

## COP 3330 Suggested Exercises for Week 9

### Abstract Classes

- 1) Create an Edible Class as an abstract class which stores the number of grams of protein, carbohydrates and fat and has a getCalories() method defined. Add to it an abstract method toString() and any other abstract methods you would like to add.
- 2) Write an abstract class Fruit that inherits from Edible. This class should have an instance variable color (String) Add anything else you would like to this class.
- 3) Write classes (not abstract) Banana, Strawberry and Mango each which inherit from Fruit.
- 4) Write an abstract class Chips that inherits from Edible.
- 5) Write classes (not abstract) Doritos and Lays that inherit from Chips.
- 6) Write a class with a main method that creates an ArrayList of Edible. Store at least one Banana, Strawberry, Mango, Doritos and Lays objects and try out different methods to see the benefits of code reuse via Abstract Classes.

### Classes Review

- 7) Create a Hangman class which allows the user to play a game of Hangman.
- 8) Design a small text-based role playing game that uses multiple classes.
- 9) Utilize the Fraction class to solve a mathematical problem where the answer can be represented exactly as a fraction.
- 10) Create an example with inheritance for storing information about Softball players (or any sport which you enjoy).