Lab 6

Deadline: May 30th at 3:00 p.m.

1. State whether each of the following is *true* or *false*. If *false*, explain why.
   (1) Base-class constructors are not inherited by derived classes.
   (2) An *is-a* relationship is implemented via composition.
   (3) A `Student` class has an *is-a* relationship with the `Faculty` and `Course` classes.
   (4) `Private` members of a `private` base class are inaccessible to the derived class.
   (5) A base class's `protected` members can be accessed in the base-class definition, in derived-class definitions and in `friend`s of the base class and its derived classes.

2. Draw an inheritance hierarchy for students at a university. Use `Student` as the base class of the hierarchy, then include classes `UndergraduateStudent` and `GraduateStudent` that derive from `Student`. Continue to extend the hierarchy as deep (i.e., as many levels) as possible. For example, `Freshman`, `Sophomore`, `Junior` and `Senior` derive from `UndergraduateStudent`, and `DoctoralStudent` and `MasterStudent` derive from `GraduateStudent`. After drawing the hierarchy, discuss the relationships that exist between the classes. (Note: You don't need to write any code for this exercise.)

Hand-in Rules

Your GitHub account shall have a public repository `lab6`, which includes a word or pdf file with answers to the above questions.