Technical Interview Preparation Roadmap 2025

For Campus and Off-Campus Placement Aspirants

1. Overview

This roadmap guides you through every step required to prepare for **technical interviews**, focusing on problem-solving, computer science fundamentals, and practical implementation skills.

2. Technical Interview Stages

Stage	Focus Area
Stage 1	Online assessment – coding and aptitude tests.
Stage 2	Technical interview rounds – problem-solving and project discussions.
Stage 3	Managerial/HR round – behavioral and situational questions.
Stage 4	Offer discussion and feedback review.

3. Core Computer Science Subjects

Subject	Important Topics
Data Structures & Algorithms	Arrays, Linked Lists, Trees, Graphs, DP, Recursion
Object-Oriented Programming	Concepts, Inheritance, Polymorphism, Abstraction, Encapsulation
Database Management Systems (DBMS)	Normalization, Joins, Keys, Transactions, SQL Queries
Operating Systems	Processes, Threads, Scheduling, Deadlocks, Memory Management
Computer Networks	OSI Model, TCP/IP, Routing, Protocols, Network Security

4. Coding Practice Strategy

• Start with basic problems, then move to medium and hard levels.
• Learn problem-solving patterns (Sliding Window, Binary Search, Recursion).
• Practice daily on LeetCode, InterviewBit, or HackerRank.
• Analyze time & space complexity after each problem.
• Attempt mock coding tests under timed conditions.

5. Project & Practical Knowledge

• Be prepared to explain **project architecture**, **tech stack**, and **role** in detail.
• Understand **how** and **why** technologies were used.
• Be ready for scenario-based questions (e.g., scaling, optimization).
• Host projects on GitHub and maintain clean, documented code.

6. Common Technical Questions

- Explain the difference between process and thread.
- What is normalization in databases?
- How do you detect a loop in a linked list?
- Explain TCP vs UDP.
- What happens when you type a URL in a browser?
- Describe OOP principles with examples.
- How would you optimize a slow SQL query?

7. Soft Skills & HR Preparation

- Communicate clearly — explain your approach before coding.
- Be honest about what you know and what you don't.
- Practice common HR questions: "Tell me about yourself," "Why this company?"
- Show confidence, problem-solving attitude, and curiosity.

8. Recommended Resources

- **Websites:** LeetCode, InterviewBit, GeeksforGeeks
- **Books:** "Cracking the Coding Interview", "Operating System Concepts" (Silberschatz)
- **YouTube:** Striver, Apna College, Tech Dummies, CodeWithHarry
- **Mock Interviews:** Pramp, Interviewing.io, Google Tech Dev Guide

9. Final Tips

- Revise theory before interviews, not during.
- Practice problem-solving daily.
- Prepare short, clear answers for common questions.
- Always ask clarifying questions before starting a coding problem.
- Stay confident, calm, and focused — interviews test mindset as much as skill.