TIP101 | Intro to Technical Interview Prep

Intro to Technical Interview Prep Fall 2025 (@ Section 3 | Tuesdays and Thursdays 5PM - 7PM PT)
Personal Member ID#: **134071**

Need help? Post on our **class slack channel** or email us at **support@codepath.org**

Session 2: Binary Trees

Overview

In this session, students are delving into binary trees and binary search trees (BSTs), tackling various problems that reinforce their understanding of tree traversal, modification, and properties. They will implement functions to check if a tree is uni-valued, calculate tree height, merge trees, and handle insertions and deletions in BSTs. This will enhance their ability to manipulate tree data structures, understand tree traversal techniques, and apply recursive thinking effectively. The session aims to solidify foundational concepts in tree operations and improve problem-solving skills related to data structures.

> You can find all resources from today including the session deck, session recording, and more on the resources tab

📈 Part 1 : Instructor Lead Session

We'll spend the first portion of the synchronous class time in large groups, where the instructor will lead class instruction for 30-45 minutes.

👩‍💻 Part 2: Breakout Session

In breakout sessions, we will explore and collaboratively solve problem sets in small groups. Here, the **collaboration, conversation, and approach** are just as important as “solving the problem” - please engage warmly, clearly, and plentifully in the process!

In breakout rooms you will:

- Screen-share the problem/s, and verbally review them together
- Screen-share an interactive coding environment, and talk through the steps of a solution approach
    - ProTip: - An Integrated Development Environment (IDE) is a fancy name for a tool you could use for shared writing of code - like Replit.com, Collabed.it, CodePen.io, or other - your staff team will specify which tool to use for this class!
- Screen-share an implementation of your proposed solution
- Independently follow-along, or create an implementation, in your own IDE.

Your program leader/s will indicate which code sharing tool/s to use as a group, and will help break down

▶ **Note on Expectations**

🔎 Problem Solving Approach

We will approach problems using the six steps in the UMPIRE approach.

UMPIRE: Understand, Match, Plan, Implement, Review, Evaluate.

We'll apply these six steps to the problems we'll see in the first half of the course.

We will learn to:

- **Understand** the problem
- **Match** identifies common approaches you've seen/used before
- **Plan** a solution step-by-step, and
- **Implement** the solution
- **Review** your solution
- **Evaluate** your solution's time and space complexity and think critically about the advantages and disadvantages of your chosen approach.

Breakout Problems Session 2

💡 Unit 8 Cheatsheet

To help your learning journey with binary trees, we've put together a guide to common concepts and syntax you will use throughout Unit 8 breakout problems. Use this cheatsheet as a quick reference guide as you work through the problems below.

▶ **Problem Set Version 1**

▶ **Problem Set Version 2**

▶ **Problem Set Version 3**