**Data Structures and Algorithms 2 – C950: Write Up**

**Brady Bassett**

**Western Governors University**

**C950 – Data Structures and Algorithms 2**

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**Algorithm Identification**

In order to solve this problem, I used a combination of two different algorithms in order to get the result I desired. The first algorithm that is used is Prims Algorithm. This algorithm is a greedy algorithm designed to find a minimum spanning tree for a weighted undirected graph. By selecting a node in the graph at random the algorithm can initialize the tree from this node, growing it by finding the minimum weight edge connected to that node and then added the node as a child to the parent. This is repeated, ignoring all visited nodes, until all nodes are in the tree.

The second algorithm use is the Depth-first Search algorithm. This algorithm is designed to traverse trees or graph data structures, starting from a root node and traveling as far down each branch as possible before backtracking.

**Algorithm Pseudocode**

**Development Environment**

**Space-Time and Big O**

**Scalability and Adaptability**

**Software Efficiency and Maintainability**

**Self-Adjusting Data Structures**

**Original Code**

**Identification Information**

**Process and Flow Comments**

**Data Structure**

**Explanation Of Data Structure**

**Hash Table**

**Look-Up Function**

**Interface**

**First Status Check**

Time entered: 8:50:00

**Shape

Description automatically generated with medium confidenceShape

Description automatically generated with medium confidence**

**Second Status Check**

Time entered: 9:50:00

**Shape

Description automatically generated with medium confidenceShape

Description automatically generated with medium confidence**

**Third Status Check**

Time entered: 12:05:21

**Shape

Description automatically generated with medium confidence** **Shape

Description automatically generated with medium confidence**

**Screenshots of Code Execution**

**A picture containing graphical user interface

Description automatically generated** **Shape

Description automatically generated with medium confidence** Shape

Description automatically generated with medium confidence Shape

Description automatically generated with low confidence Shape

Description automatically generated with medium confidence

**Strengths of Chosen Algorithm**

**Verification of Algorithm**

**Other Possible Algorithms**

**Algorithm Differences**

**Different Approach**

**Verification of Data Structure**

**Efficiency**

**Overhead**

**Implications**

**Other Data Structures**

**Data Structure Differences**

**Sources**