Exercise 4 (Date: Jan 06, 2024)

Exercise 9-1. Restaurant: Make a class called **Restaurant**. The **__init__()** method for **Restaurant** should store two attributes: a **restaurant_name** and a **cuisine_type**. Make a method called **describe_restaurant()** that prints these two pieces of information, and a method called **open_restaurant()** that prints a message indicating that the restaurant is open.

Make an instance called restaurant from your class. Print the two attributes individually, and then call both methods.

Exercise 9-2. Three Restaurants: Start with your class from **Exercise 9-1**. Create three different instances from the class, and call **describe_restaurant()** for each instance.

Exercise 9-3. Users: Make a class called **User**. Create two attributes called **first_name** and **last_name**, and then create several other attributes that are typically stored in a user profile. Make a method called **describe_user()** that prints a summary of the user's information. Make another method called **greet_user()** that prints a personalized greeting to the user.

Create several instances representing different users, and call both methods for each user.

Exercise 9-4. Number Served: Start with your program from **Exercise 9-1** (page 162). Add an attribute called **number_served** with a default value of 0. Create an instance called restaurant from this class. Print the number of customers the restaurant has served, and then change this value and print it again.

Add a method called **set_number_served()** that lets you set the number of customers that have been served. Call this method with a new number and print the value again.

Add a method called **increment_number_served()** that lets you increment the number of customers who've been served. Call this method with any number you like that could represent how many customers were served in, say, a day of business.

Exercise 9-5. Login Attempts: Add an attribute called **login_attempts** to your **User** class from **Exercise 9-3**. Write a method called **increment_login_attempts()** that increments the value of login_attempts by 1. Write another method called **reset_login_attempts()** that resets the value of **login_attempts** to **0**.

Make an instance of the **User** class and call **increment_login_attempts()** several times. Print the value of **login_attempts** to make sure it was incremented properly, and then call **reset_login_attempts()**. Print **login_attempts** again to make sure it was reset to 0.

Exercise 9-6. Ice Cream Stand: An ice cream stand is a specific kind of restaurant. Write a class called **IceCreamStand** that inherits from the **Restaurant** class you wrote in **Exercise 9-1** or **Exercise 9-4**. Either version of the class will work; just pick the one you like better. Add an attribute called flavors that stores a list of ice cream flavors. Write a method that displays these flavors. Create an instance of **IceCreamStand**, and call this method.

Exercise 9-7. Admin: An administrator is a special kind of user. Write a class called **Admin** that inherits from the **User** class you wrote in **Exercise 9-3** or **Exercise 9-5**. Add an attribute, privileges, that stores a list of strings like "can add post", "can delete post", "can ban user", and so on. Write a method called

show_privileges() that lists the administrator's set of privileges. Create an instance of **Admin**, and call your method.

Exercise 9-8. Privileges: Write a separate **Privileges** class. The class should have one attribute, privileges, that stores a list of strings as described in **Exercise 9-7**. Move the **show_privileges()** method to this class. Make a **Privileges** instance as an attribute in the **Admin** class. Create a new instance of **Admin** and use your method to show its privileges.