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Foundations of Programming, Python

Assignment 06

<https://github.com/SeattleAaron/IntroToProg-Python-Mod06>

More On Separation of Concern

Introduction

One element in this week's module was applying the principle of separation of concerns to our code. I attempted to find a formal documented process for applying the principle, but I was surprised to discover that there is not one. Instead, there are guidelines for different ways to organize code, and the programmer can choose which style works best. The primary takeaway is to try to write bite-sized code broken into manageable grouped chunks by applying modularization, encapsulation, layered architecture, configuration management, and clear documentation.

Modularization

Modularization is a software design technique that breaks a program into smaller, self-contained modules, each handling a specific functionality. This approach improves code organization, maintainability, and reusability by allowing independent development and minimizing interdependencies. Each module has a well-defined interface and encapsulates its implementation details.

Encapsulation

Encapsulation is a software design principle that restricts direct access to an object's internal state and allows modification only through well-defined interfaces. This approach enhances data integrity, security, and code maintainability by hiding implementation details and exposing only necessary functionality.

Layered Architecture

Layered architecture is a design pattern that organizes software into distinct layers, each with specific responsibilities. This structure improves code maintainability, scalability, and separation of concerns by ensuring each layer handles a different aspect of the application, such as presentation, business logic, or data access, and interacts with other layers through well-defined interfaces.

Configuration Management

Configuration management is a practice that involves systematically handling and maintaining software settings and configurations. It improves consistency, reliability, and scalability by storing configuration details separately from the code, often using files or environment variables. This allows for easier updates, version control, and deployment across different environments.

Summary

By practicing these concepts and documenting them well, my projects will be easier to maintain.