Governor House Assignment

Introduction

This document outlines the assignments assigned by the Governor House. The assignments consist of multiple Python-related tasks, including introductory concepts, small projects, and intermediate-level projects. These assignments are designed to strengthen fundamental programming skills, logical thinking, and problem-solving abilities using Python.

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Assignment 1: Python Fundamentals

This assignment focuses on key foundational concepts in Python programming. It includes six modules, each covering an essential topic:

1. **00_intro_python - An introduction to Python programming, covering the basics such as syntax, data types, and simple operations.**
2. **01_expressions - Understanding expressions, arithmetic operations, and how Python evaluates expressions.**
3. **02_lists - Introduction to lists, their properties, methods, and how to manipulate list elements.**
4. **03_if_statements - Understanding conditional statements, their syntax, and how they help in decision-making.**
5. **04_dictionaries - Working with dictionaries, understanding key-value pairs, and how to store and retrieve data efficiently.**
6. **05_loops_control_flow - Learning about loops (for and while), control flow mechanisms, and iterative processing in Python.**

🔗 **Assignment 1 Link: https://github.com/panaversity/learn-modern-ai-python/tree/main/PROJECTS/homework_projects**

These topics provide a strong foundation for programming and prepare students for more advanced concepts.

Assignment 2: Basic Python Projects

In this assignment, there are two folders: "01_basics" and "02_intermediate". We need to work on the "01_basics" folder, which contains the following five Python projects:

1. **00_joke_bot.md - A simple chatbot that tells random jokes to the user. This project helps understand user input, random module usage, and basic string manipulation.**
2. **01_double_it.md - A program that takes a number from the user and returns double its value. This project introduces function definitions and user input handling.**
3. **02_liftoff.md - A countdown program that prints a countdown sequence leading to "Liftoff!". It covers loops, time delays (using time.sleep), and formatted printing.**
4. **03_guess_my_number.md - A number guessing game where the user tries to guess a randomly generated number. This project includes random number generation, loops, and conditional statements.**
5. **04_random_numbers.md - A program that generates and prints random numbers based on user input. It covers the random module and basic control flow.**

🔗 **Assignment 2 Link** https://github.com/panaversity/learn-modern-ai-python/tree/main/PROJECTS/online_class_projects

These projects reinforce key programming concepts while making learning interactive and enjoyable.

Assignment 3: Intermediate Python Projects

This assignment consists of nine projects, out of which six need to be completed. These projects are more advanced and help in developing problem-solving skills.

1. **Project 1: Mad Libs Python Project - A word replacement game where users provide random words that are inserted into a pre-defined story, creating humorous outcomes. This project covers string manipulation and user input handling.**
2. **Project 2: Guess the Number Game (Computer) - In this version, the computer tries to guess a number that the user is thinking of. The user provides feedback (higher/lower) until the computer guesses correctly. This project introduces binary search concepts and logical loops.**
3. **Project 3: Guess the Number Game (User) - The user attempts to guess a randomly generated number by the computer. The program provides hints (higher/lower) until the correct number is guessed. This project focuses on loops, conditionals, and random number generation.**
4. **Project 4: Rock, Paper, Scissors Python Project - A command-line implementation of the classic Rock-Paper-Scissors game. The user plays against the computer, and the program determines the winner. This project covers decision-making and user interaction.**
5. **Project 5: Hangman Python Project - A word guessing game where the user guesses letters in a hidden word. The program provides visual feedback (e.g., underscores for unguessed letters) and keeps track of incorrect attempts. This project enhances string manipulation, loops, and list usage.**
6. **Project 6: Countdown Timer Python Project - A timer application that counts down from a specified number of seconds to zero. This project involves loops, time-based functions (time.sleep), and user input handling.**

🔗 **Assignment 3 Link: https://github.com/panaversity/learn-modern-ai-python/blob/main/PROJECTS/projects_to_be_submitted_by_students/readme.md**

These intermediate projects help in building logic and improving problem-solving skills using Python.

Submission Form

After completing the assignments, students must submit their work through the submission form.

🔗 **Submission Form: https://forms.gle/tS7C3sr55tUZ36GY8**

Conclusion

This document provides a structured guide for completing the assigned Python projects. Each assignment is designed to progressively build programming skills, from fundamental concepts to interactive projects. Completing these tasks will help develop a strong foundation in Python and enhance practical coding experience.