LEETCODE TUESDAYS

CYCLE DETECTION

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“If someone asks for your patience they are asking for your surrender”

— Mr.Robot S04E03

01

LINKED LISTS & SETS

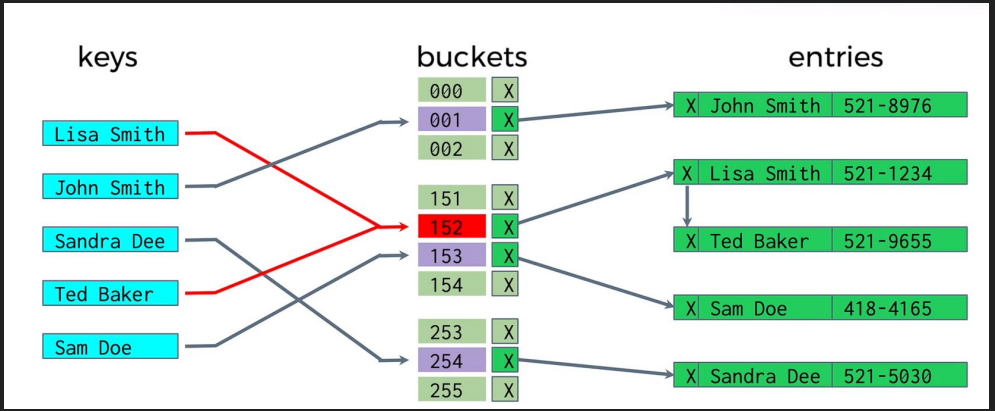
What's a Linked List?

HASH SETS

A HashSet is a collection of items where every item is unique, and it is found in the java.util package.

A hash table is different than a sorted array because the keys are not ordered and the location of entries is randomized (via the hash function)

If two keys map to the same location, a **collision** has occurred — collisions are handled by maintaining a LinkedList of objects at each array location.



LINKED LISTS

Linked List Node Contains:

- Data
- Pointer to Next Node
- Pointer to Prev Node if applicable

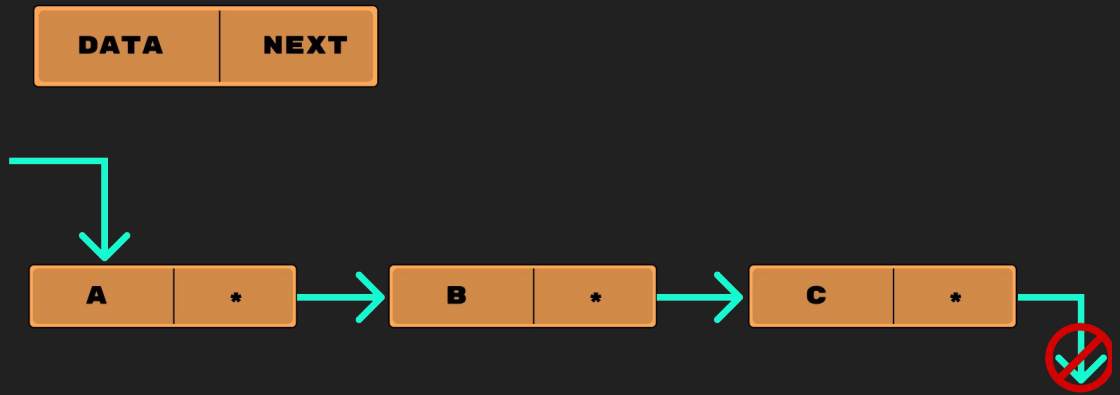
```
// Init a Linked List
Class Node {
        int data;
        Node next; // points to null by default
        Node(int data) {
                this.data = data;
        }
}

// To populate linked list, create the new nodes (point to null)
Node head = new Node(1);
Node nodeB = new Node(2);
Node nodeC = new Node(3);
Node nodeD = new Node(4);
Node nodeE = new Node(5);

// Point to the nodes to each other
head.next = nodeB;
nodeB.next = nodeC;
nodeC.next = nodeD;
nodeD.next = nodeE;
```

TYPES OF LINKED LISTS

Linked Lists are part of newer languages that allow us to add and remove nodes easily.

