CS Homework #20

Deadline: March 13th, 9:00 pm.

- *Save your code as lastname_homework20.py and submit on Google Classroom.*
- *Please, run your code before submitting.*
- *If you get an error, try to fix it before submitting your homework.*
- *If you get help from anyone, please, make sure that you actually understand the solution.*

Task 1

Create a class Monster with four attributes (all integer values): a unique numerical ID, original power, current power, and a level. The ID and original power should be the arguments passed by the user. The original power is fixed (it never changes). The initial level is equal to 1. The current power is calculated on the basis of the following formula: current power = initial power * level.

Task 2

Add a basic introduction for the monster, which should look something like this: "Monster 101, initial power 4, current power 4, level 1."

Task 3

Generate 10 monsters using a for loop and random values for the original power (between 1 and 5, included). Hint: use 'i' from the for loop to generated the unique ID values for your monsters. The instances should be saved as elements of a list. Using the instance method from Task 2, display information about each monster.

Task 4

In the actual game, the monsters interact with a hero. Create a simple class Hero. For our current purposes, the class Hero should have just three attributes: an ID (integer), a level (integer), and a difficulty level (string: "easy", "normal", or "hard"). Create a hero who is level 20, playing on "hard" difficulty.

Task 5

Let us now update the class Monster. Implement an instance method that adjusts the level of the monster on the basis of the level of the hero and difficulty level. Therefore, there are two arguments: (1) an integer - the level of the hero, and (2) a string – the difficulty, which is either "easy", "normal", or "hard". The level of the monster is equal to the level of the hero. It is further adjusted given the difficulty. For "easy" it decreases by 2, for "hard" it increases by 2 (and no change for "normal" difficulty"). IMPORTANT: The method should also update the current power of the monster given the monster's original power and the level of the monster.

Task 6

Use for loop and the instance method from Task 5 to adjust the level of each monster. Using the instance method from Task 2, display information about each monster to verify that each monster is now level 22. Also verify that the current power of each monster is now equal to the original power * 22.