What type of data structure would you implement if you require the ability to perform updates and queries directly on the contents without affecting the data structure?

Mutable. A mutable data structure facilitates operations to be performed on its contents.

Which type of data structure would you use if you needed to store some data that would grow dynamically, using nodes to reference an element's position in the data structure?

A linked list. A linked list contains two pieces of information: The data and a pointer to the next list item.

Which data structure would you choose if you wanted to create a collection of elements where you needed to access the last element entered into the collection first?

Stack. A stack works with a strict First-In-Last-Out or FILO basis, which means that items can only be retrieved from the top of the stack, or the most recently added element.

Which of the below names can be used to describe a tree node:

Child. Each subsequent node that is connected down the tree from a parent or root node is referred to as a child node.
Parent. A parent node can have a connected set of children nodes.
Root. The top level node of a tree is referred to as the root.
Sibling. Nodes that have the same parent are referred to as siblings.
Leaf. Nodes with no children are referred to as leaf nodes.

Given an array of 12 numbers -> 1, 4, 65, 34, 2, 45, 87, 12, 65, 2, 6, 98 And a hashing function modulus 7. How many collisions would you expect to have in your table?

Given this array of numbers [1, 4, 2, 6, 2, 3, 3, 5, 2, 2, 6, 0] this would equal to 5 collisions.

Which of the following types of memory is described in the following statements?

This memory relates to external memory that can be plugged in externally and used to increase the storage capacity of your system. Accessing this type of memory is slower and requires transferring all required information and instructions into RAM.

Secondary memory relates to external memory that can be plugged in externally and used to increase the storage capacity of your system. Accessing this type of memory is slower and requires transferring all required information and instructions into RAM.

An undirected graph has an order of precedence.

False. In contrast to a directed graph, an undirected graph doesn't have an order of precedence.