**CSCI 2302**

**Abstract Classes & Interfaces Chapter Program Assignment**

**Purpose:** Work with class relationships of aggregation and inheritance, abstract classes, interfaces, and abstract methods.

**Input:**  None, hard coded into the program

**Output:** To the screen

**Task:**

1. Define/Implement a Planet class for representing the planet from which your fictional character (and antagonist) originates from. This class has at least two states/fields/attributes; e.g. nameOfPlanet (or planetName), nameOfGalaxy (or galaxyName). Planet has at least 4 behaviors; e.g. 1 constructor, 2 getters methods, and toString method. Make sure to override the toString method from the Object class that will provide a description of the planet.
2. Modify the Being class to:
   1. be an abstract class.
   2. Have an aggregation relationship – it has-a Planet
      1. The Being class should have the Planet object instantiated in your Being class.
   3. have at least 1 abstract method.
3. Implement/Define an interface, Movement, with an abstract method of modeOfMovement.
4. Modify your fictional character class to inherit from Being class.
   1. Modify the constructor to reflect the inheritance from Being
   2. Make sure to define the abstract method(s).
      1. Implement/Define the abstract method from the Being class
      2. Implement/Define the abstract method modeOfMovement.
5. Implement/Define YourSFAusername\_ACI\_Program.java to do the following:
   1. Instantiate your fictional character.
   2. Invoke the “abstract”/now defined method from the Being class that is overridden in your fictional character class.
   3. Invoke the modeOfMovement method that is overridden in your fictional character class.

**Bonus Points** (10 points)

1. Modify your antagonist character class to inherit from Being class.
   1. Modify the constructor to reflect the inheritance from Being
   2. Make sure to define the abstract method(s).
      1. Implement/Define the abstract method from the Being class
      2. Implement/Define the abstract method modeOfMovement.
2. Add to the YourSFAusername\_ACI\_Program.java to do the following:
   1. Instantiate your antagonist character.
   2. Invoke the “abstract”/now defined method from the Being class that is overridden in your antagonist character class.
   3. Invoke the modeOfMovement method that is overridden in your antagonist character class.