

Homework assignment 2 - EL2450

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Rate Monotonic scheduling is a scheduling method that will predetermine the priority of each task proportional to the tasks activation frequency. The priority is determined at the task creation and will remain unchanged during the whole application.

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A set of tasks $J = \{J_1, J_2, \dots, J_n\}$ is schedulable with RM if

$$U = \sum_{i=1}^n \frac{C_i}{T_i} \leq n(2^{1/n} - 1) \quad (1)$$

where C_i is the computation time, T_i is the period, U is the utilization factor and n is the number of computations. When we have a sampling time of $T = \{20, 29, 30\}ms$ and a computation time of 6 ms each we can see that,

$$\frac{6}{20} + \frac{6}{29} + \frac{6}{30} = 0.707 \quad (2)$$

and with a utilization factor of $U = 0.780$ we can see that the set of tasks J should be schedulable with RM.

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