ARQUITECTURA DE MOVILES

DISEÑO DE APLICACIONES

RODRIGUEZ CACHO XIMENA C.

UNIVERSIDAD TECONOLOGICA DE TIJUANA

CONTENT

1 introduction

This document contains some definitions regarding the architecture of mobile applications that will help us distinguish between each system in order to learn more about the subject.

2 definition

Mobile architectures refer to the hardware and software structures and designs used in mobile devices, such as smartphones and tablets. These architectures are designed to optimize the performance and efficiency of these devices, taking into account their specific resource constraints and requirements.

Here are some of the common mobile architectures:

1. **ARM architecture:**

- Most mobile devices use ARM (Advanced RISC Machine) based architectures. ARM processors are known for their power efficiency and ability to deliver solid performance in mobile devices.

2. **x86 architecture:**

- Although less common on mobile devices, some tablets and hybrid devices use x86 architectures, similar to those found in desktop and laptop computers.

3. **Mobile application architecture:**

- On the software side, mobile applications usually follow specific architectures, such as MVC (Model-View-Controller) or component-based architectures to organize code and improve maintainability.

4. **Mobile operating system architectures:**

- Mobile operating systems, such as Android and iOS, have their own internal architectures that manage resources, security, and interaction with applications. For example, Android uses the Linux kernel as its base.

5. **Mobile GPU Architectures:**

- Mobile devices often include graphics processing units (GPUs) designed specifically to handle graphics and graphics-intensive applications. GPU architectures, such as Adreno on Qualcomm devices or Mali on ARM devices, are essential for improving graphics performance.

6. **Network architectures:**

- With the increasing importance of mobile connectivity, network architectures such as LTE (Long-Term Evolution) and 5G are critical to providing fast data speeds and reliable connectivity on mobile devices.

7. **Mobile security architectures:**

- Since mobile devices store and handle a large amount of sensitive data, security architectures are essential. This can include specific hardware, such as security modules, and software approaches such as encryption and biometric solutions.

These architectures are constantly evolving as mobile technology advances, and innovations continue to improve the efficiency, performance, and security of mobile devices.

3 types of mobile components

Mobile devices are made up of a variety of components that work together to provide advanced functionality. Here is a list of some of the main component types used in mobile devices:

1. **Processor (CPU):**

- It is the brain of the device and executes the operations and calculations. Mobile processors, such as Qualcomm's Snapdragon series or Samsung's Exynos series, are common examples.

2. **Graphic Processing Unit (GPU):**

- Handles graphical operations and is essential for performance in games and visual applications. Adreno (Qualcomm), Mali (ARM), and PowerVR (Imagination Technologies) are some of the common GPU architectures.

3. **RAM Memory:**

- Temporarily stores data used by the operating system and running applications for quick access. More RAM allows for smoother multitasking.

4. **Internal Storage:**

- Where the operating system, applications and user data are permanently saved. It can be in the form of NAND flash storage.

5. **Battery**:

- Provides the energy necessary for the operation of the device. Lithium-ion batteries are the most common in mobile devices.

6. **Display**:

- Shows user interface and visual information. They can be LCD, OLED, AMOLED screens, or more recent variants such as folding screens.

7. **Camera:**

- Capture images and videos. Mobile devices can have rear and front cameras with sensors of different resolutions and characteristics.

8. **Sensors:**

- They include accelerometers, gyroscopes,

proximity sensors, ambient light sensors, magnetometers, etc. These sensors provide information about the device's orientation, movement, and environment.

9. **Connectivity:**

- Includes modules for connection to mobile networks (such as LTE or 5G), Wi-Fi, Bluetooth, GPS, NFC, and other communication standards.

10. **Speakers and Microphones:**

- Allow sound playback and audio capture for calls and voice recording.

11. **Chipset:**

- Integrates several components, such as the processor, GPU, communication module, and others in a single package.

12. **Buttons and Ports:**

- They include physical or capacitive buttons for user interaction, as well as USB ports, headphone jacks, and SIM and memory card slots.

These components work together to provide a complete mobile experience, and the continuous evolution in mobile technology brings constant improvements to these components.

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