* What exactly is an application tree?

* What is pre-order tree traversal and how does it work?

Each node is treated before (pre) either of its subtrees in preorder traversal. This is the most straightforward traversal to comprehend. Even though each node is processed before the subtrees, it is still necessary to keep some information while traveling down the tree.

Preorder traversal is defined as follows:

• Visit the root.

• Traverse the left subtree in Preorder.

• Traverse the right subtree in Preorder.

That means we must maintain the root information before moving to the right subtree which comes after processing the left subtree. Stack is a proper data structure to use to save the data before moving. Because stack's structure is LIFO, we can get information about right subtrees back in reverse order.

* What is the problem with the Hanoi Tower?

The problem is we can't move stack of disks from one place to another putting big disk on top of small disk. That's why when we need to replace stack of the disks this process takes 2**N-1 times of steps. To solve this problem requires 3 roads and 7 steps(2**3 -1) to change the position of 3 disks as in the rule of Hanoi Tower.

* Can you explain the distinction between linear and nonlinear data structures?

Elements inside Linear data structures are accessed in a sequential order. The location of elements of linear data structure are not contiguous. However, it is not mandatory to keep all elements sequentially. We can imagine linked lists, stacks, queues when we talk about linear data structures. All operations for these data structures are performed in a sequential way. Non-linear data structures on the other hand store elements in a non-linear order. They can be used to define the relation between two elements and single elements can have multiple relationships with other elements. Tree and graphs are examples for non-linear data structures.

* What is the distinction between a list and an array?

Array stores homogenous data values, but list can store different types of data values. For example, you can see string, integer, float even list inside list. But you can see only one of these data types inside array. Array has an advantage in performing mathematical operations, lists are less efficient from this side. Besides that, list is built-in data type, but array needs to be imported from Numpy library.