

# Technical Interview Questionnaire for Software Engineers

This **technical interview questionnaire** is designed to evaluate the skills and problem-solving abilities of software engineers. It covers essential topics such as algorithms, data structures, and coding best practices. This comprehensive tool helps employers identify qualified candidates efficiently.

## Candidate Information

- **Name:** \_\_\_\_\_
- **Date:** \_\_\_\_\_
- **Position Applied For:** \_\_\_\_\_

## Section 1: Algorithms

1. Explain the difference between quicksort and mergesort. In what scenarios would you use each?
2. Write a function to find the kth largest element in an unsorted array.
3. Given an array of integers, write code to find if there are any two numbers that add up to a specific target.

## Section 2: Data Structures

1. Describe how a hash table works and discuss its time complexities for basic operations.
2. Implement a stack using two queues.
3. How would you detect a cycle in a linked list?

## Section 3: Coding Best Practices

1. What are some techniques you use to write clean and maintainable code?
2. How do you handle exceptions in your code? Provide a sample in your preferred language.
3. Discuss the importance of unit testing and provide a simple test case scenario.

## Section 4: System Design (Optional)

1. Design a URL shortening service (like bit.ly). What components would you need and how would you handle scaling?

## Feedback and Evaluation

- **Technical Proficiency:** \_\_\_\_\_
- **Problem Solving:** \_\_\_\_\_
- **Communication:** \_\_\_\_\_
- **Comments:** \_\_\_\_\_