

System Design

From Code to Business Value

Architectural Insights

Why Does Fixing Simple Bugs Not Make Us Better Developers?

Systems Thinking—Critical Thinking

by Esmaeeli Moradi
Senior Android Engineer



Why Does Fixing Simple Bugs Not Make Us Better Developers?

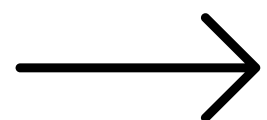
In the world of Android development, we've all encountered strange bugs. For example, a RecyclerView that crashes on older devices, or a screen that loads sluggishly on a cellular connection. We usually solve these problems by fixing them at the same layer (e.g., adding an if-else to prevent a crash) and then move on.

But there's a big problem with this approach: we've only treated a symptom, not the root cause.



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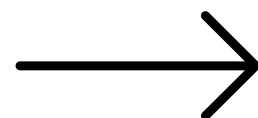


This is where **Systems Thinking** comes in. Systems Thinking teaches us that every component of our app (from the UI code to the network and server) is part of a larger whole. A bug in a RecyclerView might be rooted in poor memory management, a slow network call, or even a bad decision in the backend's API design.



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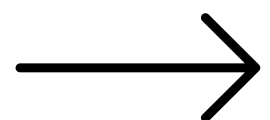
The Blind Spot of Every Android Developer

Let's say we designed an app with the assumption that "all users have access to high-speed internet." If we don't challenge this assumption with Critical Thinking, our app might not be optimized for loading images and data. In the real world, it will perform poorly on older devices or slow networks.



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Critical Thinking helps us question these assumptions and guides us toward solutions that go beyond simple coding:

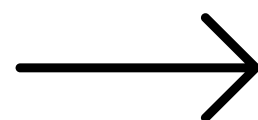
- Using **Cache management systems** like **Glide** or **Picasso** for image handling..
- Using **WorkManager** to handle heavy background processes.
- Designing a **modular architecture** to separate responsibilities and reduce complexity.

In essence, Systems Thinking helps us build stable systems instead of just fixing bugs.



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The Mindset of a Software Architect

Systems Thinking without the support of **Critical Thinking** can lead to unrealistic models and short-term solutions.

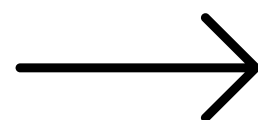
These two skills are two sides of the same coin and should never be separated.

By combining them, we transform ourselves from temporary problem-solvers into Software Architects.



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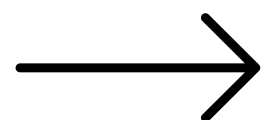


If you're interested in this topic or have a similar experience, I'd be happy to discuss it.



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Let's Build a Scalable Future

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Let's Connected

A series of concentric, curved yellow lines that sweep across the bottom right corner of the page, creating a sense of motion and connectivity.