AP Java Arcade Game Project -

Directions: Create an arcade style video game that demonstrates your understanding of **inheritance**, **polymorphism**, **abstract classes**, **interfaces** and **ArrayLists**. When complete, your game will need to run inside the AP Java Arcade which I have created. To ensure your game is compatible with my arcade you must extend the JPanel class and implement the JavaArcade interface. The interface is defined below:

public interface JavaArcade {

   public boolean running();

   public void startGame();

   public String getGameName();

 public void pauseGame();

  public String getInstructions();

  public String getCredits();

   public String getHighScore();

   public void stopGame();

  public int getPoints();

}

The Java Arcade will be able to load all of your games and will have buttons for start/stop/pause as well as mechanisms for displaying the Game name, instructions, credits and high score information. It makes sense that all games that are played in this "arcade" would have a common interface so that playing each game has some level of intuitiveness for players.

You may work in groups of 2-3 or individually. If you are working with others, you need to evenly distribute the work load and reflect authorship in the comments of the files. Your game will be graded on the following criteria:

1. Functionality (10) – You create an arcade style game, that works inside of the JavaArcade. The game is original but can be inspired by existing games. There is a way to start/stop/pause and score points. No errors occur during normal run time conditions.

2. Scope (10) – Your code demonstrates use of ArrayLists, Inheritance, Polymorphism, Abstract Classes, Interfaces.

3. Design (10) - Your program is thoughtfully designed. Super classes are utilized to factor out any common code.

4. Style (5) – Conventions detailed in class coding style guide are adhered to. Additionally, for full credit comment where polymorphism applies.

5. Demonstration (3) – You demonstrate game to class, walk through a UML diagram, and highlight one piece of code that you find interesting (explain purpose of this code, how it's relevant to your game, and how it works)

6. Creativity (2) – Your game is original, no other game exactly like it exists although it can be inspired by others (Tupacman).

1 E.C. point – voted best game

The point of this project is to ensure you understand the topics listed above including inheritance, abstract classes, interfaces and polymorphism. Therefore all of the code in your project must be your own. Don't use code from the internet, books or other sources unless they are non-essential components. In those cases, cite your source. However, you can use the code provided in my sample "Space Invaders" game as a resource for responding to timers, key, and mouse events. The code from my project is in the Google drive. Note, this sample code does not implement the above interface.

Game Due : Wednesday 3/31/21 – You will have class time all next week to work on it. You should also plan to work at home on this project.