Sharpen Your Skill 1

1. A country has a capital city.

Country
+ Capital City: City

City

Country 1 ◆——————0..1—→ City
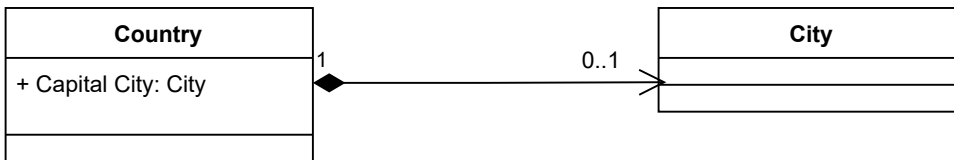
2. A dining philosopher is using a fork.

Philosopher
+ use_fork()

Philosopher - - - - - -Use- - - - -→ Fork

Fork
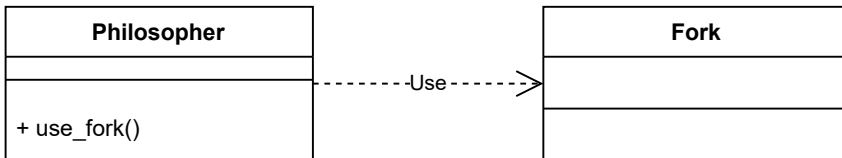
3. A file is an ordinary file or a directory file.

File

0..n

contain

1

OrdinaryFile

DirectoryFile
files : Set<File>
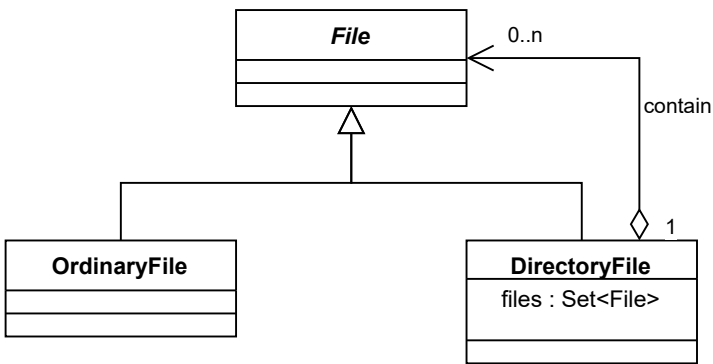
4. Files contain records.

File

1 ◆———————0..n

Record
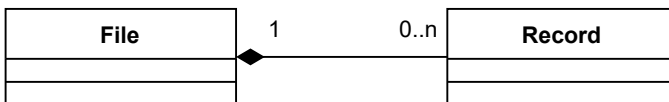
5. A drawing object is text, a geometrical object, or a group.

