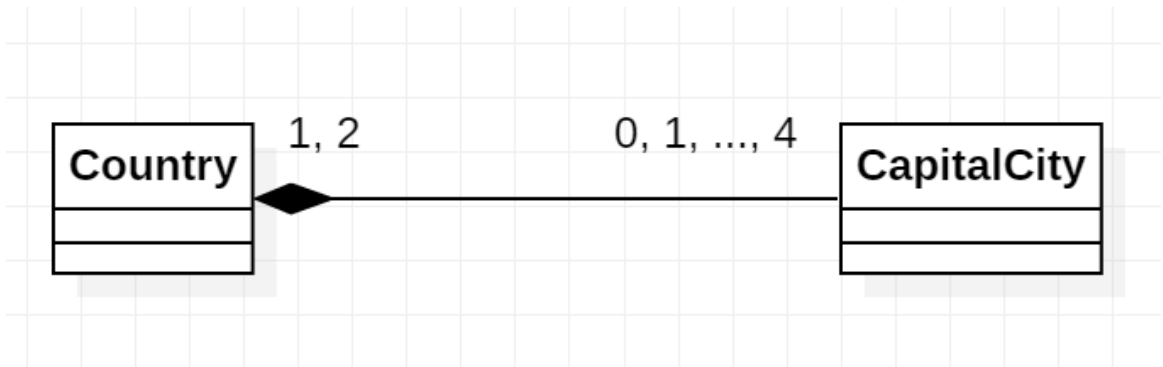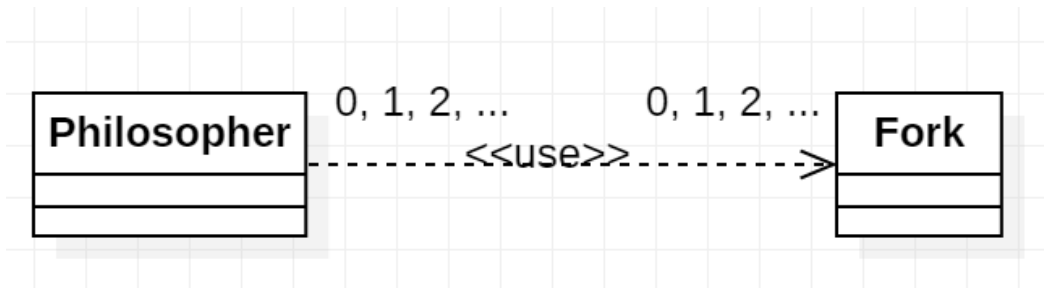## 1. A **country** has a **capital city**.

A country has zero to four capital cities.

A capital city may be owned by one or two countries.

If a country is collapsed, those capital cities are also vanished. On the other hand, if a capital city is changed or disappeared, the country may still exist. Therefore, I think capital city is part of the country.
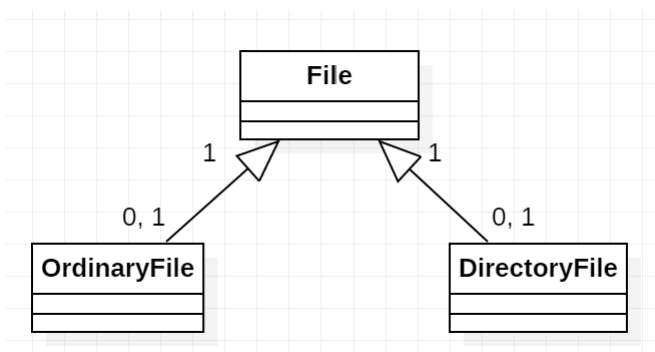
2. A dining **philosopher** is using a **fork**.

A philosopher can use more than one fork, and a fork can be used by more than one philosopher.

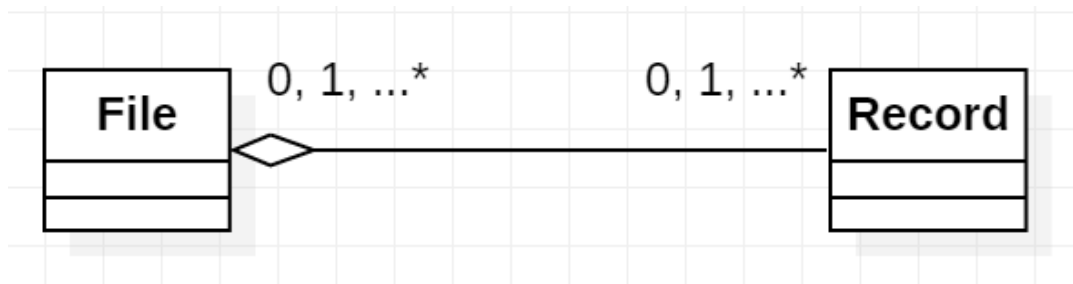The relation of using forks by philosopher is temporary, so I choose dependency.

