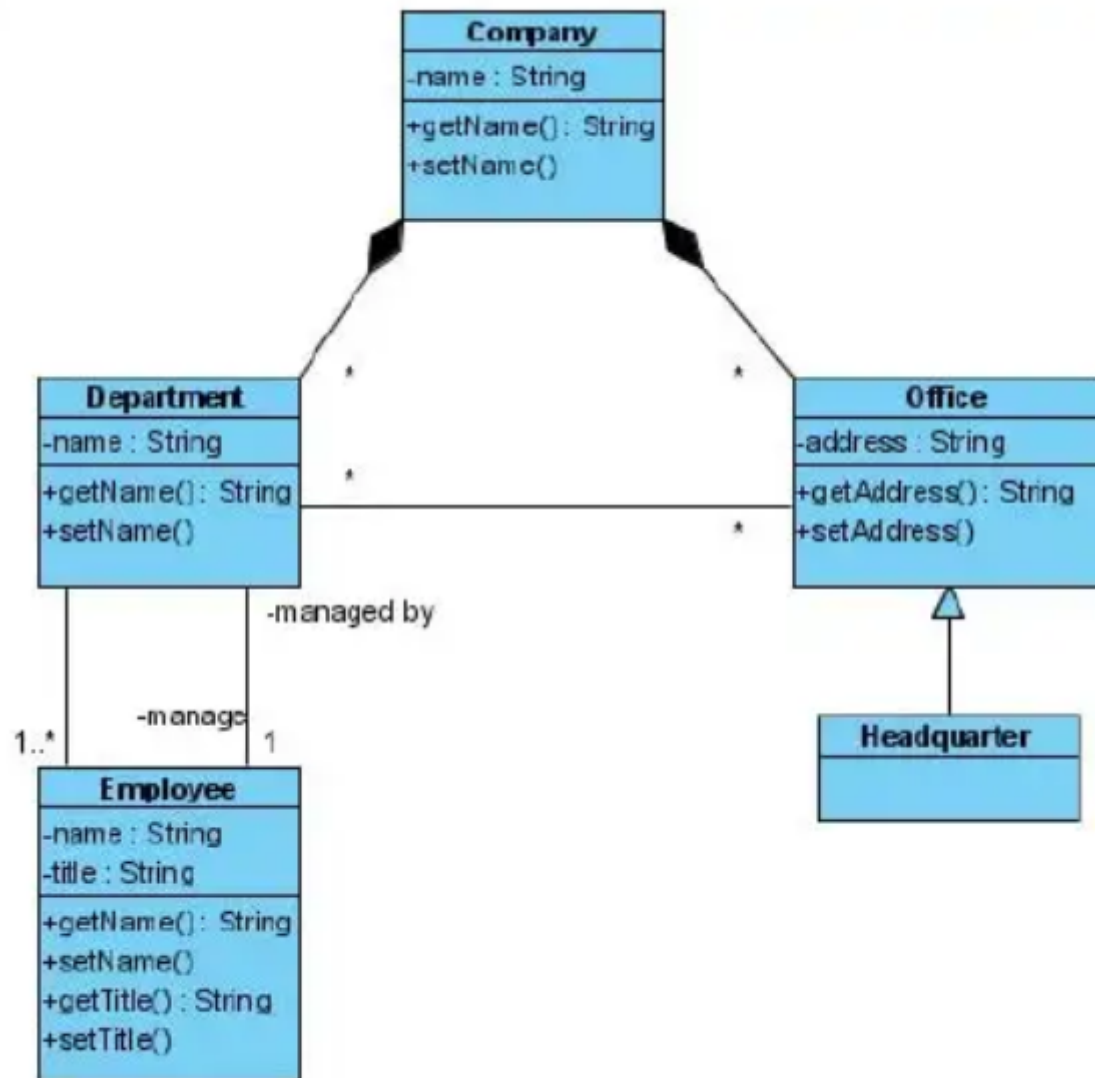
# Class Diagrams



A company consists of departments. Departments are located in one or more offices. One office acts as a headquarter. Each department has a manager who is recruited from the set of employees. Your task is to model the system for the company.

### **Task:**

Draw a class diagram which consists of all the classes in your system their attributes and operations, relationships between the classes, multiplicity specifications, and other model elements that you find appropriate.



*Figure 1 – Company consists of Departments Class Diagram*

# Flights

- We want to model a system for management of flights and pilots. Draw a class diagrams with proper relationships, attributes and multiplicity.
- An airline operates flights. Each airline has an ID and a name.
- Each flight has an ID, a departure airport and an arrival airport: an airport as a unique identifier.
- Each flight has a pilot and a co-pilot, and it uses an aircraft of a certain type; a flight has also a departure time and an arrival time.
- An airline owns a set of aircrafts of different types, and an aircraft can be used on sharing by multiple airlines.
- An aircraft can be in a working state or it can be under repair.
- In a particular moment an aircraft can be landed or airborne.
- A flight has a set of pilots: each pilot has an experience level: 1 is minimum, 3 is maximum.
- Flight may need a particular number of pilots, with a different role (e.g.: captain, co-pilot, navigator): there must be at least one captain and one co-pilot, and a captain must have a level 3.

