

Missing analytical calculations in the previous submission

➤ CPU load

- $CPU\ load = \frac{(0.00132*2) + (0.00132*2) + (0.0024*1) + (0.0024*5) + (5*1) + (12*1)}{100} \approx 62\%$.

➤ System schedulability using by URM method

- For a system to be schedulable, U (62%) must be \leq URM.
- $URM = n \left(2^{\frac{1}{n}} - 1 \right) = 6 \left(2^{\frac{1}{6}} - 1 \right) \approx 0.735$.

➤ System schedulability using by time demand analysis

- $W_i(t) = e_i + \sum_{k=1}^{i-1} \left(\frac{t}{P_k} \right) e_k$, where $0 < P_i$.
- The system is schedulable if $W_i(t) < deadline$.
- **Earliest deadline comes first:**

Load	Equation	Schedulability
Load 1 task	$W(10) = 5 + 0 = 5$	schedulable
UART Rx	$W(20) = 0.0024 + \left(\frac{20}{10} \right) * 5 = 10.0024$	schedulable
Btn1 monitor	$W(50) = 0.00132 + \left(\frac{50}{20} \right) * 0.0024 + \left(\frac{50}{10} \right) * 5$ ≈ 25.0073	schedulable
Btn 2 monitor	$W(50) = 0.00132 + \left(\frac{50}{20} \right) * 0.0024 + \left(\frac{50}{10} \right) * 5$ $+ \left(\frac{50}{50} \right) * 0.0013 \approx 25.0086$	schedulable
Periodic Tx	$W(100) \approx 50.0196$	schedulable
Load 2 task	$W(100) \approx 62.0196$	schedulable