El nombre del archivo de entrega será **apellido1\_apellido2\_nombre\_DAM\_AA\_02\_01.pdf**

**NOTAS SOBRE PRIORIDAD DE PROCESOS EN ALGORITMOS DE PLANIFICACIÓN DE PROCESOS**

**El primer criterio a seguir SIEMPRE es el que dicte cada algoritmo, y SOLO en caso de EMPATE SEGÚN DICHO ALGORITMO, actuaremos de la siguiente forma:**

* **Primero los procesos que llevan más tiempo esperando (más “Espera” continuadas).**
  + **Primero los que ya se han ejecutado alguna vez antes (más “Ejecución”).**
    - **Primero los que le quede menos para terminar.**
      * **En caso de que se siga empatando, preguntar al profesor.**

## Ejercicio 1

Representa la gestión que realizará la CPU si usa los siguientes algoritmos:

1. FIFO (First Input First Output).
2. SJF (Short Job First).
3. SRTF (Short Remaining Time First)
4. RR (Round Robin) con un tiempo o quantum q = 2.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| FIFO | First In First Out | | | |
| Procesos | Llegada | Duración | Espera | Respuesta |
| P1 | 0 | 7 | 0 | 7 |
| P2 | 2 | 4 | 6 | 10 |
| P3 | 3 | 3 | 9 | 12 |
| P4 | 5 | 2 | 10 | 12 |
| Tiempo medio | | | 6,25 | 10,25 |

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| FIFO | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| P1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| P2 |  |  | E | E | E | E | E | E |  |  |  |  |  |  |  |  |  |
| P3 |  |  |  | E | E | E | E | E | E | E | E | E |  |  |  |  |  |
| P4 |  |  |  |  |  | E | E | E | E | E | E | E | E | E | E |  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| SJF | Short Job First | | | |
| Procesos | Llegada | Duración | Espera | Respuesta |
| P1 | 0 | 7 | 0 | 7 |
| P2 | 2 | 4 | 11 | 15 |
| P3 | 3 | 3 | 7 | 10 |
| P4 | 5 | 2 | 0 | 2 |
| Tiempo medio | | | 4,5 | 8,5 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| SJF | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| P1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| P2 |  |  | E | E | E | E | E | E | E | E | E | E | E |  |  |  |  |
| P3 |  |  |  | E | E | E | E | E | E | E |  |  |  |  |  |  |  |
| P4 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| SRTF | Short Remaining Time First | | | |
| Procesos | Llegada | Duración | Espera | Respuesta |
| P1 | 0 | 7 | 9 | 16 |
| P2 | 2 | 4 | 0 | 4 |
| P3 | 3 | 3 | 5 | 8 |
| P4 | 5 | 2 | 1 | 3 |
| Tiempo medio | | | 3,75 | 7,75 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| SRTF | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| P1 |  |  | E | E | E | E | E | E | E | E | E |  |  |  |  |  |  |
| P2 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| P3 |  |  |  | E | E | E | E | E |  |  |  |  |  |  |  |  |  |
| P4 |  |  |  |  |  | E |  |  |  |  |  |  |  |  |  |  |  |

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| --- | --- | --- | --- | --- |
| RR | Round Robin q=2 | | | |
| Procesos | Llegada | Duración | Espera | Respuesta |
| P1 | 0 | 7 | 10 | 17 |
| P2 | 2 | 4 | 2 | 6 |
| P3 | 3 | 3 | 10 | 13 |
| P4 | 5 | 2 | 5 | 8 |
| Tiempo medio | | | 6,75 | 11 |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RR | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| P1 |  |  | E | E |  |  | E | E | E | E | E | E |  |  | E | E |  |  |
| P2 |  |  |  |  | E | E |  |  |  |  |  |  |  |  |  |  |  |  |
| P3 |  |  |  | E | E | E | E | E |  |  | E | E | E | E | E |  |  |  |
| P4 |  |  |  |  |  | E | E | E | E | E |  |  |  |  |  |  |  |  |

## Ejercicio 2

Representa la gestión que hará la CPU:

1. Utilizando el algoritmo por prioridades no expulsivo.
2. Utilizando el algoritmo por prioridades expulsivo.

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| --- | --- | --- | --- | --- | --- |
| PNOEX | Prioridad no exclusiva | | | | |
| Procesos | Llegada | Duración | Prio | Espera | Respuesta |
| P1 | 0 | 7 | 4 | 0 | 7 |
| P2 | 2 | 4 | 2 | 9 | 13 |
| P3 | 3 | 3 | 1 | 5 | 8 |
| P4 | 5 | 2 | 3 | 10 | 12 |
| Tiempo medio | | | | 6 | 10 |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PNOEX | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| P1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| P2 |  |  | E | E | E | E | E | E | E | E | E |  |  |  |  |  |  |
| P3 |  |  |  | E | E | E | E | E |  |  |  |  |  |  |  |  |  |
| P4 |  |  |  |  |  | E | E | E | E | E | E | E | E | E | E |  |  |

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| --- | --- | --- | --- | --- | --- |
| PEX | Prioridad exclusiva | | | | |
| Procesos | Llegada | Duración | Prio | Espera | Respuesta |
| P1 | 0 | 7 | 4 | 9 | 16 |
| P2 | 2 | 4 | 2 | 3 | 7 |
| P3 | 3 | 3 | 1 | 0 | 3 |
| P4 | 5 | 2 | 3 | 4 | 6 |
| Tiempo medio | | | | 4 | 8 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PEX | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| P1 |  |  | E | E | E | E | E | E | E | E | E |  |  |  |  |  |  |
| P2 |  |  |  | E | E | E |  |  |  |  |  |  |  |  |  |  |  |
| P3 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| P4 |  |  |  |  |  | E | E | E | E |  |  |  |  |  |  |  |  |