Evolution of Operating System(OS)

1. **NO OS/Serial Processing (1940s-Early 1950s):**

   Computers used plugboards; users manually loaded programs (punch cards), running one job at a time, a show, inefficient process.

2. **Batch Processing (Mid-1950s-Mid-1960s):**

   Systems like GM-NAA I/O automated job handling by grouping similar tasks (batches) for sequential execution, improving CPU utilization.

3. **Multiprogramming & Time-Sharing (1960s-1970s):**

   Multiprogramming allowed multiple jobs in memory; Time-Sharing (CTSS, Multics) let many users interact simultaneously, making computers more interactive.

4. **Personal Computers & GUIs (1980s-1990s):**

   The PC revolution brought user-friendly OSs (MS-DOS, Windows, Mac OS) with Graphical User Interfaces (GUIs), making computing accessible to the masses.

5. **Networking & Internet (1990s-2000s):**

   Focus shifted to networked systems (Linux, Windows NT) with TCP/IP, enabling client-server models and internet connectivity.

6. **Mobile & Cloud Era (2000s-Present):**

   Emergence of mobile OSs (iOS, Android) and cloud computing led to highly portable, connected, and intelligent systems.

7. **IoT, Edge & AI (Ongoing):**

   Modern OSs are expanding into Internet of Things (IoT) devices, edge computing, and integrating AI for smarter, more adaptive experiences.

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