Exercise #5 (No computers needed)

This week you’ll start thinking about how to design the creature class, and subclasses, for assignment 3.

A. (6 pts) Basic Concept: Form a small group (2-3 students). Discuss these questions and develop your group’s answers. If you are completing the exercise on your own outside of a session then you must complete it by yourself.

1. What is the slicing problem?
2. Why is it a problem?
3. How does polymorphism solve the slicing problem?

B. (2 pts) Pointers:

Design an array of pointers to the creature class. What will this look like? What will it look like with several creatures of say Barbarian, and Hydra objects? Create a diagram of how memory is used. Clearly indicate the type of data stored in any variable and the memory necessary. You can use an arbitrary size of B for the Barbarian objects, and size H for the Hydra object.

C. (2 pts) Functions:

Provide pseudocode to randomly pull out 2 creatures to have a battle. You will use a Creature pointer to each. Explain how polymorphism causes the correct attack or defense function to be used for the Hydra and the Barbarian.