In comparison, while arrays are a standard part of any language, their limitation is that they remain static once declared.

SINGLY LINKED LIST

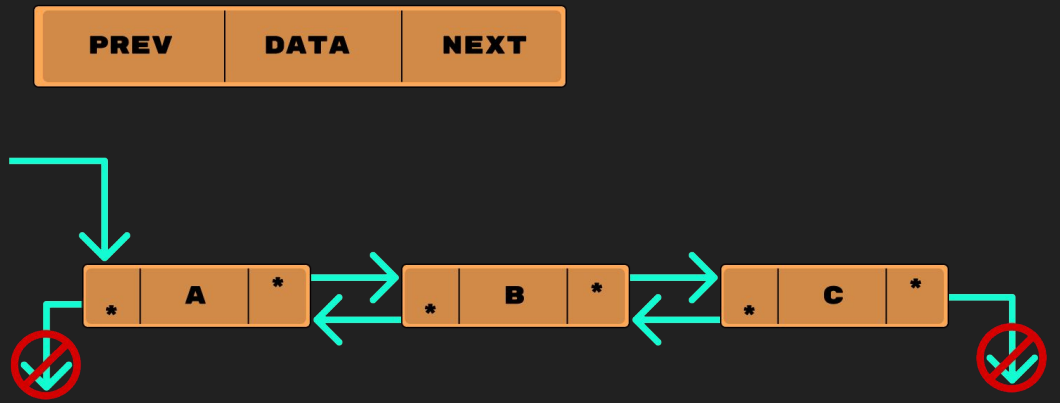


TYPES OF LINKED LISTS

Common Linked List Operations

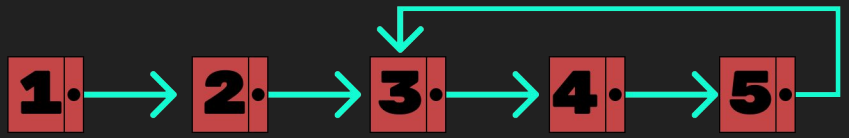
- Checking whether a list is empty
- Traversing the list
- Accessing an element
- Finding the length of a list
- Inserting or deleting an element

DOUBLY LINKED LIST



TYPES OF LINKED LISTS

CYCLE DETECTION

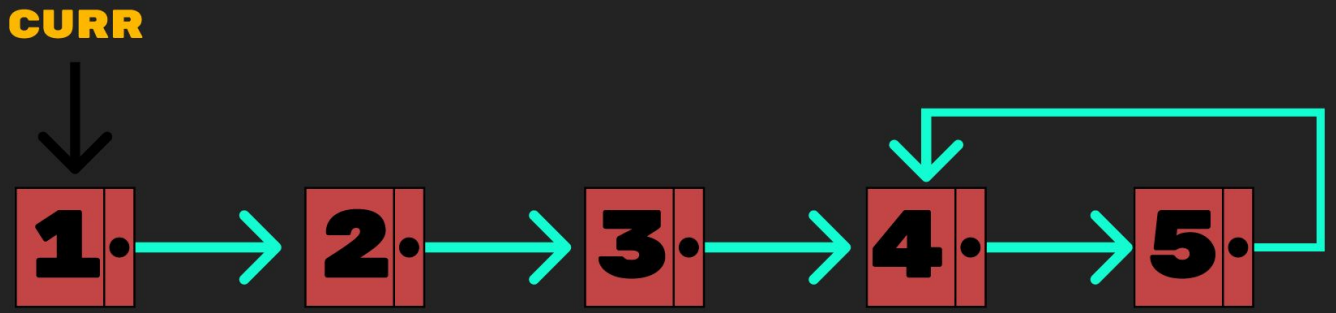


02

CYCLE DETECTION

Let’s start learning!

TECHNIQUE IN ACTION



SET OF VISITED NODES:
{1}

LINKS

FOR MORE INFO ON THIS SERIES/LOOK AT THE SOURCE CODE, VISIT THE SITE!

JOIN THE CS CLUB DISCORD TO FIND MORE OPPORTUNITIES LIKE THIS ONE!

SEE YOU NEXT SESSION!

Have a good night! :)

Next Session on Heap Data Structures!

Do you have any questions?

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