## Exercice 1 : Ordonnancement

1. FP préemptif

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| τ1 | 1 | 1 |  |  |  | 2 | 2 |  |  |  | 3 | 3 |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | t |
| τ2 |  |  | 1 | 2 |  |  |  | 3 |  | 4 |  |  | 5 |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | t |
| τ0 |  |  |  |  | 1 |  |  |  | 1 |  |  |  |  | 1 |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | t |

1. FP non-préemptif

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| τ1 | 1 | 1 |  |  |  |  |  | 2 | 2 |  | 3 | 3 |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | t |
| τ2 |  |  | 1 | 2 |  |  |  |  |  | 3 |  |  | 4 | 5 |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | t |
| τ0 |  |  |  |  | 1 | 1 | 1 |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | t |

1. Politique d’ordonnancement FIFO

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| τ1 | 1 | 1 |  |  |  |  |  | 2 | 2 |  |  | 3 | 3 |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | t |
| τ2 |  |  | 1 |  |  |  | 2 |  |  | 3 | 4 |  |  | 5 |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | t |
| τ0 |  |  |  | 1 | 1 | 1 |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | t |

1. Politique RR

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| τ1 | 1 |  |  | 1 |  |  | 2 |  |  | 2 |  | 3 |  | 3 |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | t |
| τ2 |  | 1 |  |  | 2 |  |  | 3 |  |  | 4 |  | 5 |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | t |
| τ0 |  |  | 1 |  |  | 1 |  |  | 1 |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | t |

1. FP/FIFO préemptif

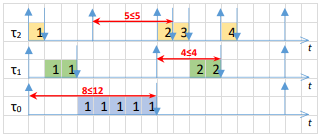
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| τ1 | 1 | 1 |  |  |  | 2 | 2 |  |  |  | 3 | 3 |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | t |
| τ2 |  |  | 1 | 2 |  |  |  | 3 |  | 4 |  |  | 5 |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | t |
| τ0 |  |  |  |  | 1 |  |  |  | 1 |  |  |  |  | 1 |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | t |

1. FP/FIFO non-préemptif

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| τ1 | 1 | 1 |  |  |  |  |  | 2 | 2 |  |  | 3 | 3 |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | t |
| τ2 |  |  | 1 | 2 |  |  |  |  |  | 3 | 4 |  |  | 5 |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | t |
| τ0 |  |  |  |  | 1 | 1 | 1 |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | t |

## Exercice 2 : Echéances temporelles

1. Non-Préemptif



1. 5ms pour τ2, 4ms pour τ1 et 8ms pour τ0
2. Oui, car aucune tâche ne dépasse son temps d’échéance
3. Préemptif

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| τ2 | 1 |  |  |  | 2  **1≤5** |  |  |  | 3 |  |  |  | 4 |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | t |
| τ1 |  | 1  **3≤4** | 1 |  |  |  |  |  |  | 2 | 2 |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  | **12≤12** |  |  |  |  |  |  |  |  |  | t |
| τ0 |  |  |  | 1 |  | 1 | 1 | 1 |  |  |  | 1 |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | t |

1. Temps de réponse max : 1ms pour t2, 3ms pour t1, 12ms pour t0
2. Oui
3. Ordonnancement EDF non-préemptif

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| τ2 |  |  | 1  **4** |  |  |  | **5≤5** |  | 2 |  |  | 3 | 4 |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | t |
| τ1 | 1 | 1 |  |  |  | **8≤12** | **12** |  | **3≤4** | 2 | 2 |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | t |
| τ0 |  |  |  | 1 | 1 | 1 | 1 | 1 |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | t |

1. Temps de réponse max : 5ms pour t2, 3ms pour t1, 8ms pour t0
2. Oui
3. Ordonnancement EDF préemptif

**5**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| τ2 |  |  | 1  **4** |  | 2 |  |  |  |  |  | **4≤5** | 3 | 4 |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | t |
| τ1 | 1 | 1 |  |  |  |  | **11≤12**  **12** |  | 2 | 2  **2≤4** |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | t |
| τ0 |  |  |  | 1 |  | 1 | 1 | 1 |  |  | 1 |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | t |

1. Temps de réponse max : 4ms pour t2, 2ms pour t1, 11ms pour t0
2. Oui

## Exercice 3 :

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| P1 |  |  |  |  |  |  |  |  | C | C | C | C | R | R | R | R | R | C | C | C | R | C |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | t |
| P2 | C | C | C | R | R | R | R | R | R | R | R |  | C | C | C | C | C |  |  |  | C |  | C | R | R | C |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | t |
| P3 |  |  |  | C |  | C |  | C |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | C | R | R | C |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | t |
| P4 |  |  |  |  | C |  | C |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | C |  |  | C |  | C | C | C | C | C | C |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | t |

C : calcul

R : read (Lecture)

340ms au total