

Everyday Efficiency:

The Role of Data Structures in our Daily Lives

Data Structure	Definition	Use Cases	Explanation
List	A linear data structure that stores elements in a sequence.	Twitter feeds, shopping cart, to-do list.	The elements in a list are arranged in order, and can be accessed by their index.
Stack	A linear data structure that stores elements in a last-in, first-out (LIFO) order.	Undo/redo in word processors, function call stack.	The elements in a stack are added and removed from the top of the stack.
Queue	A linear data structure that stores elements in a first-in, first-out (FIFO) order.	Printer jobs, waiting line, message queue.	The elements in a queue are added and removed from the front of the queue.
Heap	A tree-based data structure that stores elements in a priority order.	Task scheduling, sorting.	The elements in a heap are arranged so that the element with the highest priority is always at the top of the heap.
Tree	A hierarchical data structure that stores elements in a tree-like structure.	HTML document, file system, family tree.	The elements in a tree are arranged in a parent-child relationship.
Suffix Tree	A tree-based data structure that stores all the suffixes of a string.	Search string in a document, spell checker.	The suffix tree of a string is a tree where each node represents a substring of the string.
Graph	A network data structure that stores nodes and edges.	Friendship network, road network, social network.	The nodes in a graph represent entities, and the edges represent

			relationships between entities.
R-tree	A tree-based data structure that stores spatial data.	Nearest neighbor search, spatial indexing.	The R-tree is a tree-based data structure that is used to store spatial data.