SE 116 Introduction to Programming II

Lab No:	02
Topic:	OO Design Principles

TASK 1:

In this lab, you are responsible for developing a Pet Adoption and Care System.

In this system, there are pets and users that will interact with each other.

Each pet has its `name, hungerLevel, happinessLevel, owner` as class fields. You will determine the data types of these attributes. (`hungerLevel` and `happinessLevel` is bounded between 0-100)

Pet class will have accessor(getter) and mutators(setter) methods for all class fields also implement parameterized constructor that will assign corresponding Pet's `name, hungerLevel, happinessLevel` to same values except `owner`, initiliaze the `owner` attribute to a default value as **null**.

Pet class will have the following methods;

eat(); : This method will decrease the corresponding pet's `hungerLevel` by 10 unit.

play(); This method will increase the corresponding pet's `happinessLevel` by 5 unit.

checkStatus(); : This method will display the current `hungerLevel` and `happinessLevel` of a pet.

Each user has its `name` and a list of `adoptedPets` as class fields. You will determine the data types of these attributes.

User class will have accessor(getter) and mutators(setter) methods for all class fields also implement parameterized constructor that will assign corresponding User's `name` to same value except `adoptedPets`, initiliaze the `adoptedPets` attribute to a default value as empty list. (Use Java's Collection Lists)

User class will have the following methods;

adoptPet(Pet pet); : This method will add the corresponding pet into `adoptedPets` list.

carePet(String petName); : This method will allow user to feed and play with the given pet.

PACS (Pet Adoption and Care System) has the list of `users` and `pets` as class fields.

This class will have a default constructor that will initiliaze the lists above as empty. Also this class will have the following functionalities;

registerUser(User user); : This method registers the corresponding user into system.

registerPet(Pet pet); : This method registers the corresponding pet into system.

adoptRandomPetFromSystem(); : This method will print whole registered users and you will select one of them and the system randomly selects one of the pets in the system and this user will adopt that randomly selected automatically. (Don't forget to remove that randomly selected pet from system.).

Create some user objects and pet objects register them into PACS, and try each functionality one by one in your main.