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FA21-BSE-019-5A

OPERATING SYSTEMS – ASSINGMENT – 02

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CPU Scheduling Algorithms Summary

**Windows Operating Systems:**

1. **Windows 10:** Utilizes a priority-based preemptive scheduling algorithm, managing task execution based on priority levels.
2. **Windows 7:** Like its predecessors, uses a priority-based preemptive scheduler, with potential improvements for better system performance.
3. **Windows Vista:** Implements a priority-based preemptive scheduler with changes aimed at enhancing resource utilization and system responsiveness.
4. **Windows XP:** Employs a basic priority-based preemptive scheduler, dynamically adjusting priorities based on CPU usage and I/O activity.

**Linux Operating Systems:**

1. **Ubuntu (including Edubuntu):** Generally employs the Completely Fair Scheduler (CFS) for fair CPU time distribution among processes.
2. **Ubuntu Cinnamon Edition:** Inherits scheduler from Ubuntu, likely using CFS for equitable CPU time allocation.
3. **Zorin OS:** Shares scheduling principles with Ubuntu, typically using CFS for fair CPU resource allocation. Note: Linux distributions offer flexibility in kernel and scheduler choices.

It's important to note that Linux distributions, including these mentioned, offer flexibility in kernel and scheduler choices. Users can opt for alternative schedulers based on their requirements.

**MacOS (with XNU Kernel):** Employs a multilevel queue scheduling algorithm:

* **Round Robin Scheduling:** Ensures equal CPU time for each process, promoting fairness.
* **Multilevel Queue:** Assigns priority levels to processes, operating on a round-robin basis for fair CPU time distribution.

MacOS typically employs a multilevel queue scheduling algorithm, where processes are assigned priority levels, and each level operates on a round-robin basis. This allows for fair distribution of CPU time while accommodating different priority classes. However, the pure round-robin nature of this approach may not be as effective in handling scenarios where certain tasks require preferential treatment based on priority.