Ecosystem Simulation Program

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1 Introduction

This Python program simulates an ecosystem using object-oriented programming principles. It models various plant and animal species, their interactions, and their behaviors in a habitat over a specified number of rounds.

2 Installation

To run this program, you need Python installed on your system. You can download it from `https://www.python.org/downloads/`.

2.1 Dependencies

Make sure to have the following libraries available:

- Python (3.6 or later)

3 Usage

To execute the program, run the following command in your terminal:

```
python ecosystem.py
```

The program will prompt you for the following inputs:

- Number of simulation rounds
- Number of Tulips
- Number of Bushes
- Number of Trees
- Number of Koalas
- Number of Pigs
- Number of Lions
- Habitat size

4 Classes Overview

The program consists of several key classes:

- **ecosystem**: Initializes the ecosystem simulation with a specified number of rounds.
- **habitat**: Represents the habitat, including its size and reproduction factor.
- **pflanzenart1, pflanzenart2, pflanzenart3**: Represent different plant species with methods for growth, aging, dying, and interactions.
- **Pflanzenfresser**: Represents herbivores, including methods for aging, dying, reproduction, and feeding.
- **Allesfresser**: Represents omnivores with similar methods as herbivores.
- **Fleischfresser**: Represents carnivores with methods for hunting and feeding.
- **pflanzenfresserliste, allesfresserliste, fleischfresserliste**: Manage lists of herbivores, omnivores, and carnivores, respectively.

5 Results

At the end of the simulation, the program outputs the following information:

- The total number of plants and their biomass.
- The number of happy Koalas, Pigs, and Lions in the habitat.

6 Conclusion

This program serves as a basic simulation of an ecosystem, demonstrating how species interact and how population dynamics can evolve over time. Feel free to modify and expand the code for more complex simulations!

7 License