Earliest Deadline Late Server

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***Abstract*—This document is a model and instructions for LaTeX. This and the IEEEtran.cls file define the components of your paper [title, text, heads, etc.]. *CRITICAL: Do Not Use Symbols, Special Characters, Footnotes, or Math in Paper Title or Abstract.**

***Index Terms*—component, formatting, style, styling, insert**

I. Introduction

Systems that operate in real-time must adhere to severe time limits for processing tasks or events. These systems are extensively employed across a number of industries, including aerospace, automotive, medical technology, and industrial control systems. For the system to operate correctly and safely, it is imperative that the timing requirements of real-time processes are met. This document will be based of Earliset deadline late server. and briefly explain the contents of it

II. Scheduling Algorithm

Scheduling algorithm are set of rules which allows cpu process which task should be running first at any given time. The scheduling algorithm minimises the response time and the waiting time of the process and also maximize the efficiency and the information that system can process in a given amount of time. When it comes to realtime system the scheduling algorithm takes the main role . where in realtime the task must be process within the specific deadline

The primary goal of a scheduling algorithm is to optimize system performance by maximizing resource utilization, minimizing response time, and improving system throughput. Different scheduling algorithms use different criteria to determine the priority and order of tasks, such as CPU burst time, arrival time, and priority level.

There are many types of scheduling algorithms, including preemptive and non-preemptive algorithms, time-sharing algorithms, real-time scheduling algorithms, and more. Some common examples include First-Come, First-Served (FCFS), Round Robin, Priority Scheduling, and Shortest Job First (SJF) scheduling.

The choice of a scheduling algorithm depends on the specific requirements of the system and the tasks or processes it needs to handle. Some systems may require real-time scheduling to ensure that tasks are completed within strict time constraints, while others may prioritize response time and fairness to ensure that all tasks are treated equally.

Overall, scheduling algorithms are critical for optimizing system performance and ensuring that tasks are completed efficiently and effectively on a computing system.

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III. Real-time system scheduling algorithms.

Algorithms for real-time system scheduling are in charge of allocating system resources and controlling task execution to meet deadlines. These algorithms are essential for maximizing resource usage, reducing reaction times, and ensuring task deadlines. There are a number of scheduling algorithms created especially for real-time systems, each with specific features and trade-offs. Real-time scheduling algorithms can be Preemptive or Non-preemptive scheduling

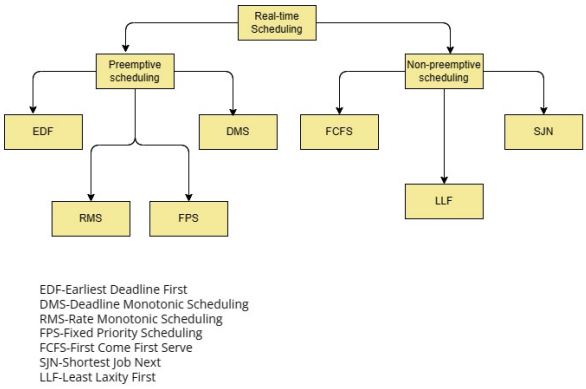

Fig. 1. Realtime Algorithms

A. Preemptive scheduling

Prioritization and time slicing are the foundations of preemptive scheduling. The scheduler continuously keeps track of how processes are being executed and determines when to preempt a running process in favor of a higher priority process. This method guarantees that jobs with a tight deadline or a high priority are given the resources they require and completed right away. The main advatages of Preemptive scheduling are

- Priority based Execution
- Time Slicing
- Multitasking
- Responsiveness

B. Non-preemptive scheduling

A scheduling method used in computer operating systems is non-preemptive scheduling, commonly referred to as co-operative scheduling. The CPU is given to a non-preemptive scheduling process, which retains control until it has finished running or has expressly released the CPU. Since the processes themselves select the execution order rather than being controlled by outside variables like priorities or time slices, this scheduling method is straightforward and exhibits deterministic behavior. The main advatages of Non-preemptive scheduling are

- Low Overhead
- Process Cooperation
- Predictability

IV. EDF(Earliest Deadline First).

A fundamental scheduling method used in real-time systems to control how activities or processes are carried out depending on deadlines is called earliest deadline first (EDF). It is a dynamic priority scheduling technique that guarantees the timely completion of time-sensitive tasks by allocating priorities in accordance with their respective deadlines.

Each job in EDF scheduling has a deadline, which is the time by which the work must finish execution in order to meet its timing constraints. The task with the earliest (closest) deadline is chosen as the task with the highest priority for execution by the scheduler, which continuously monitors the deadlines of all current tasks.

