LINKED LISTS

LESSON x

CODE FIRST GIRLS

NANODEGREE → ENGINEERING MODULE

AGENDA

01 Introduction to Linked List

02 Types of Linked List

03 Linked List implementation

04 Practice and Exercises

COMPLEXITY ANALYSIS

INTRODUCTION

HIGH LEVEL OVERVIEW

LINKED LIST ADVANTAGES

1) Dynamic size

2) Ease of insertion/deletion

- Structures like List, Tuple have fixed size. Inserting a new element in an array of elements is expensive because the room has to be created for the new elements and to create room existing elements have to be shifted.

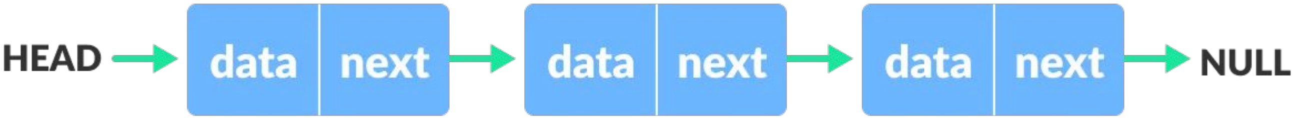
LINKED LIST DISADVANTAGES

1) Random access is not allowed. We have to access elements sequentially starting from the first node.

2) Extra memory space for a pointer is required with each element of the list.

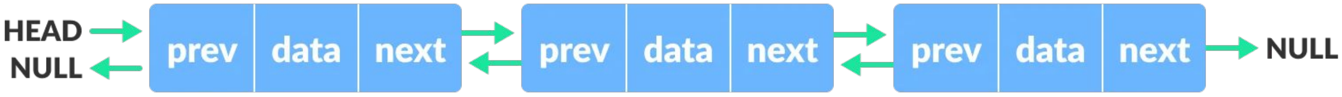
3) Not cache friendly.

SINGLY LINKED LIST



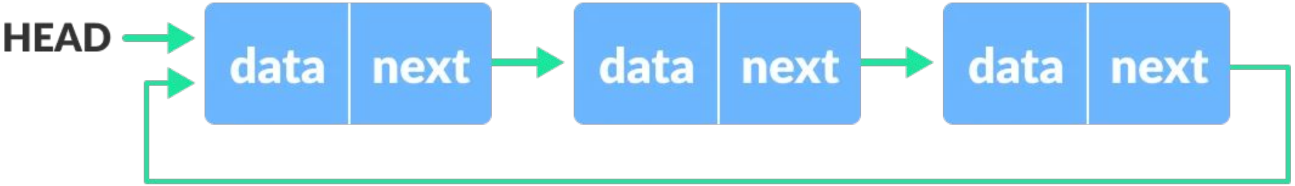
- Each node has data and a pointer to the next node.

DOUBLY LINKED LIST



- Additional pointer to the previous node in a doubly-linked list.
- Thus, we can go in either direction: forward or backward.

CIRCULAR LINKED LIST



- A circular linked list is a variation of a linked list in which the last element is linked to the first element. This forms a circular loop.
- A circular linked list can be either singly linked or doubly linked.

DEMO & EXERCISES

1. Implementing a LINKED LIST
2. EXERCISES & PRACTICE

THANK YOU!

CODE
FIRST
GIRLS