**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.**

1. WELCOME
   1. Introduction
   2. Topics
   3. Contact
2. QUEUE
   1. Introduction
   2. Real-life uses
   3. General examples of queues
   4. Python syntax:
      1. Enqueue
      2. Dequeue
      3. Size
      4. Empty
   5. Specific Python examples
   6. Efficiency
   7. Differences between queues and stacks
   8. Problems
   9. Definitions
3. LINKED LIST
   1. Introduction
   2. Real-life uses
   3. General examples of linked lists
   4. Implementing linked lists in Python
   5. Inserting node:
      1. Beginning
      2. Middle
      3. End
   6. Removing node:
      1. Beginning
      2. Middle
      3. End
   7. Accessing data
   8. Specific Python examples
   9. Efficiency
   10. Differences between linked lists and regular lists
   11. Problems
   12. Definitions
4. TREES
   1. Introduction
   2. Real-life uses
   3. General examples of tree structures
   4. Implementing tree data structures in Python:
   5. Types of trees data structures in Python:
      1. Binary trees
      2. Binary Search Trees
      3. Balanced Binary Search Trees
   6. Inserting value
   7. Removing value
   8. Accessing value
   9. Visit all objects in tree:
      1. Forward
      2. Backwards
   10. Check tree’s size
   11. Check tree’s height
   12. Check if tree is empty
   13. Python examples
   14. Problems
   15. Definitions