Python Programming Extra Assignment

Objective

This assignment is aimed at deepening your understanding and skills in Python programming through a detailed presentation on key Python topics. It offers an opportunity to improve your grade while reinforcing your programming knowledge.

Topics to Cover

You are required to cover the following Python concepts in your presentation:

- Variables: How to declare and utilize variables.
- Operators: Utilization of arithmetic, comparison, logical, and assignment operators.
- Lists: Methods for creating, manipulating, and accessing list elements.
- Dictionaries: Managing key-value pairs, including accessing and modifying dictionary data.
- Tuples: The concept of immutability and usage of tuples.
- Sets: Understanding set characteristics and operations.
- If-Else Statements: Implementing conditional logic.
- Loops: Using for and while loops for iterations.
- Functions: Function definition, arguments, return values, and scope.
- File I/O: Techniques for reading from and writing to files.
- Object-Oriented Programming (OOP):
    - Inheritance: How to extend classes to create subclasses.
    - Encapsulation: Methods to restrict access to methods and variables.
    - Polymorphism: Implementing a unified interface for various data types.

Assignment Format
- Presentation Slides: Create a slide deck for your presentation. While there is no strict requirement on the number of slides, your presentation should be comprehensive enough to last at least 40 minutes.
- Video Presentation: Record a presentation of yourself discussing the topics using the slides as guidance. Make sure the presentation is clearly audible and visually clear.
    - The video should be uploaded to YouTube.
    - Adjust the video privacy settings to "Unlisted" to maintain privacy while allowing Dr. Kim and the TAs to access it through the link.

Submission Requirements
- YouTube Link: Submit the URL to your video presentation on YouTube, ensuring it is accessible to Dr. Kim and the teaching assistants.
- Slide File: Submit your presentation slides. Acceptable formats include PowerPoint (.ppt, .pptx), PDF, or a shared link to Google Slides.

Eligibility
- All students are eligible for this extra assignment, including those who scored 90 or above on Exam 1.

Grade Improvement
- Successfully completing this assignment will result in an addition of 15 points to your Exam 1 score. For instance, a current score of 70 on Exam 1 (including makeup) will be increased to 85 upon completion.

Important Notes
- Examples: Your presentation must include example codes for each topic. These examples should illustrate how each concept works and how it can be applied in real-world programming scenarios.
- Deadline: The deadline for this assignment will be announced later. Please stay tuned for updates.

Evaluation Criteria
- Coverage of Topics: All topics must be covered comprehensively.
- Clarity and Depth: The presentation should clearly explain the concepts with detailed examples.
- Presentation Skills: Effective communication, audience engagement, and organization of content will be assessed.
- Technical Accuracy: The information and examples provided must be correct and relevant.
- Presentation time: minimum 40 min.