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Essential LeetCode Training **MustSolve Platform**

Course Title: Essential LeetCode Training
Instructor: Wilbert Hernandez
Duration: 10 Hours (5 Days × 2 Hours)
Format: Online Micro-Course
Platform: MustSolve Web Application

Course Description

A ten-hour online micro-course that walks learners through the five most-asked LeetCode problems every software-engineering candidate should master to excel in technical interviews at top tech companies such as FAANG or the Big Four.

Target Audience: Upper-division computer science majors (or recent grads) preparing for technical interviews; familiar with at least one programming language (Java, Python, C++), but lacking structured interview-prep experience.

Course Schedule

Day 1: Two Sum (120 minutes)

Topic: Arrays & Hash Maps
Resources: Starter video: Arrays & Hash Maps
Activities:

- Watch starter video (15 min)
- Live-coded walkthrough (15 min)
- Individual solve on LeetCode (60 min)
- Reflection post (15 min)

Deliverable: HW #1 submission

Day 2: Add Two Numbers (120 minutes)

Topic: Linked Lists
Resources: Video: Pointers & Complexity

Activities:

- Watch instructional video (15 min)
- Live-coded walkthrough (15 min)
- Individual solve on LeetCode (60 min)
- Reflection post (15 min)

Deliverable: HW #2 submission

Day 3: Valid Parentheses (120 minutes)

Topic: Stacks
Resources: Video: Stacks vs Recursion
Activities:

- Watch instructional video (15 min)
- Live-coded walkthrough (15 min)
- Individual solve on LeetCode (60 min)
- Reflection post (15 min)

Deliverable: HW #3 submission

Day 4: Merge Two Sorted Lists (120 minutes)

Topic: Advanced Linked Lists
Resources: Video: Iterative vs Recursive merge
Activities:

- Watch instructional video (15 min)
- Live-coded walkthrough (15 min)
- Individual solve on LeetCode (60 min)
- Reflection post (15 min)

Deliverable: HW #4 submission

Day 5: Binary Tree Level Order Traversal (120 minutes)

Topic: Trees & BFS/DFS
Resources: Video: BFS vs DFS
Activities:

- Watch video (15 min)

- Solve problem (60 min)
- Mock-AI interview quiz (30 min)
- Course survey (15 min)

Deliverable: HW #5 & Quiz #5

General Module Objectives

Upon completion of this course, students will be able to:

A. Apply optimal data-structure selection to solve each essential LeetCode problem in O(n log n) or better.

B. Analyze multiple solution patterns (brute-force vs optimized) and compare their time/space complexities.

C. Create clean, production-quality code that passes all LeetCode test cases without runtime errors.

D. Evaluate one's own and peers' solutions against industry-standard readability and efficiency criteria.

E. Demonstrate interview-ready communication by articulating problem-solving steps in mock AI-driven interviews.

Assessment Plan

Homework Assignments (50%)

- **Type:** Formative Assessment
- **Format:** Auto-graded LeetCode submissions
- **Criteria:** All tests pass (100%)
- **Quantity:** 5 assignments (one per day)
- **Platform:** LeetCode.com
- **Feedback:** Immediate automated feedback

Mock AI Interviews (50%)

- **Type:** Summative Assessment
- **Format:** Oral Q&A + Verbal Explanation
- **Criteria:** Clarity + Optimal Big-O Identified (100%)
- **Duration:** 5-minute sessions

- **Platform:** AI-powered interview tool
- **Evaluation:** Communication skills and technical accuracy

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Learning Resources

LeetCode Walkthrough Videos

Excellent tutorials that teach theory, patterns, and complexity before hands-on solving.

LeetCode Problem Pages

Authentic coding environments with real-world, interview-like problems to be solved. Automated test-cases to track student progress.

Data-Structure Reference Sheets

Quick-access tables of operations and complexities. Useful guidance for proper-use of Data-structures and Algorithms.

MustSolve Web App (Next.js + Tailwind CSS)

Central hub housing syllabus, links, reflection prompts and auto-graded mock interviews.

Mock-AI Interview Tool (GPT-based)

Simulate interviewer follow-ups; records speed, complexity explanation, and code cleanliness.

Learning Activities

1. Watch Practice Reflect Loop

Each day begins with a concise video, flows into a timed LeetCode solve, and ends with a short reflection post (What Data Structure should you use? Why this complexity? What would you improve?).

2. Guided Code Reviews

After submission, learners compare against annotated sample solutions and other user's solutions.

3. Peer Discussion Board

Students post complexity analyses; peers must respond with one improvement suggestion.

4. Mock-AI Interviews

Vercel or AWS hosted bot asks clarifying questions; learners answer verbally/on-screen for a 5-min "quiz."

Prerequisites & Requirements

Target Audience

- Upper-division computer science majors
- Recent graduates preparing for technical interviews
- Students lacking structured interview-prep experience
- Candidates targeting FAANG or Big Four companies

Required Skills

- Familiarity with at least one programming language (Java, Python, or C++)
- Basic understanding of data structures and algorithms
- Willingness to dedicate 10 hours total to course completion
- Motivation to excel in technical interviews

Technical Requirements

- Reliable internet connection
- Web browser (Chrome, Firefox, Safari, Edge)
- LeetCode account (free)
- Access to MustSolve platform
- Microphone for AI interview sessions

Why LeetCode? Career Impact

1. Career Impact

Top tech companies filter 60% of applicants via coding-screen scores—mastery directly boosts interview pass rates.

2. Transferable Thinking

Algorithmic problem-solving strengthens everyday engineering tasks (debugging, refactoring, system design).

3. Competitive Edge

A disciplined, metric-driven prep routine (speed + complexity) differentiates candidates with similar GPAs/resumes.

4. Community & Accountability

LeetCode's leaderboard and discussion boards foster peer learning and sustained motivation.

Future Course Development

This MVP covers five essentials; future iterations will add:

- 30-problem "must-know" track with adaptive difficulty and topic-based playlists
- Enhanced mock-AI interviews with behavioral questions
- Recruiter dashboard for verifying timed scores and code quality rubrics

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Instructor Information

Wilbert Hernandez
Project Manager & Instructor
EME4320 Course Lead

Contact: Available through MustSolve platform
Office Hours: By appointment
Response Time: Within 24 hours during weekdays

Expertise Areas

- Algorithm optimization and data structures
- Technical interview coaching and preparation
- Educational technology integration
- AI-powered assessment systems

Teaching Philosophy

Focused on practical, hands-on learning through real coding challenges, immediate feedback, and industry-relevant problem-solving techniques that directly translate to career success.

Course Policies

Attendance

This is a self-paced online course. Students are expected to complete daily modules within reasonable timeframes to maintain engagement and momentum.

Late Submissions

LeetCode submissions are tracked automatically. Students should complete assignments by the suggested timeline to maximize learning effectiveness.

Academic Integrity

All code submissions should be original work. Students may reference educational materials and discuss approaches, but direct copying of solutions is prohibited.

Technical Support

For technical issues with the MustSolve platform or AI interview tool, contact course support through the integrated help system.

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