### Project

### 2a

Array: An array is a collection of elements stored at contiguous memory locations, providing constant-time access to elements using an index.

Linked List: A linked list is a linear data structure where elements are stored in nodes, and each node points to the next node in the sequence. It allows for dynamic memory allocation and efficient insertion/deletion operations.

Stack: A stack is a linear data structure that follows the Last In, First Out (LIFO) principle, supporting push (adds an element to the top) and pop (removes the top element) operations.

Queue: A queue is a linear data structure that follows the First In, First Out (FIFO) principle, supporting enqueue (adds an element to the rear) and dequeue (removes the front element) operations.

Tree: A tree is a hierarchical data structure consisting of nodes connected by edges. It has a root node at the top and child nodes branching out from the root.

Binary Search Tree (BST): A binary search tree is a type of binary tree where the left child of a node contains a value less than the node's value, and the right child contains a value greater than the node's value. It enables efficient searching, insertion, and deletion operations.

Heap: A heap is a specialized tree-based data structure satisfying the heap property. It's commonly used to implement priority queues.

Hash Table: A hash table is a data structure that stores key-value pairs, using a hash function to compute an index where an element can be stored or retrieved in constant time.

Graph: A graph is a non-linear data structure consisting of nodes (vertices) and edges. It's widely used to represent relationships between entities in various applications.

Trie: A trie is a tree-like data structure used to store a dynamic set of strings, where each node represents a single character of the string.