Drawing Object

0..n

0..1

Text

GeometricalObject

Group
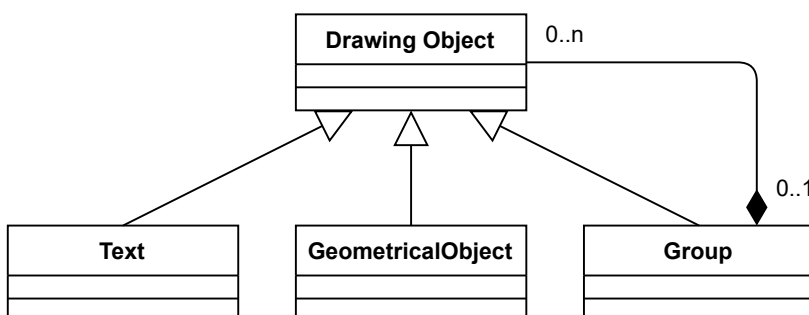
Sharpen Your Skill 2

1. A person uses a computer language on a project
(用 association class : UseLanguage 在 person和project之間)

Person
+ work(ComputerLanguage):void

---Use--->

ComputerLanguage
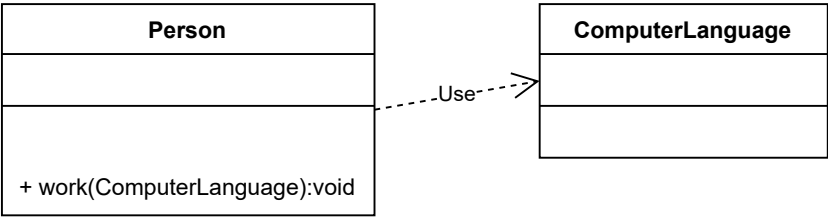
2. Modems and keyboards are input/output devices
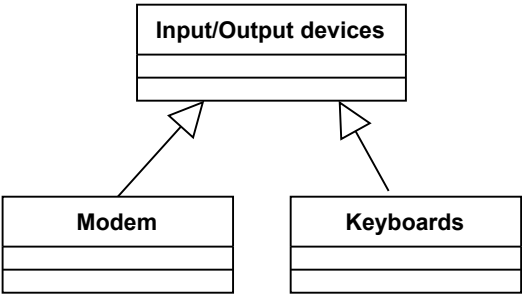
Input/Output devices

Modem

Keyboards

3. Object classes may have several attributes

ObjectClass	1 0..*	Attribute
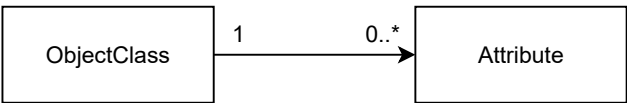
4. A person plays for a team in a certain year.

Person
+ contract: Contract

1..*   playFor   0..1

Team
+ contracts: List<Contract>
+ hire(Person): void
+ fire(Person): void

Contract
+ person: Person
+ team: Team
+ startTime: Date
+ endTime: Date
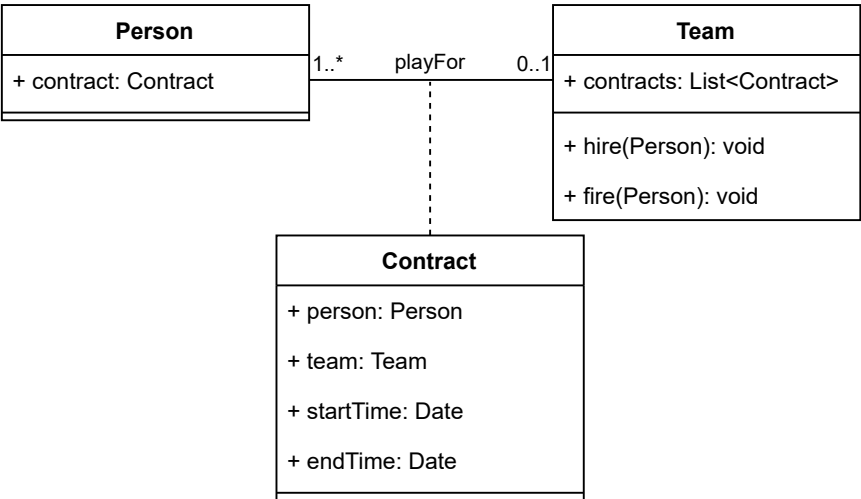
5. A route connects two cities.

City

0..n

0..n

Route
firstCity: City
secondCity: City
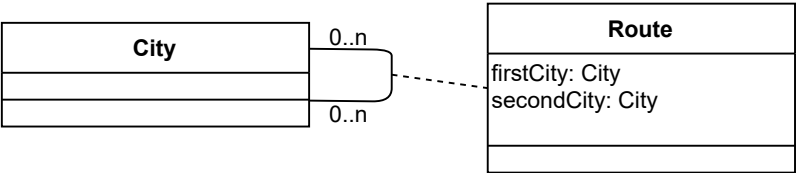
6.A student takes a course from a professor.
(可以把TakeCourse變成Student和Professor 之間的association class，比較好)

```
            ┌─────────────────────────────┐
            │          Course             │
            ├─────────────────────────────┤
            │  - professor: Professor     │
            │  - students: Set<Student>   │
            ├─────────────────────────────┤
            │                             │
            └─────────────────────────────┘
               *              *
                                    ┌──────────────────────────┐
                                1   │        Professor         │
                                    ├──────────────────────────┤
                                ◇   │  - courses: Set<Course>  │
                                    ├──────────────────────────┤
                                    │                          │
                                    └──────────────────────────┘
               *  ◇
            ┌─────────────────────────────┐
            │          Student            │
            ├─────────────────────────────┤
            │  - courses: Set<Course>     │
            ├─────────────────────────────┤
            │  + take_a_cource(Course)    │
            └─────────────────────────────┘
```