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MOBILE COMPUTING FOR 5G TECHNOLOGY

CIA030

ASSIGNMENT-1

1. Apply the special constraints & requirements in mobile OS Vs conventional OS.

i. MEMORY MANAGEMENT:

Mobile OS:

Mobile devices haves limited RAM and storage. Mobile OS uses aggressive memory optimization techniques like memory compression, background app suspension, & killing idle apps to preserve resources.

Conventional OS:

Desktop systems have comparatively higher RAM, allowing more simultaneous processes. Virtual memory & paging are widely used to handle large applications.

ii. PROCESSOR MANAGEMENT / SCHEDULING:

Mobile OS:

Power efficiency is a priority. Mobile OS uses energy aware scheduling to save battery life. Processes are

scheduled with a focus on responsiveness & energy consumption.

Conventional OS:

Prioritizes performance over battery. Uses complex scheduling algorithms to ensure multitasking & processing power for intensive applications.

iii. DEVICE MANAGEMENT

Mobile OS:

Handles touchscreens, sensors (gyroscope, accelerometer), and limited hardware interfaces. Drivers are tightly integrated & optimized for specific hardware.

Conventional OS:

Manages a broader range of peripherals like printers, scanners, external drives, etc, and offers more driver customization.

iv. FILE MANAGEMENT:

Mobile OS:

Uses simplified file systems and often restricts user access for security. File access is sandboxed per application.

Conventional OS:

Allows users full access to the file system. Supports

complex file operations, user file hierarchy, and external file system support (NTFS, FAT, etc).

v. SECURITY:

Mobile OS:

Focuses on app sandboxing, permissions, & secure boot. Regular security updates & app store vetting help reduce risks.

Conventional OS:

Uses antivirus, firewalls, & user privilege management. More vulnerable due to open file systems & executable downloads from various sources.

vi. OTHER FUNCTIONS:

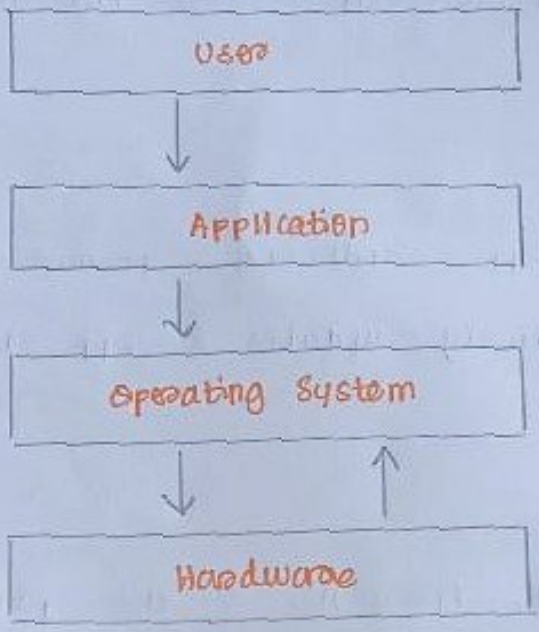
Mobile OS:

Emphasizes power management, network handover (Wi-Fi to mobile data), and gesture based UI.

Conventional OS:

Supports high end graphics, multitasking, software development environments, and networking tools with fewer power constraints.

MOBILE OS:




2. Justify the mobile operating system functions & its features in Android OS, Iphone & windows OS with respect to the given terms.

1. EASY TO USE

Android OS:

Offers customizable user interfaces, widgets & launchers, making it flexible for different users. Android provides easy navigation through gestures and app drawer organization.

iPhone iOS:

Known for its simplicity and consistency across devices

Intuitive design with minimal learning curve makes it highly user-friendly, especially for new users.

Windows OS:

Clean and tile based interface. Easy to navigate but less flexible compared to Android & iOS. Limited user base due to its discontinuation.

2. GOOD APP STORE:

Android OS:

Google Play Store has a wide variety of free and paid apps. Open source nature allows third party app stores like Amazon Appstore, giving users more choices.

iPhone iOS:

Apple App Store offers high quality, strictly reviewed apps. While it has fewer apps than Android, the apps are generally more secure & optimized.

Windows OS:

Windows store had a limited number of apps. App availability & developer support were low, which led to its market decline.

3. GOOD BATTERY LIFE:

Android OS:

Battery life varies by device, but newer Android version include features like adaptive battery, dark mode, & background app restriction for better power management.

iPhone IOS:

iOS devices are optimized for performance & battery life. Features like Low Power mode, battery health monitoring, & efficient hardware software integration improve longevity.

Window OS:

was optimized well for battery life on supported devices, but lack of updates & modern features limited its efficiency in comparison to Android & iOS.

4. DATA USAGE & ORGANISATION:

Android OS:

Allows users to monitor & restrict background data usage. Built-in file manager & data saver options provide better control and organization of data.

iPhone iOS:

Offers automatic data organizator with apps & cloud syncing. Data usage can be monitored through settings with options to restrict background activity.

Windows OS:

Included basic data management features, such as Data sense & file management apps, but lacked the advanced data control features in Android & iOS.