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DAA HANDS ON 9

Hash Table:

A hash table is a data structure that stores key-value pairs.

It employs a hash function to find the correct array index to store the value alongside its key.

Hash Function:

The multiplication and division method is used to create an index based on the key. The key is multiplied by a constant ($A = 0.618033$ is the golden ratio), and the fractional part is designed to calculate the array position.

Collision Resolution (Chaining):

A collision happens when two keys are hashed to the same index. To solve this, each array slot contains a doubly linked list.

If more than one key belongs to the same index, they are all located in a linked list at that index.

Doubly Linked List:

A linked list which is a situation where each node has pointers to the following and previous nodes. This feature enables us to carry out tasks like insert, find, and remove operations in a fast manner.