# Virtual Pet Simulator - Documentation

## Introduction

The Virtual Pet Simulator is an interactive application that allows users to simulate owning and caring for virtual pets. Users can buy pets, feed them, play with them, and monitor their health. The project utilizes encapsulation, file handling, and abstraction for a modular and maintainable design.

## Features

1. View a list of available pets with their prices.

2. Buy pets and name them.

3. Feed pets to reduce their hunger levels.

4. Play with pets to increase their happiness levels.

5. Check the health status (hunger and happiness) of pets.

6. Save and load pet data using CSV files.

## Design and Implementation

The project is divided into three main modules:

### 1. pet.py

Defines the `Pet` class which encapsulates the properties and behaviors of a pet. Attributes like species, price, hunger, happiness, and name are private, ensuring controlled access via getter and setter methods.

### 2. simulator.py

Implements the `VirtualPetSimulator` class, which manages the collection of pets, user balance, and provides methods for interacting with pets. It also handles file operations for saving and loading pet data.

### 3. main.py

Serves as the entry point for the application. It provides a user interface for interacting with the simulator through a menu-driven system.

## File Structure

1. pet.py: Contains the Pet class definition.

2. simulator.py: Contains the VirtualPetSimulator class definition.

3. main.py: Entry point for the application.

## Future Enhancements

1. Add more interactive activities for pets.

2. Include additional pet attributes such as energy and health points.

3. Implement a graphical user interface for better user experience.

4. Introduce multiple pet ownership and competition features.

## Conclusion

The Virtual Pet Simulator provides a fun and engaging way to manage virtual pets. Its modular design ensures scalability and ease of maintenance.