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APCS

Per. 2

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<div align="center">Spring Take Home Quiz #1</div>

Inheritance

Keyword: extends, implements

Meaning: when an object or class is based on another object (prototypal inheritance) or class (class-based inheritance), using the same implementation (inheriting from an object or class) specifying implementation to maintain the same behavior (realizing an interface; inheriting behavior). It is a mechanism for code reuse and to allow independent extensions of the original software via public classes and interfaces.

Delegation

Meaning: Delegation refers to one object relying upon another to provide a specified set of functionalities.

Polymorphism

Meaning: polymorphism refers to a programming language's ability to process objects differently depending on their data type or class. More specifically, it is the ability to redefine methods for derived classes.

Overloading

Meaning: Overloading is when there are two methods with the same name, but take in different arguments. Overloading allows the programmer to create methods with the same name but different arguments.

Public Interface of a class

Keyword: public

Meaning: The public interface of a class are the public methods that other classes can access and interact with. It also contains the public fields of the class.

Interface

Keyword: interface

Meaning: An interface is a description of the actions that an object can do. In Object Oriented Programming, an Interface is a description of all functions that an object must have in order to be an "X".

Encapsulation

Keyword: hide

Meaning: Encapsulation is an Object Oriented Programming concept that binds together the data and functions that manipulate the data, and that keeps both safe from outside interference and misuse. Data encapsulation led to the important OOP concept of data hiding.

Invariant

Meaning: An invariant is something that can be depended on to remain the same and not change throughout the program.

In terms of loops: A value in the loop that remains constant throughout the loop

In terms of classes: A value that does not change in the class.

Linked List

Class name: LinkedList

Meaning: is a linear collection of data elements, called nodes pointing to the next node by means of pointer. It is a data structure consisting of a group of nodes which together represent a sequence.

Iterator

Keyword: Iterator

Meaning: An iterator is an object that enables a programmer to traverse a container, particularly lists. Iterators can iterate through lists, maps, or sets.

List Iterator

Keyword: for, Iterator

Meaning: A ListIterator allows you to traverse the list in both directions (forward and backward) instead of just one direction like in a normal iterator.