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

A file may be a ordinary file or a directory file.

Ordinary and directory are extended concepts of files, so I choose generalization.
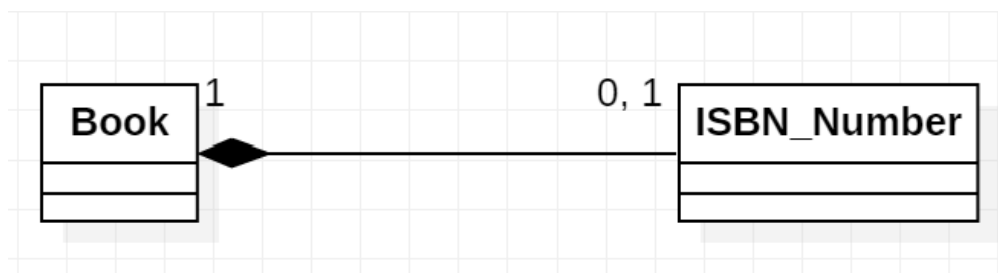
4. **Files** contain **records**.

A file can contain zero to many records, and a record can be kept in zero to many files.

If the files are all deleted, the records may still exist by other means.

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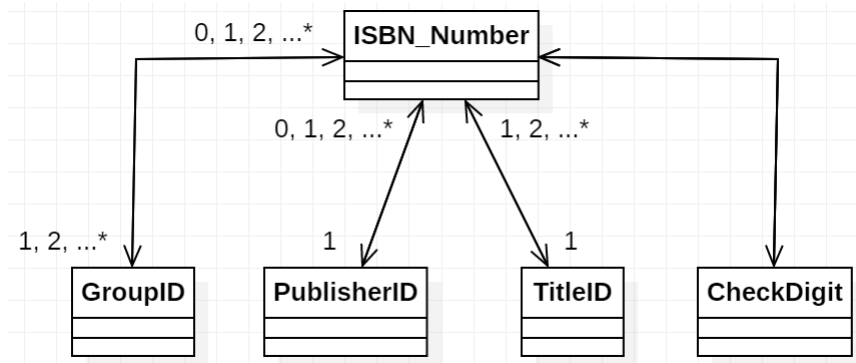
Homework

1. A **book** has a unique **ISBN number**.

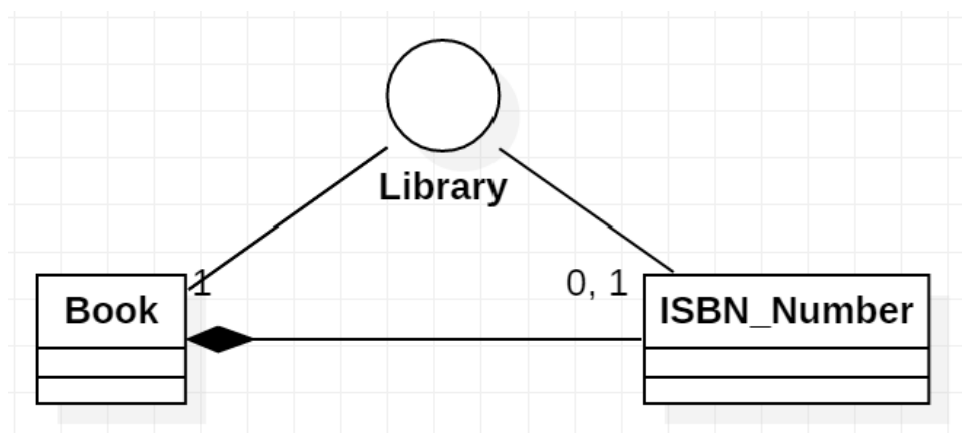Each book has less than one ISBN number, and each number is assigned to one unique book.
If the book is disappeared, the number is deleted, therefore, I think it is the composition relationship.

2. A I**SBN number** contains **group id, publisher id, title id, check-digit.**

The deletion of ISBN number not necessarily results in the vanish of those 4 objects. Hence, I pick up the relationship – association.

3. A **library** can collect **books**, and can inquiry book by ISBN.

QQ NO IDEA