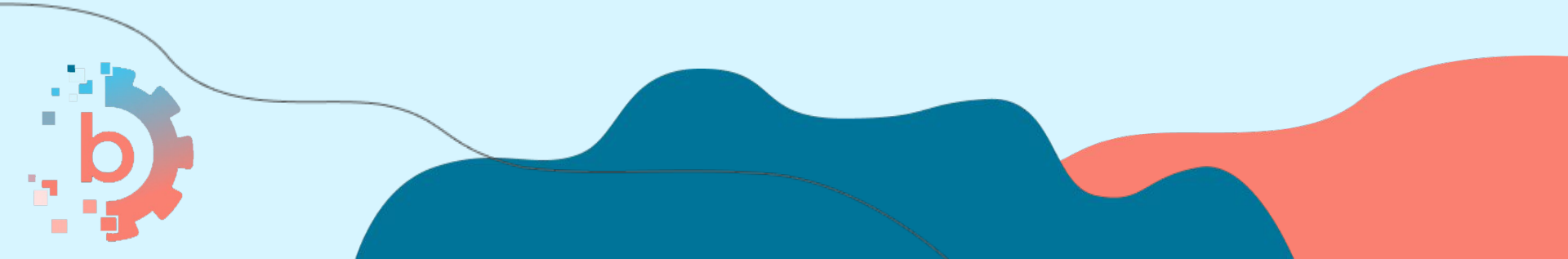
Welcome!

Bit by Bit Week 1



Introductions

Lets all get to know each other!

About Me

Name: Morgan Sorbaro

Hometown: Connecticut

Work Location: Boston

College: Dartmouth

Current Job: Facebook SWE

About You All

Name: ?

Hometown: ?

Major: ?

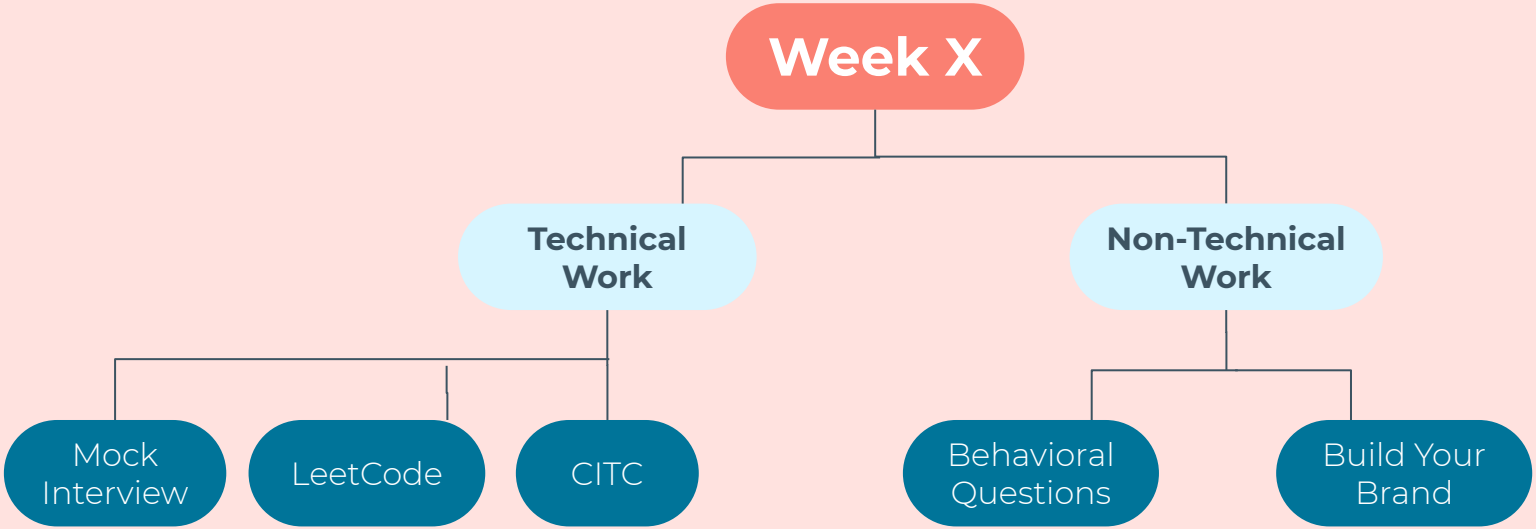
College: ?

Favorite Animal: ?

