

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.

True

(2) An is-a relationship is implemented via composition.

False, An has-a relationship represents composition

(3) A Student class has an is-a relationship with the Faculty and Course classes.

True

(4) Private members of a private base class are inaccessible to the derived class.

True

(5) A base class's protected members can be accessed in the base-class definition, in derived-class definitions and in friends of the base class and its derived classes.

False, only through non-private member functions provided in the base class and inherited into the derived class.

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.)

