

Assignment - 1

ITA0302 → Mobile Computing.

Name & Tanuja

Reg No & 192321052

Date & 29/04/25

Day & Tuesday.

Mobile OS vs Conventional Os

Introduction

Mobile operating Systems and conventional operating System are designed for different types of devices , each with its own operational constraints . Mobile devices such as Smartphones & tablets require OS designs that prioritize battery efficiency , limited hardware resources.

(i) Memory Management.

Mobile OS	Conventional OS.
limited physical Memory Memory must be aggressively.	Comparatively larger RAM availability, memory conservation.
uses techniques like app suspension , background task .	Relies more on virtual memory management system.
frequent memory reclamation	Background programs.

(ii) Processor Management / Scheduling.

Mobile OS	Conventional OS
CPU Scheduling is designed to be energy efficient to prolong battery life.	CPU Scheduling prioritizes Performance & responsiveness.
Real-time Scheduling important for user Inputs.	Real time Scheduling is less critical except.
Limits background processes to save CPU	Background processes can continue running freely.

(iii) Device Management.

Mobile OS	Conventional OS
Manages many wireless and battery-sensitive	Manages primarily wired & high power.
Device drivers are tightly controlled by OS	Device drivers are developed by third parties.

(iv) File Management.

Mobile OS	Conventional OS
File storage is app - centric ; each app has isolated , sandboxed storage.	File storage is user - centric ;
Emphasizes cloud storage Integration for backups & access.	Files are usually stored locally on physically drives.

(v) Security.

Mobile OS	Conventional OS
Strong Sandboxing of apps	Apps may have broader access to system.
Mandatory App Signing	Application Signing is optional unless.
Regular automatic updates	updates may require Manual Initiation.

(vi) Other Functions.

Mobile OS	Conventional OS.
Prioritizes power Management	Focuses on consistent high performance without tight power
Seamless Support for Mobility	Mobility support is limited (or) optional

2) Justification of Mobile OS Functions & Features.

(i) Easy to Use.

Android OS

- * Highly customizable Interface.
- * Varies slightly b/w Manufacturers.
- * Uniform across all Apple devices.
- * Flexible, but learning for curve features.

iPhone iOS.

- * Known for its Intuitive, consistent.
- * uniform across all Apple devices.

(ii) Good App Store

Android OS

- * Google play store offers Millions of apps.
- * Easier app publishing, but this leads to occasional low quality.

iPhone IOS.

- * App store offers, strictly curated, high quality app.
- * strict review process ensures app.

(iii) Good Battery life.

Android OS.

Battery life depends on device brand.

* Background task control & battery.

iPhone iOS

* Apple tightly integrates hardware & software, leading to very efficient battery usage.

(iv) data usage & optimization.

Android IOS.

- * offers detailed data usage & tracking per app.
- * Has app-level data usage settings but less granular.