What’s going on

How this class will work

Each week will look like this



Technical

Mock Interview

I'll send a link to schedule your mock interview.

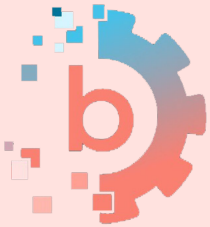
Interviews will be on the week's material so I recommend booking them later in the week after you have prepared.

Technical Review

Read through CTCI info

Attempt CTCI problems

Do LeetCode problems on your computer



Behavioral

Behavioral Question

Weekly question to practice

Come up with your own answer

Each week during your technical interview I will ask you the behavioral question for practice

Build your Brand

Work on the weekly material and send it to us in the designated slack channel by the Sunday meeting for review

5 Week Goals

Week 1

Review Arrays and Strings and Linked Lists

Mock interview

Edit LinkedIn

Practice Behavioral Question: “Tell Me About Yourself”

Week 2

Review Queues, Stacks and Big O

Mock Interview

Edit Resumes

Work on Behavioral Question: “What Role Do You Play On a Team”

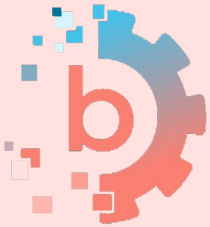
Week 3

Review Binary Trees, Graphs and Binary Search Trees

Mock Interview

New Behavioral Question: “Tell us about a personal project”

Finding Engineers to network with



5 Week Goals

Week 4

Recursion

Overview of networking for referrals

Mock Interview

New Behavioral Question: “What are your strengths and weaknesses”

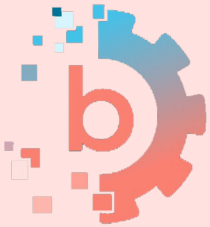
Week 5

Searching and sorting algorithms

Mock interview

New Behavioral: “Why are you interested in Company X”

Feedback on Github and Personal Websites

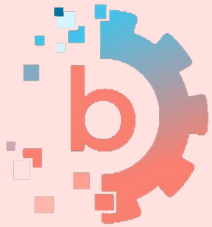


This Weeks Goals

What we will be working on

4 Pillars to Work on

1. **LeetCode**
   - Arrays and Strings Learn
   - Linked List Learn
2. **Cracking the Coding Interview**
   - Arrays and Strings Chapter
   - Linked List Chapters
3. **Behavioral Question**
   - Practice answering the question: “Tell me about yourself”
4. **Application Material**
   - Work on editing your LinkedIn
   - Send LinkedIn in slack



Technical Review

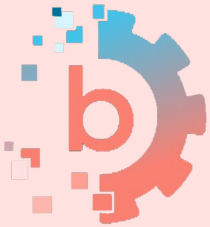
Thinking about Arrays, Strings and Linked Lists

Arrays

- Want to check if it is a dynamic array which amortizes adding. We double the array in size when we get to the end instead of copying everything over

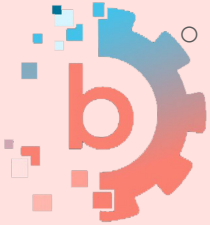
Action	Dynamic	Normal
Get element at index	O(1)	O(1)
Set element at index	O(1)	O(1)
Remove / add element at index i	O(n-i)	O(n)
Add element	O(1)	O(n)
Searching	O(n)	O(n)

Run Time Cheat Sheet



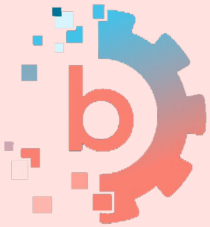
Common Tricks for Array Questions

- Use double pointers instead of a nested loop
  - This often helps make run time more efficient
  - Example: Continuous Subarray Problems
- For 2D arrays, break down question into smaller subsets
  - Often times it seems like you have to do everything the question asks only using one loop, but sometimes breaking steps out into different loops or sections can help you come to an answer
  - Example: Rotate a square 90 degrees. The first step would be to flip across a diagonal and the second is to flip vertical. This would have the same runtime as doing it all in one step if done correctly.
- Hash tables are your friend!
  - Helps you find if there are duplicate items

