**CSE 212 – Programming with Data Structures**

**W10 Prove – Response Document**

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**Question 1: Provide the outline for the data structures tutorial you are creating for the final project. Use the Python Fundamentals Tutorial outline provided in the assignment instructions as an example.**

Introduction

Welcome to the Python Data Structures Tutorial.

Explain the importance of data structures in programming.

Mention the three data structures covered in the tutorial.

Contact

contact information for any questions or assistance.

Data Structure 1: Stack

Introduction to stacks and their characteristics.

Implementing a stack using a list or array.

Stack operations: push, pop, peek.

Example: Implementing a stack and performing basic operations

Data Structure 2: Linked List

Introduction to linked lists and their characteristics.

Implementing a linked list using nodes and references.

Linked list operations: insertion, deletion, traversal.

Example: Implementing a linked list and performing basic operations.

Data Structure 3: Tree

Introduction to trees and their characteristics.

Tree terminology: nodes, edges, root, parent, child, leaf.

Types of trees: binary trees, binary search trees, balanced trees.

Tree traversal: pre-order, in-order, post-order.

Example: Implementing a binary search tree and performing basic operations.

Conclusion

Recap of the covered data structures: stack, linked list, and tree.

Highlight the different use cases and advantages of each data structure.

Encouragement to further explore Python data structures.

Thank participants for completing the tutorial.