Software Studio Assignment 3

1. **Battle Game (100%)**

   You are working in a game company. You are in a team that develop a battle game with two characters, and each of them has some skills. A character has an image representing it. Different characters have different type and HP.

   After the game start, the two characters take turns to take actions, For example, it can be that the left character goes first, and then the right character takes an action, and so on. When it's the turn of a character, the player can choose the skill they want to use to attack the opponent.

   Different skills have different type, power and accuracy rate. Power is the basic damage value of the skill. In general, it will reduce the opponent's HP with the value. But the relationship between the opponent's type and the skill's type may influence the result. Power can be 1.5 times or 0.5 times of the original value depending on the combinations of character type and skill type. There is also an accuracy rate attribute for each skill, which refers to the probability of the attack will cause an effect (i.e., how likely the attack will cause a damage on the opponent). HP is the life point of a character, when one of the characters' HP goes to 0, the character then lose the game and the game finishes. The two characters take turns to attack the other character until the game ends.

   Some members of the game development team have written part of the main program and some display functions. You are assigned to design Characters and their Skills. Fortunately, the abstract class AbstractCharacter and AbstractSkill are already done. You only need to write some classes to inherit the abstract classes and complete the codes for the game.

   Basic Requirements:

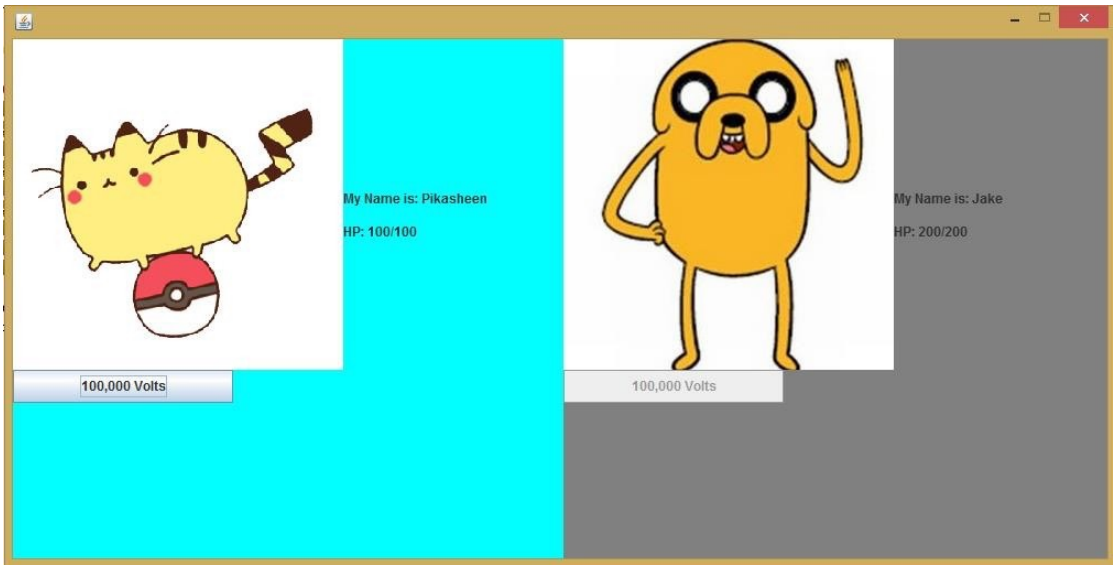
   1. Implement two different classes to inherit the class AbstractCharacter for building two game characters (**40**%)
   2. Implement one class to inherit the class AbstractSkill (**20**%)
   3. The game can execute correctly (**10**%)

   Advanced Requirements:

   1. Show the damage/avoid message of the attack. (**5**%) Hint: Use JOptionPane.
   2. Animate the characters. (**5**%) Hint: Override method getImage().

3. Build more than two characters and randomly assign a player to one of the characters when the game starts. (10%)

Bonus (20%):
Any improvement of the game, such as the display, game rules, special effect of skills etc. Write what you have done in Readme.txt.



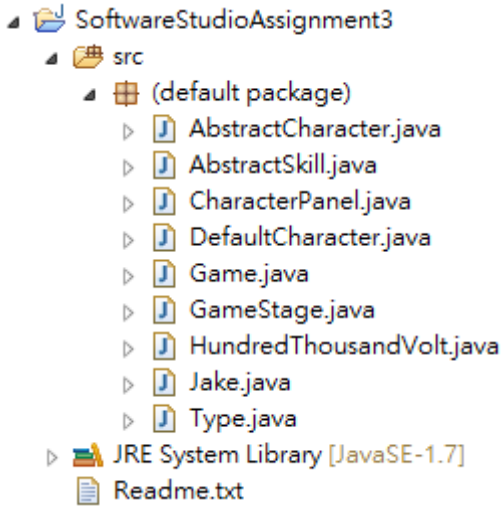
An Example o*f the game*
Video demonstration can be found at
https://youtu.be/4rMPVuoIPHg

Some useful tips:

1. You can put your picture in the project folder and use ImageIO.read() to load the image to your program. http://docs.oracle.com/javase/7/docs/api/javax/imageio/ImageIO.html
2. Enum is a feature in JAVA 1.5 and after version. The member in it will be some constant. It can help the readability of the program. Check the link for more information. http://docs.oracle.com/javase/7/docs/api/java/lang/Enum.html
3. Do not modify the code unless you are familiar with the code.

Notice:

1. **Deadline: 2016/3/30(Wed) 23:59 (If you submitted in 3/31 00:00~23:59, you will get partial credits (80% of the original score). No credits if submitted afterward.)**
2. To submit your assignment, you should follow the form like below:



Put the source code, Readme.txt in an Eclipse Java project. Then zip it to a zip file named as "id_assignment3.zip" and upload to iLMS.

3. For each source code file, you have to add the comments to explain your code.
4. The Readme files have to include the brief explanation of your work, the problem you encounter and how to solve the problem.

Honor Code:

Any cheating will be handled seriously in compliance with the university rules. All assigned work is expected to be individual, except where explicitly written otherwise (e.g., term project). You are encouraged to discuss with your classmates; however, what you hand in should be your own work.