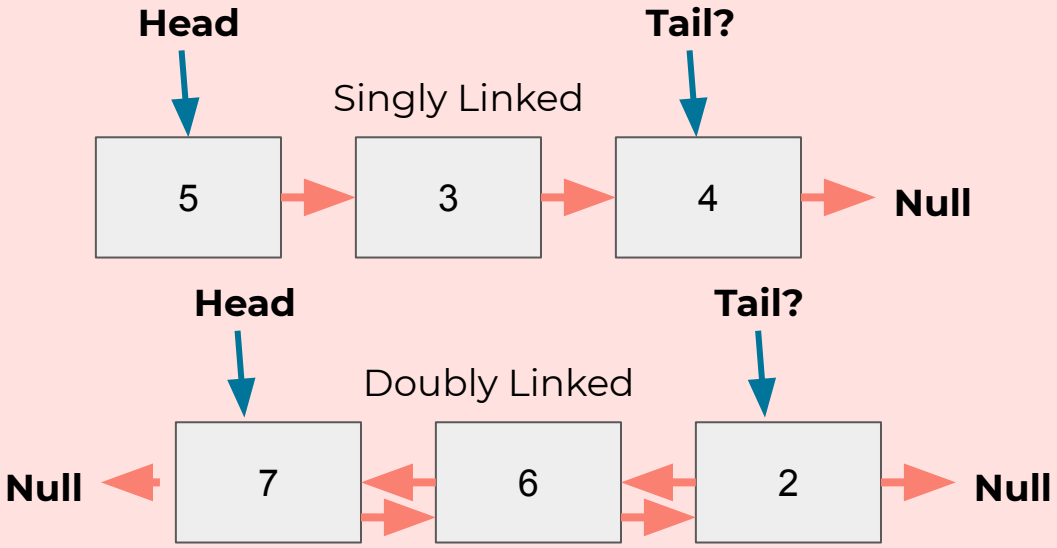


Strings

- Implemented as Arrays so use same runtimes there
- Depending on the language, Strings can be managed in different ways
    - In Java, Strings are immutable and you need to use the String Builder Class
- Make sure to memorize String methods for your language of choice - you don't want to accidentally be converting your character into ASCII instead of making it a number
- Again HASH TABLES!



Linked Lists

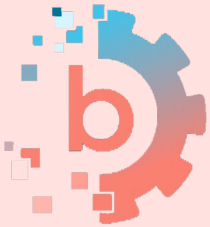


Action	Runtime
Get element at index	O(n)
Set element at index	O(n)
Remove	O(1)
Add element	O(1)
Searching	O(n)

Run Time Cheat Sheet
*Assume remove / Adding from Front

Common Tricks for Linked List Questions

- Always ask if you have the following because it will make your life much easier
  - Tail pointer?
  - Doubly linked?
  - Empty / Null List? (Also good edge cases)
  - Size?
- Many problems can be solved with a “slow / fast” pointer technique
  - Ex: Finding a cycle in a linked list- eventually slow and fast pointer will meet
- Drawing often makes problems easier



Behavioral Tips

Tell me about yourself and linkedIn

“Tell me about yourself”

- Often an ice breaker question
- Should be memorable and also highlight key aspects about you as an applicant
- Have a narrative arc or theme that the question comes back to
- Don’t have this memorized to the point it sounds forced - this should be authentic
- Don’t assume they have read your resume, this is a good time to highlight key points from it they may have missed
- Clean, polished, concise and sound confident!!

My personal “Tell me about yourself”

Basic Introduction
My name is Morgan
From CT
CS Major
Dartmouth

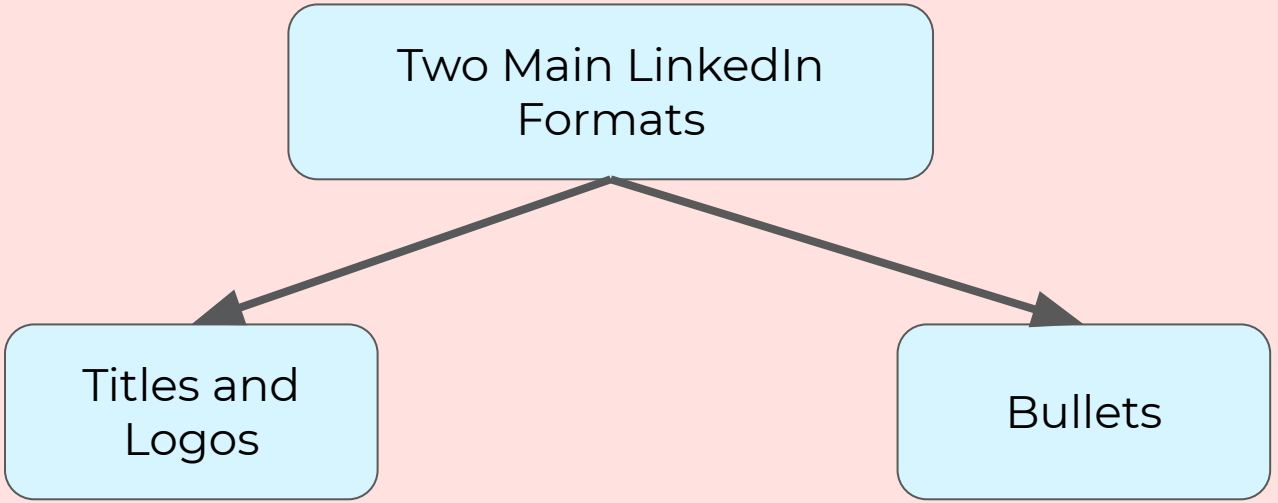
Transition to CS / Rememberable part
When I was born I got my name’s domain and I spent hs learning to code to use it

