Mobile Phone Architecture

Arce Llamas Irvin de Jesus
Multiplatform Software Development
Universidad Tecnológica de Tijuana
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Hardware Architecture

Hardware Architecture: The main hardware components of a mobile phone include:

- Application Processor: It controls other components such as display, keypad, power, audio, and video.

- Baseband Processor: Handles radio signals and communicates with other processors.

- Power and Audio Processor: Controls speaker and microphone functions in coordination with the application processor.

- Subscriber Identification Module (SIM): Contains subscriber details.

Software Architecture

Software Architecture: Mobile application architecture typically consists of three fundamental layers:

- Presentation Tier: Responsible for the user interface (UI) components and UI processing.

- Business Tier (Application Tier): Located on the server-side, it supports the mobile app but is not the app itself.

- Data Tier: Houses the app's database and data access layer, which can be hosted in the cloud or on-premises.

Best Practices:

- Populate data for database views.

- Use version numbers to track updates during synchronization.

- Maintain only necessary user details in middleware.

- Optimize background processes when CPU battery is low.

- Ensure common UI elements across multiple screens.

Future Trends:

- Companies advocate for open, global standards, protocols, and interfaces.

- Applications should be bearer-agnostic (supporting various network technologies).

- Architecture frameworks and service enablers should be independent of operating systems.

- Seamless geographic and inter-generational roaming is a goal.