

Periodic Tasks in Ada(3.3.1)

In our attempt to understand the priority correlation between tasks 1 to 6, it is sufficient enough for one to observe the Phase(Φ_i), the computation time(C_i) and of course the Period(T_i).

By extracting sufficient data, we can see that the first job that is scheduled to be executed is the one with the smallest phase, so in our case is Task_4 with a phase of 200 msec. This task requires approx 174 msec to be completed so the clock after the execution time will be 374 msec. Please observe that in our begging phase of the experiment, every task requires a different time to complete, so every time we calculate the time the task took and we can either save it to the WCRT label, so we can keep track of our final variable updated that is the Clock. In our case it is $(200+174) = 374$ msec. We can also extract that the next time to be scheduled is 700 msec since the next time for the task to be executed is at 900 msec. The scheduler will then place the next task that its phase time(if it's the first time the task is about to be executed) or the Next release label that is closer to the clock. So, for example in our case the next task to be scheduled is Task_5 since its phase is 400 msec which is the one closest to 374 msec which is our current clock.

The purpose of this scheduling is that we are trying to utilise the processor at its maximum since we want to have the least time that our system halts and waits for the next job . Priority is chosen based on the completion and next release.