Transition to Object Oriented Programming (1120)

Object Oriented Exercise | Instructor Guide

**Outcomes**

By encouraging students to develop their own object-oriented models for relationships they might encounter in day-to-day life, students might be led to develop a certain intuition for object-oriented design. In the best case, this will enable students to better appreciate the principles that guide modern OOP as they learn more and more later on. In the minimum case, students will be made familiar with the key object-oriented concepts encapsulation, abstraction, and inheritance.

Encapsulation: refers to the bundling of data, along with the methods that operate on that data, into a single unit. May also refer to a manner of restricting access to data which might be ‘private’.

Abstraction: used to hide background details or any unnecessary implementation about the data so that users only see the required information. Follows a path of decreasing abstraction – things get more ‘real’ as they are more and more defined.

Inheritance: is the mechanism of basing an object or class upon another object or class, retaining similar implementation.

**Timeline of Events**

Allotted 50 minutes (standard MWF class period).

1. 5 Minutes Introduction to Exercise
2. 20 Minutes Develop Model
3. 20-25 Minutes Share Model

**Outline of Events**

Introduction

Introduce the assignment (read outcomes) and provide Coast Guard Employee Example. Show both UML diagram and Coast Guard Employee Diagram. Answer any questions.

Develop Model

Development should be done on a platform conducive to presentation (OneNote, UML, or Whiteboard). Sit in on groups and guide as necessary.

Share Model

Each group should be provided ~2 minutes to give a quick explanation of their model. Challenge assumptions and developments inconsistent with standard OOP practice.