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CSE 20
Assignment 10.1: Your Own Class

GitHub Link: https://github.com/harshita-1102/Assignment-10.1

Class Documentation:

Description of the class: The class here is Person, which is used to store the details(age, name, and scientific name) of various persons. Additionally, it also checks if the person is eligible to vote based on the age set. The class is an implementation of the real world object, person. The Person class has both class variables as well as data variables, which are private, and have respective get-set methods for them. The class also has two other methods which use the values of the class and data variables. This class is the abstraction of the real world person, and it shows encapsulation by making the data variables private, and providing get-set methods for them.

Description of each class and data variables:

scientificName (class variable): This is used to store the scientific name of the person. Since the scientific name of every person is the same, this is a class variable, i.e., it is uniform for all the objects of the class.

__name (data variable): This is a private data variable, which is used to store the name of the person.

__age (data variable): This is a private data variable, which is used to store the age of the person.

Description of each of the methods:

__init__ : This is the initial method, and it is used to create a new class object and assign values to its data variables. The arguments here are the name and age, which needs to be assigned to the data variables. It does not return anything

get_name: This is the get method for the data variable __name. It does not require any argument, and it returns the value of the data variable __name.

set_name: This is the set method for the data variable __name. The argument to this function is the name, which is the new value of the name, and updates the value of the data variable __name. It does not return anything.

get_age: This is the get method for the data variable __age. It does not require any argument, and it returns the value of the data variable __age.

set_age: This is the set method for the data variable __age. The argument to this function is the age, which is the new value of the age, and updates the value of the data variable __age. It does not return anything.

isVoter: This function checks if the person is a valid voter or not. If the age of the person is greater than or equal to 18, he is a valid voter, else he is not. This function does not take any argument, and does not return anything. It prints whether the person is a valid voter or not.

showDetails: This function prints the details of the person which is the age, name, and the scientific name of the person. Likewise, it prints the value of the class variable as well as the values of the data variables.

Demo Program Documentation

Description of the demo program: The demo program, which is in the main() method is used to test the functionalities of the class Person. We create three objects of the Person class, and then we print their details, so as to ensure that the objects are correctly created. Then, we check if the persons are valid voters or not. Next, we use the setter for the age, to change the age of a person, and then we recheck if that person is a valid voter or not. This is what happens in the demo program, and more and more logic can be added to it, by adding more objects.

Instructions on how to run the demo program: To run the demo program, simply open a terminal window (using any source-code editors such as Visual Studio Code). Then use the following command to execute the demo program: *python3 myclass.py*