



Your Name: \_\_\_\_\_  
ID#: \_\_\_\_\_

TA's Name: \_\_\_\_\_  
Section #: \_\_\_\_\_

### SOLUTION: Take Home: Quiz 5 (15 pts) - C++ and OOP

Using Blackboard Learn <https://learn.wsu.edu/webapps/login/> submit your quiz. You will submit your assignment in the *lab* Blackboard space. Under the "Content" link navigate to the "Quiz Submissions" folder and upload your solution to the appropriate "Quiz" space. You must upload your solution, through an attachment, as <your last name>\_quiz5.pdf by the due date and time.

1. (5 pts) In your own words, what is *information hiding*?

**Information hiding** is the principle of separating design decisions in a module or object from the rest of the system. In objects, different visibilities may be used to restrict the impact of change to a small subset of the program. Access to private data members is only granted outside the object via well-defined public interfaces. If a change is made to the private data, then it should only impact a small portion of the program, because the well-defined interface should not change.

3. (5 pts) In your own words, what is *abstraction*?

**Abstraction** is the concept that only essential information is presented to the outside world, while the background details are hidden. There are many levels of abstraction.

**Procedural abstraction** refers to a sequence of steps/instructions that have a specific and limited function. The name of the procedure implies these functions, but suppresses the specific details. An example would be the word "open" for a door. (Pressman - Software Engineering)

**Data abstraction** is a named collection of data that describes a data object. An example would be the data abstraction "door". The "door" would represent a set of attributes like door type, weight, etc. (Pressman - Software Engineering)

3. (5 pts) In your own words, what is a function *template*?

**A function template** is a code block that serves as a pattern for creating other similar functions. These templates can be created without providing a specific type for variables. When a template is invoked the compiler will generate a specific implementation with the types provided in the call.