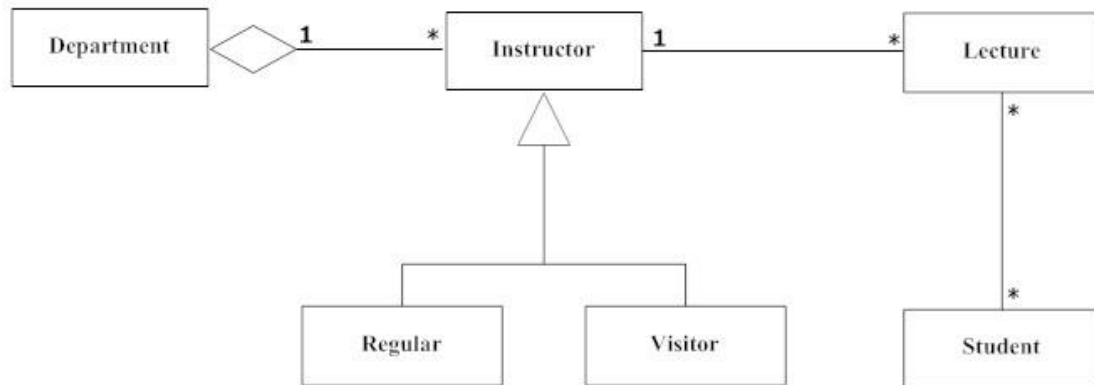


## UML Class Diagram Example



Ask questions like below:

- does a department need to know its lectures and vice versa?
- does a department need to know its students and vice versa?
- does a student need to know her instructors and vice versa?

Think of queries that your design is required to answer:

- how many students takes lectures from a department?
- how many students does an instructor have?

Complete the given design and code to fulfill the following requirements:

1. find methods - is "exists" method required?
2. count methods - what about "how many departments are there?"

Improve the given design and write code to answer the following queries:

3. what are the lectures given by a department?
4. does this student take lecture from that department?
5. how many students in total takes lectures from a department?
6. how many students in total does an instructor have?
7. how many hourly instructors does a department have?

Add the following attributes or classes to the given design and code?

8. exam, exam grade, lecture grade, GPA, CGPA, transcript