Sistemas Informáticos (Computer Systems)

Unit 03. Activities 02

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UNIT 03. ACTIVITIES 02

1. EXERCISE 01

A system has the following resources: a CPU, two disks (DISC1, DISC2) and a printer (PRN). There are two types of process according to the needs of resource utilization:

Process type 1

CPU	DISC1	DSC1	DSC1	CPU	CPU	PRN	IMP	PRN	PRN	PRN	PRN	CPU
0	1	2	3	4	5	6	7	8	9	10	11	12

Process type 2

CPU	CPU	CPU	CPU	CPU	CPU	DSC1	CPU	CPU	CPU	DSC2	DSC2	CPU	PRN	CPU	CPU
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Assuming that the system is running a process of each type, calculate the CPU usage, the average system return time and the waiting time for each job with the following CPU planning algorithms:

- FCFS.
- Round-Robin with quantum=1.

Suppose that the rest of the queues are managed with a FCFS algorithm and that the first process in this system is type 1.

In your solution, you must provide those elements:

A) A table similar to this:

Instant	Queue Process	Process in CPU	Queue DSC1	DSC1	Queue DSC2	DSC2	QueuePRN	PRN		P1	P2
0	P2	P1								CPU	CPU

B) These values calculated when process ends:

- **P1 Return time:**
- **P2 Return time:**
- **Mean return time:**
- **P1 queue waiting time:**
- **P2 queue waiting time:**
- **CPU usage:**