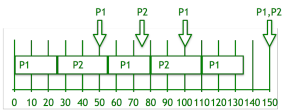

Fig. 2. An image of a galaxy

V. LDF(Late Deadline First).

In real-time systems, the Least Deadline First (LDF) scheduling method is used to dynamically regulate task execution depending on deadlines. It is a modification of the Earliest Deadline First (EDF) scheduling system that gives work priorities inversely correlated to their deadlines.

Each task in LDF scheduling has a deadline attached to it, which denotes the time by which the work must finish being executed. In contrast to EDF scheduling, which gives the work with the earliest deadline the highest priority, LDF scheduling gives tasks with later deadlines a higher priority. The idea behind this method is to give priority to jobs that have less time before their deadline because they are more likely to be missed if they are postponed.

A. Use of LDF

as one part of the entire proceedings, and not as an independent document. Please do not revise any of the current designations.

VI. Earliest Deadline Late Server (EDLS)

Before you begin to format your paper, first write and save the content as a separate text file. Complete all content and organizational editing before formatting. Please note sections VI-A–**??** below for more information on proofreading, spelling and grammar.

Keep your text and graphic files separate until after the text has been formatted and styled. Do not number text heads—LaTeX will do that for you.

A. EDLS Algorithm

Define abbreviations and acronyms the first time they are used in the text, even after they have been defined in the abstract. Abbreviations such as IEEE, SI, MKS, CGS, ac, dc, and rms do not have to be defined. Do not use abbreviations in the title or heads unless they are unavoidable.

B. EDF and LDF used in EDLS

English units may be used as secondary units (in parentheses). An exception would be the use of English units as identifiers in trade,

C. Benefits of EDLS

- Use either SI (MKS) or CGS as primary units. (SI units are encouraged.) English units may be used as secondary units (in parentheses). An exception would be the use of English units as identifiers in trade, such as “3.5-inch disk drive”.
- Avoid combining SI and CGS units, such as current in amperes and magnetic field in oersteds. This often leads to confusion because equations do not balance dimensionally. If you must use mixed units, clearly state the units for each quantity that you use in an equation.
- Do not mix complete spellings and abbreviations of units: “Wb/m^2” or “webers per square meter”, not “webers/m^2”. Spell out units when they appear in text: “. . . a few henries”, not “. . . a few H”.
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Be sure that the symbols in your equation have been defined before or immediately following the equation. Use “(**??**)”, not “Eq. (**??**)” or “equation (**??**)”, except at the beginning of a sentence: “Equation (**??**) is . . .”

D. Areas where EDLS

Please use "soft" (e.g., `\eqref{Eq}`) cross references instead of "hard" references (e.g., `(1)`). That will make it possible to combine sections, add equations, or change the order of figures or citations without having to go through the file line by line.

Please don't use the `{eqnarray}` equation environment. Use `{align}` or `{IEEEeqnarray}` instead. The `{eqnarray}` environment leaves unsightly spaces around relation symbols.

Please note that the `{subequations}` environment in LaTeX will increment the main equation counter even when there are no equation numbers displayed. If you forget that, you might write an article in which the equation numbers skip from (17) to (20), causing the copy editors to wonder if you've discovered a new method of counting.

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Do not use `\nonumber` inside the `{array}` environment. It will not stop equation numbers inside `{array}` (there won't be any anyway) and it might stop a wanted equation number in the surrounding equation.

E. future discussion

F. Authors and Affiliations

The class file is designed for, but not limited to, six authors. A minimum of one author is required for all conference articles. Author names should be listed starting from left to right and then moving down to the next line. This is the author sequence that will be used in future citations and by indexing services. Names should not be listed in columns nor group by affiliation. Please keep your affiliations as succinct as possible (for example, do not differentiate among departments of the same organization).

G. Identify the Headings

Headings, or heads, are organizational devices that guide the reader through your paper. There are two types: component heads and text heads.

Component heads identify the different components of your paper and are not topically subordinate to each other. Examples include Acknowledgments and References and, for these, the correct style to use is "Heading 5". Use "figure caption" for your Figure captions, and "table head" for your table title. Run-in heads, such as "Abstract", will require you to apply a style (in this case, italic) in addition to the style provided by the drop down menu to differentiate the head from the text.

Text heads organize the topics on a relational, hierarchical basis. For example, the paper title is the primary text head because all subsequent material relates and elaborates on this one topic. If there are two or more sub-topics, the next level head (uppercase Roman numerals) should be used and, conversely, if there are not at least two sub-topics, then no subheads should be introduced.

ACKNOWLEDGMENT

The preferred spelling of the word "acknowledgment" in America is without an "e" after the "g". Avoid the stilted expression "one of us (R. B. G.) thanks ...". Instead, try "R. B. G. thanks...". Put sponsor acknowledgments in the unnumbered footnote on the first page.

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