Data Structures

lecture 12
19-10-2022

Last Session Quick Revision

Unit 2: Linked List

Linked List Types

- Simple Linked List (Singly Linked List)
- Doubly Linked List
- Circular Linked List
  - Singly circular
  - Doubly circular

Singly Linked List

- Simple Linked List (Singly Linked List)
  - One data and One next

  - Item navigation is forward only.
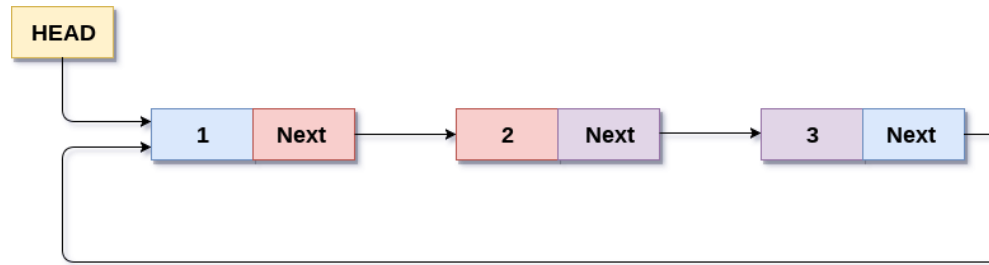
Doubly Linked List

- Doubly Linked List
  - One data one previous and one next

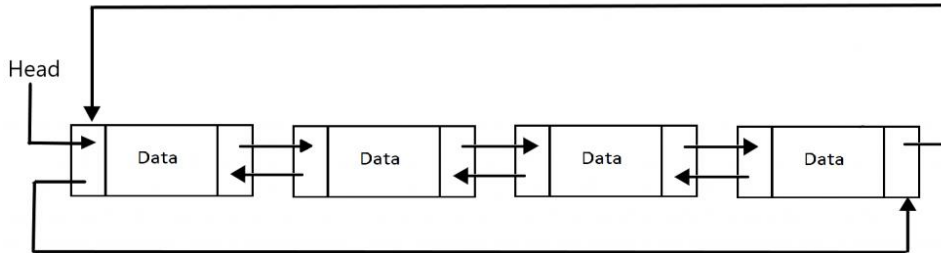 - can be navigated forward and backward.

Singly Circular Linked List

- Last node contains address of first node.

Doubly Circular Linked List

- Last node contains address of first node and vice versa.

Basic Operations on the Linked List

- **Insertion** – Adds an element in the list.

- **Traverse /Display** – visit every element **and display the complete list.**

- **Retrieval / Search** – **Searches an element using the given key**.

- **Delete** – **Deletes an element**

Insert Operation: Insert at the end

Insert Operation: Insert at the beginning

Insert Operation: Insert at specific position

Search Element in Linked List

Delete Node from the End

Delete Node from the beginning

Delete Node at specific position

Doubly Linked List

- Doubly Linked List
  - One data one previous and one next

  - can be navigated forward and backward.