

Code Academy
Full Stack Development Stream - Batch 3
Homework 1 – Week 4 Due Date: Dec 5th, 2023 @ 11:59 pm

Problem Statement: Minimalist Zoo Animal Management System

First create the **Schema Diagram** of the system and then Design a minimalist Zoo Animal Management System using object-oriented programming concepts such as classes, **inheritance**, and **enums**.

1. Animal Class:

- Create a base class, `Animal`, with attributes like `name`, `age`, and `species`.
- Implement a constructor to initialize these attributes.

2. Animal Enums:

- Introduce an enum, `DietType`, to represent the diet type of each animal. Possible values might include CARNIVORE, HERBIVORE, and OMNIVORE.
- Utilize this enum to categorize animals based on their dietary habits.

3. Animal Categories:

- Create derived classes for specific animal categories like `Mammal`, `Bird`, and `Reptile`. Each should inherit from the `Animal` class and have unique properties and behaviors.

4. Animal Actions:

- Implement methods within each animal class to represent general actions. For example, `make_sound()` or `move()` for all animals, and specific actions like `fly()` for birds or `swim()` for reptiles.

5. Zoo Enclosures:

- Design a `Zoo` class to manage different enclosures for animals.
- Implement methods to add animals to specific enclosures and display the animals within each enclosure.

Feel free to adjust or expand upon this problem statement based on your specific preferences or requirements!



Welcome to the Minimalist Zoo Animal Management System!

1. Add Animals to the Zoo:

Enter Animal Name: Lion

Enter Animal Age: 5

Enter Animal Species: Panthera leo

Select Animal Diet Type (1. Carnivore, 2. Herbivore, 3. Omnivore):1

Animal Added Successfully!

2. Display Zoo Animals:

Animal: Lion, Age: 5, Species: Panthera leo, Diet: Carnivore

3. Add More Animals:

Enter Animal Name: Eagle

Enter Animal Age: 3

Enter Animal Species: Aquila chrysaetos

Select Animal Diet Type (1. Carnivore, 2. Herbivore, 3. Omnivore):1

Animal Added Successfully!

4. Display Zoo Animals:

Animal: Lion, Age: 5, Species: Panthera leo, Diet: Carnivore

Animal: Eagle, Age: 3, Species: Aquila chrysaetos, Diet: Carnivore

5. Observe Animal Actions:

- Lion makes a roaring sound.

- Eagle soars through the sky.

6. Exit

Thank you for using the Minimalist Zoo Animal Management System!

