

Android Interview Prep Guide

- **Machine Coding - 120 Mins**
- **Mobile Fundamentals - 60 Mins**
- **System Design - 60 Mins**
- **Bar Raiser - 60 Mins**

Round 1 :Machine Coding

Format

You'll be given a base application (in Kotlin) with some boilerplate code and will be expected to add features to it based on a problem statement in the presence of a panelist who will be pairing with you.

This round is designed to evaluate how you approach a problem in a real environment where you'd most likely be collaborating with a larger team. We expect you to explain your rationale behind design decisions while maintaining receptivity for constructive feedback.

Evaluation criteria

1. **Problem solving:** Ability to break down the problem into smaller parts and requirement gathering
2. **Design patterns:** Implementation details are expected to have a clear separation of concerns and well abstracted layers to support enhancements to the given problem.
3. **Framework fundamentals:** Solution should reflect the clarity in knowledge of platform fundamentals like scoped functions, asynchronous code, view lifecycle etc.

Round 2: Mobile Fundamentals

Format

This round will focus on the evaluation of Android fundamentals. Typically there will be questions across 3 segments here focused on Software engineering, Android core concepts, language fundamentals.

Topics

1. Software engineering fundamentals
 - a. SOLID principles
 - b. OOPs basics
 - c. Domain specific questions: Thread safety, memory management, process lifecycle etc.
2. Android fundamentals topics (not exhaustive)
 - a. Asynchronous code/Multi-threaded apps
 - b. Activity/Fragment Lifecycle
 - c. View lifecycle
 - d. Android Components
 - e. Inter-process communication (IPC)
 - f. Intent/Bundle
 - g. ViewGroups/RecyclerView
 - h. Memory management
3. Language fundamentals
 - a. Kotlin: Delegates, Sealed Classes, Generics (Variance, Type Projections ..), Scoping Operators...
 - b. Java: Generics, Type Erasure, Static vs non-static, Volatile fields, Immutability

Round 3: System Design

Format

This round will focus on evaluation of your system design skills. Typically there will be 2 segments here focused on deep dive into past projects followed by a system design problem statement.

Topics

1. Past projects
 - a. Deep dive into key learnings in the past projects
 - b. Understanding of a high level system design for previous work
 - c. Ability to reason architectural choices for previous work
2. System Design
 - a. Refine a vague problem statement
 - b. Comprehend and clarify functional and non-functional requirements
 - c. Deep dive into low/high level design of different parts of the system
 - d. Discuss optimizations and edge cases around the proposed solutions

Round 4: Bar Raiser

Format

This round will be aimed at evaluation of leadership abilities and behavioral aspects of the candidate based on past experience.

You can expect the questions to be fairly open-ended with a focus on hypothetical scenarios around team or stakeholder management, handling difficult situations at work, offering trade-offs between scope, timelines and quality etc.