

CPE372
Object Oriented Analysis and Design
Quiz 4

ANSWERS - See class diagram for modifications

Study the class diagram on the next page, which provides a simplified view of how companies operate in Thailand. This is the same class diagram that we used in Quiz 4.

1. In this class diagram, there is at least one missing **aggregation relationship**. Draw this relationship on the class diagram using the correct diagram conventions. Then in the space below, explain the relationship (what class is a part of what other class, and why) (5 points)

Both *Corporation* and *ForeignCorporation* have aggregation relations with *Shareholder*, because these classes hold lists of their shareholders as *ArrayList* collections of *ShareHolder* objects.

You did not need to include the multiplicity information. In fact, I am not sure whether the multiplicity on the *ShareHolder* side (0...n) is correct, since I don't know if you must already have a minimum number of shareholders in order to form the corporation at all. (This shows how much the design of the classes depends on domain knowledge!)

2. One type of company not shown on this class diagram is a **Limited Partnership**. A limited partnership does not have shareholders or directors. Instead it has two or more *partners* who jointly own the company and its assets. Law firms and accounting firms are often limited partnerships.

Add a class for **LimitedPartnership** to the diagram using the correct diagram conventions. You must decide what class (if any) it should extend. Then, in the space below, explain your choice. (5 points)

I made *LimitedPartnership* be a direct subclass of *Company*, because it does not have either shareholders or a single "owner". However, like *SoleProprietorship*, it must override the *getCapitalization* and *getDirectors* methods. (You don't have to show this to get full credit.)

