

## Scheduling and Types of schedulers

$$* U = \frac{2.5}{5} + \frac{4.5}{15} + \frac{3.5}{10}$$

$$U = 0.975$$

$$URM = n(2^{\frac{1}{n}} - 1)$$

$$URM = 0.779$$

$$U > URM \quad \text{system not schedulable}$$

\*

$T_1$  (highest priority) :

$$w(1) = 2.5 + 0 = 2.5$$

$$w(2) = 2.5 + 0 = 2.5$$

$$w(3) = 2.5 + 0 = 2.5$$

$$w(4) = 2.5 + 0 = 2.5$$

$$w(5) = 2.5 + 0 = 2.5$$

$T_1$  is schedulable

$T_2$  :

$$w(1) = 4.5 + \left(\frac{1}{5}\right) 2.5 = 7$$

$$w(2) = 4.5 + \left(\frac{2}{5}\right) 2.5 = 7$$

$$w(3) = 4.5 + \left(\frac{3}{5}\right) 2.5 = 7$$

$$w(4) = 4.5 + \left(\frac{4}{5}\right) 2.5 = 7$$

$$w(5) = 4.5 + \left(\frac{5}{5}\right) 2.5 = 7$$

$$w(6) = 4.5 + \left(\frac{6}{5}\right) 2.5 = 9.5$$

$$w(7) = 4.5 + \left(\frac{7}{5}\right) 2.5 = 9.5$$

$$w(8) = 4.5 + \left(\frac{8}{5}\right) 2.5 = 9.5$$

$$w(9) = 4.5 + \left(\frac{9}{5}\right) 2.5 = 9.5$$

$$w(10) = 4.5 + \left(\frac{10}{5}\right) 2.5 = 9.5$$

$$w(11) = 4.5 + \left(\frac{11}{5}\right) 2.5 = 12$$

$$w(12) = 4.5 + \left(\frac{12}{5}\right) 2.5 = 12$$

$$w(13) = 4.5 + \left(\frac{13}{5}\right) 2.5 = 12$$

$$w(14) = 4.5 + \left(\frac{14}{5}\right) 2.5 = 12$$

$$w(15) = 4.5 + \left(\frac{15}{5}\right) 2.5 = 12$$

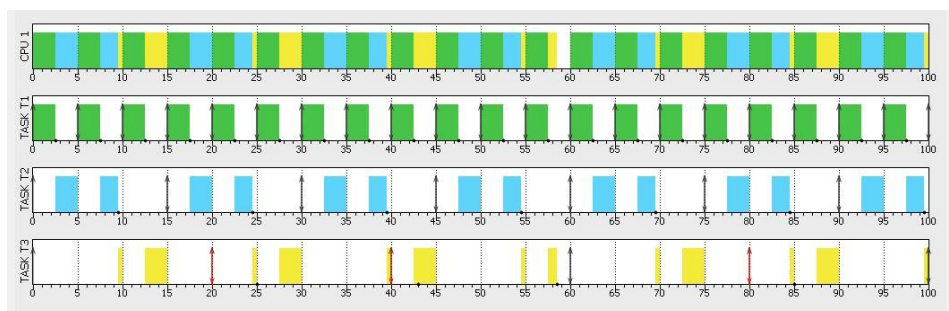
$T_2$  is schedulable

$T_3$  is not schedulable

$w(1) = 3.5 + \frac{1}{2} \times \frac{1}{15} \times 1.5 = 10.5$	$w(11) = 3.5 + \frac{1}{2} \times \frac{1}{15} \times 1.5 = 10.5$
$w(2) = 3.5 + \frac{1}{2} \times \frac{1}{15} \times 1.5 = 10.5$	$w(12) = 3.5 + \frac{1}{2} \times \frac{1}{15} \times 1.5 = 10.5$
$w(3) = 3.5 + \frac{1}{2} \times \frac{1}{15} \times 1.5 = 10.5$	$w(13) = 3.5 + \frac{1}{2} \times \frac{1}{15} \times 1.5 = 10.5$
$w(4) = 3.5 + \frac{1}{2} \times \frac{1}{15} \times 1.5 = 10.5$	$w(14) = 3.5 + \frac{1}{2} \times \frac{1}{15} \times 1.5 = 10.5$
$w(5) = 3.5 + \frac{1}{2} \times \frac{1}{15} \times 1.5 = 10.5$	$w(15) = 3.5 + \frac{1}{2} \times \frac{1}{15} \times 1.5 = 10.5$
$w(6) = 3.5 + \frac{1}{2} \times \frac{1}{15} \times 1.5 = 10.5$	$w(16) = 3.5 + \frac{1}{2} \times \frac{1}{15} \times 1.5 = 10.5$
$w(7) = 3.5 + \frac{1}{2} \times \frac{1}{15} \times 1.5 = 10.5$	$w(17) = 3.5 + \frac{1}{2} \times \frac{1}{15} \times 1.5 = 10.5$
$w(8) = 3.5 + \frac{1}{2} \times \frac{1}{15} \times 1.5 = 10.5$	$w(18) = 3.5 + \frac{1}{2} \times \frac{1}{15} \times 1.5 = 10.5$
$w(9) = 3.5 + \frac{1}{2} \times \frac{1}{15} \times 1.5 = 10.5$	$w(19) = 3.5 + \frac{1}{2} \times \frac{1}{15} \times 1.5 = 10.5$
$w(10) = 3.5 + \frac{1}{2} \times \frac{1}{15} \times 1.5 = 10.5$	$w(20) = 3.5 + \frac{1}{2} \times \frac{1}{15} \times 1.5 = 10.5$

$T_3$  is not schedulable

Comment: from the analysis the system is not schedulable as task 3 miss its deadline.



Comment: the Gantt chart show how task 3 really miss its deadline.