

Project 2: Real Time Scheduling

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In this project, we will study the following real time scheduling algorithms:

- Rate Monotonic (**RM**)
- Earliest Deadline First (**EDF**)
- Least Laxity First (**LLF**)

Rate Monotonic (RM)

General Description:

Rate monotonic is a priority assignment algorithm used in real-time operating systems with a static-priority scheduling class. The static priorities are assigned according to the cycle duration of the job, so a shorter cycle duration results in a higher job priority.

Earliest Deadline First (**EDF**)

General Description:

Earliest Deadline First is a dynamic priority scheduling algorithm used in real-time operating systems to place processes in a priority queue. Whenever a scheduling event occurs the queue will be searched for the process closest to its deadline. This process is the next to be scheduled for execution.

Least Laxity First (LLF)

General Description:

Least Laxity First is a job level dynamic priority scheduling algorithm. It means that every instant is a scheduling event because laxity of each task changes on every instant of time. A task which has least laxity at an instant, it will have higher priority than others at this instant. Laxity is mathematically it is described as

$$L_i = D_i - (t_i + C_i^r) \quad (1)$$

- D_i : next deadline of the task at t_i .
- t_i : current execution time.
- C_i^r : remaining computer time of the task at t_i .

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