

# Coding Test Preparation Roadmap 2025

For Placement and Technical Assessments

## 1. Overview

Coding tests assess your problem-solving, logic, and programming efficiency. This roadmap helps you prepare systematically for online assessments used in campus, off-campus, and company hiring challenges.

## 2. Preparation Stages

Stage	Focus Area
Stage 1	Learn programming language basics (C++, Java, Python).
Stage 2	Master Data Structures & Algorithms (DSA).
Stage 3	Solve problems topic-wise on coding platforms.
Stage 4	Practice company-specific test patterns.
Stage 5	Work on speed, accuracy, and time-bound problem-solving.

## 3. Important Coding Topics

Category	Key Topics
Arrays & Strings	Two Pointers, Sliding Window, Sorting, Searching
Linked Lists	Reversal, Merging, Detecting Cycles
Stacks & Queues	Parentheses Matching, Next Greater Element
Hashing	Frequency Counting, Maps, Sets, Collision Handling
Recursion & Backtracking	Permutations, Subsets, N-Queens
Trees	Traversals, BST, Lowest Common Ancestor
Graphs	BFS, DFS, Shortest Path, Union-Find
Dynamic Programming	Knapsack, LIS, DP on Strings and Grids

## 4. Platform-Wise Practice Plan

- **LeetCode:** Company-wise questions, difficulty progression.
- **HackerRank:** Beginner to intermediate challenges with editor-based coding.
- **Codeforces / CodeChef:** Time-bound contests to build competitive speed.
- **GeeksforGeeks:** Topic-wise explanations and problem sets.
- **InterviewBit / NeetCode.io:** Structured interview prep roadmaps.

## 5. Coding Test Strategy

- Start with easy problems to warm up.
- Read problem statement carefully — avoid rework.

- Write pseudo-code before implementation.
- Optimize solutions for time and space complexity.
- Test against edge cases before submission.
- Manage time: 60% solving, 30% debugging, 10% testing.

## 6. Common Coding Test Formats

Test Type	Description
MCQ + Coding	Combination of theory and implementation questions.
Function-based Coding	Complete a function within given constraints.
Full Program	Write a complete program with I/O handling.
Project-based Challenge	Solve real-world problems (Hackathons, Hiring Challenges).

## 7. Recommended Resources

- **Books:** “Cracking the Coding Interview” by Gayle Laakmann McDowell
- **Websites:** LeetCode, InterviewBit, GeeksforGeeks
- **YouTube:** Striver, Take U Forward, Apna College
- **Tools:** Visual Studio Code, CodeRunner, GeeksforGeeks IDE

## 8. Final Tips

- Focus on problem-solving patterns, not rote memorization.
- Track your progress weekly.
- Practice in timed environments.
- Revise core topics before every major test.
- Stay calm and confident during the actual test.