At College
I got involved with a variety of CS Clubs and created a bunch of personal projects with Web Dev

Common Theme
Through all these projects I learned I have a love of working with others to make social impact.

Tie to Company / Intro
Now I hope to be able to work at X company because of reasons XYZ

How to Stand Out with LinkedIn



Either is fine to use…

- More information can shine light on your application and help you appear in searches
- Leaving it bare makes it an easy skim

LinkedIn Checklist

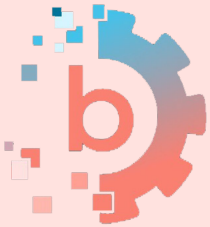
- Profile and Cover Photo - makes your profile memorable
- Title should have college and major or job / internships
- About section not necessary but adding something that is small and shows personality will help you profile appear in searches
- If using bullets, experiences should be clear with strong bullets
- Education should have a TLDR of activities you are involved with, even if they are in other areas on the profile
- Awards should explain criteria for selection if applicable
- Classes listed if niche and / or impressive
- Have enough interests to show the “show more” button
- Standardize!!!

Mock Interviews

Frameworks and booking

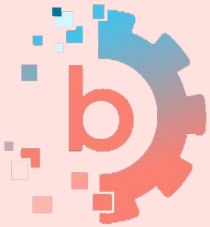
Simulating a real interview environment

- Real interviews are different from LeetCode because you don’t get a nice IDE
- We will be using Google Docs for our interviews - most interviews are either on Google Docs (for Google) or on applications like it
- I will be on the phone, not zoom, as most interviews are when they are strictly technical
- There will also be an intro behavioral question as a warm up



Must Dos for successful interviews

- **TALK THE ENTIRE TIME**
  - Talk about what data structures you are choosing and why
  - Talk about different approaches
  - Talk about edge cases that could break the solution
  - Talk about run times
  - Talk about a small bug you found when going over your work and how to fix it
  - Talk about what you are not doing
- Ask the interviewer questions or if you are on the right track
- Walk through a test case and mention edge cases



My Personal Interview Framework

Get all Problem Info
Clarify what the problem wants
Ask questions
Share assumptions

Total Time: 1-3m

Basic Solution
Think of brute force
Mention run time
Brainstorm ways to make it more efficient

Total Time: 1-3m

Efficient Solution
Maximize runtime
Ask more questions
Write out solution that could be final

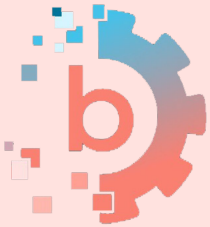
Total Time: 10-20m

Test Cases
Walk through given test cases quickly
Come up with your own test cases and edge cases
Fix any bugs

Total Time: 3-10m

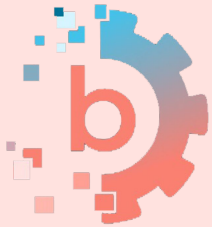
Extra's
Mention run time
Mention space
Mention any potential improvements

Total Time: 1-3m



How to book a mock interview

- Go to https://bitbybit.setmore.com/
  - Book a time that works!
- You can only book interviews for the upcoming week
- Limiting to one interview a person and the topic will be what we are currently reviewing each week
  - If you have a situation where you want to cover different topics or want to push up practice interviews please let me know! I'm flexible!



Questions

What didn’t make sense?