1. What is an Abstract Data Type (ADT)?

* It is a model of a data structure including all the functions required for the data structure.

2. Explain the difference between a queue (FIFO) and a stack (LIFO).

* FIFO is first in, first out. This means that data will be retrieved in the same order that it was inserted. LIFO is last in, first order. This means that data will be retrieved in the reverse order as it was inserted

3. Name and briefly explain three types of data structures.

* List: Linear data structure. Each node is connected to the next and/or previous node. Can be a stack, queue, etc.
* Tree: Data is stored in a hierarchical structure. Has parent and child nodes.
* Table: Data is stored in rows and columns.

4. Explain what a binary tree is, what are some common operations of a binary tree?

* A binary tree is a data structure which is organized such that each node has two children. The child on the left is always smaller than the parent. The child on the right is always larger than the parent. Some functions are getLeft(), getRight(), getParent().

5. Explain what a hash table (dictionary) is, what are common operations of a hash table?

* A hash table is a data structure that is used to map keys to values. It uses a hash function to generate a key and store the index of a value so it can be accessed easily.