PRACTICAL EXAMINATION DAP

Duration 60' - Set:01   **Totalmarks: 100**

Requirement

Developing a Console Application using **Python** and **MongoDB** with console interfaces and implements functions as the following:

R1: Create a database named **PetDB** consists a table named **pets: (5 marks)**

Field name	Type with constraint	Description
_id	String	_id of Pet
name	String	Name of a Pet($)
price	Float	Price of a Pet
age	Integer	Age of a Pet
sex	String	Sex for a Pet

R2. Create a class Pet with the following attributes:**(5 marks)**
   _id,name,price,age,sex

R3. Create an abstract class PetManagementBase with the following methods for managing pets: **(5 marks)**
   - **create_pet()**: Create a new pet.
   - **delete_pet(pet_id)**: Delete a pet by _id.
   - **show_all_pets()**: Display all pets using an iterator.
   - **search_pet_by_name(pet_name)**: Search for a pet by name (partial matches allowed).
   - **search_pet_price_range(from_price, to_price)**: Search for pets a price range.

R4. Create a class PetManagement that inherits from PetManagementBase and implements the methods: **(70 marks)**
   - **create_pet() (15 marks)**
   - Validation for create:**(10 marks)**
      _id: Unique identifier (string, format: Pxxx, must be unique).
      name: Name of the pet (must not be empty).
      age: Age of the pet (positive integer).
      price: Price of the pet (positive float).
      sex: Gender of the pet (string, must be "Male" or "Female").
   - **delete_pet(pet_id) (10 marks)**
   - **show_all_pets() (10 marks)**
   - **search_pet_by_name(pet_name) (10 marks)**
   - **search_pet_price_range(from_price, to_price)** (to_price > from_price) **(15 marks)**
   - Implement user login logic based on roles: **(15 marks)**
            users = {
                "fptaptech@gmail.com": {"password": "admin123", "role": "Admin"},
                "user@gmail.com": {"password": "user123", "role": "User"}
            }
      + If logged in as Admin, display the Admin menu with access to all functionalities.
      + If logged in as User, display the User menu with access to:
            1. show_all_pets()
            2. search_pet_by_name(pet_name)
            3. search_pet_by_price_range(from_price, to_price)

Note: All the marks are evaluated on The Console Interface.