CptS 122 – Data Structures
April 2, 2018

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Take-Home: Quiz 7 (15 pts) – Inheritance in C++

Part I: Short Answer.
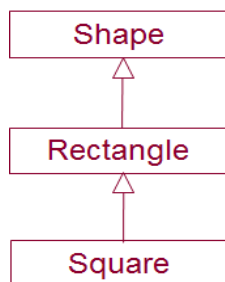
1. (6 pts) What is inheritance? Explain.

It is a way to extend the functionality of an based class by deriving a subclass. The derived class and the exist class share all the functions (methods) and instantiated variables (fields) in common, but we can add more functions based on our need in the derived class without rewriting the functions that already exist in the based class.

2. (3 pts) Provide an example of *multiple* inheritance. Explain your example.

MS Surface Pro inherits the properties from both a tablet and a laptop. It has Windows OS installed and can act like a personal computer, but it's also able to transform to a tablet since it equipped a touch screen on it.

Part II: Fill-In-The-Blank.

3. (2 pts) The following class diagram is an example of _____multilevel_____ inheritance.

Shape
△
Rectangle
△
Square

4. (2 pts) Inheritance is representative of a(n) _____is-a_____ relationship. A Rectangle object demonstrates this relationship because it can be treated as a Shape object.

5. (2 pts) When an object of a derived class is instantiated, the base class' _____constructor_____ is called implicitly or explicitly to initialize the data members of the base-class in the derived-class object.

Instructor: Andrew S. O'Fallon