

# Unit 2 Build Week Pt. 3

## AGENDA

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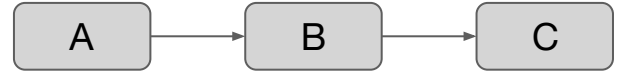
- Linked Lists
- Other Types of Interviews

# Linked Lists

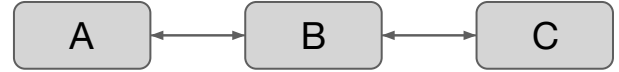
## LINKED LISTS REVIEW

- Comprised of nodes that store an arbitrary value (usually a string or a number)
- Each node has a *next* pointer or an optional *previous* pointer (if it's a doubly-linked list)

Singly-linked List



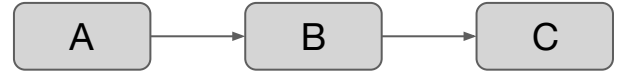
Doubly-linked List



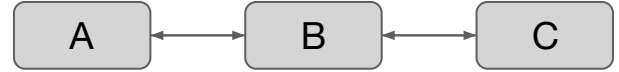
## LINKED LISTS: THINGS TO KNOW

- All problems deal with pointer-manipulation and traversing the list
- Common patterns in solving these problems:
  - Dummy-head
  - Two-pointer

Singly-linked List



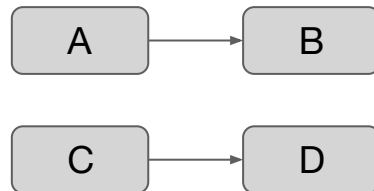
Doubly-linked List



## DUMMY HEAD

- Create a 'dummy head' node and construct a list using its *next* pointer
- Return *dummyHead.next* to return the newly constructed list
- Very useful when you need to manipulate pointers and create a list with the same nodes but different ordering
- Also very useful for edge-cases

Interleave Two Lists



Dummy Head



## ODD EVEN LINKED LIST

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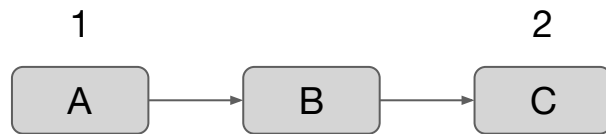
- Group all odd nodes together, followed by all even nodes
- [Leetcode Link](#)

# Odd Even Linked List Demo



## TWO-POINTER

- Use two pointers to manipulate references to nodes
- Also used to get certain information about list (e.g. detect cycle)



## REMOVING NTH NODE FROM LIST

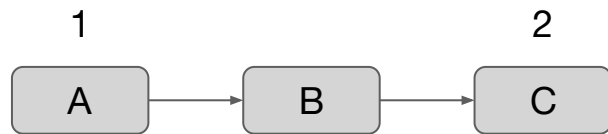
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- Remove Nth node from list
- [Leetcode Link](#)

# Remove Nth Node Demo

## TWO-POINTER

- Use two pointers to manipulate references to nodes
- Also used to get certain information about list (e.g. detect cycle)



## REMOVING NTH NODE FROM LIST

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- Remove Nth node from list
- [Leetcode Link](#)

# Remove Nth Node Demo

## Other Types of Interviews

## OTHER TYPES OF INTERVIEWS

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- There are other types of interviews besides general data structure/algorithmic interviews
- Other common types of interviews:
  - Screening
  - Behavioral
  - Role-specific
  - System Design
- Allocate your practice accordingly depending on the companies you're applying for



## SCREENING INTERVIEWS

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- Usually the first interview when applying
- Evaluate your qualifications and see if you would be a potential fit for the role
- Clarify any questions about your resume
- Ask about motivations in applying and what you're looking for
- Mostly non-technical and conducted by recruiters

## BEHAVIORAL INTERVIEWS

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- Understand your behavior in a working environment
- Ask about your soft-skills and working experience in a team
- There's usually at least one round of this during full-time/intern interviews
- Usually conducted by managers

## STAR METHOD

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- A popular framework to answer behavioral questions
- *Tell me about a challenging situation you had at work*
- **Situation** - Setup and describe the situation
  - *I was on-call and I got an alert that errors for our main backend service were spiking in the middle of the night.*
- **Task** - Explain your responsibility in the situation
  - *As on-call, my role is to make sure our services are stable and to triage/mitigate escalations when they happen.*
- **Action** - Describe the actions you took to accomplish the task
  - *I looked at the timeline for when the errors started, along with the changes that were made at that time. I found the offending change and reverted it.*
- **Results** - State the outcome of your actions
  - *The errors, which affected X users was mitigated in Y minutes. I also led a post-mortem afterwards, which led to creating more automated tests to prevent it from happening again.*

## ROLE-SPECIFIC INTERVIEWS

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- Deep-dive into your domain-specific knowledge (e.g. iOS, Android, Front-end Web, AI/ML, etc.)
- Could also be mixed with an algorithmic/data-structures interview
- Some companies have switched to fully doing these types of interviews (e.g. startups)

## SYSTEM DESIGN INTERVIEWS

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- Usually for experienced hires, not common for interns/new grads
- Understand how well you're able to design an end-to-end system that is either in/out of your normal domain of expertise
- Some companies use this to determine level in hiring
- Instead you might be asked an Object-oriented programming (OOP) question