Linux Assignment-1

* Advantages of Linux in Realtime Application

RA2311028010012
K. Prabhu Sai

→ Fully preemptible Kernel :-
Allows high-priority tasks to interrupt even kernel-space execution, reducing latency spikes.

→ POSIX-Compliant API :-
uses standard interfaces for threads, IPC and scheduling, making development portable.

→ Board Hardware support :-
Runs on various platforms (x86, ARM, RISC-V) from embedded boards to high performance

→ Isolation via cgroups and namespaces :-
Advanced resource control : Limit CPU memory and I/O per task using control groups reducing interference from non-real time tasks.

→ CPU Affinity & CPU shielding
Real time tasks can be pinned to specific cores using taskset or isolcpus ensuring dedicated CPU time and minimizing context switches.

→ Realtime Filesystem (eg XFS RT)
Certain filesystem like XFS support real-time subvolumes for guarenteed I/O bandwidth, useful in audio/video streaming or logging system.