

Class Activity 02

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| Course Code: CS220 | Course Name: Operating Systems |
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| Name: | Roll No: |

FILL IN THE BLANKS

1. In Symmetric Multiprocessing clustering, multiple nodes run the same application.
2. The Unix system call for Communication is pipe(), shmget(), mmap().
3. Printf() execute on Kernel mode whether Scanf() execute on Kernel
4. Mechanism determines how to do something, and Policy decide what will be done.
5. A Trap is a software-generated interrupt caused either by an error or a user request.
6. Profiling is periodic sampling of instruction pointer to look for statistical trends.
7. Bootstrap Loader stored in ROM or EEPROM locates the kernel, loads it into memory, and starts it.
8. System Calls are the only entry points for the kernel system.
9. ABI stands for Application Binary Interface.
10. In Microkernel Systems communication takes place between user modules using message passing.

Round Robin with TQ = 3ms

Table 1

| Proces s | Arrival Time | Burst Time | Priorit y |
|---------------------|-------------------------|-------------------|----------------------|
| P1 | 0 | 11 | 2 |
| P2 | 5 | 28 | 4 |
| P3 | 12 | 2 | 3 |
| P4 | 2 | 10 | 1 |
| P5 | 9 | 16 | 5 |

SOLUTION:**ROUND ROBIN:**

| | | |
|----|----|------------------------------|
| P1 | 0 | 11 8 5 2 X |
| P4 | 2 | 10 7 4- 1 X |
| P2 | 5 | 28 25 22 19 16 13 10 7 4 1 X |
| P5 | 9 | 16 13 10 7 3-X |
| P3 | 12 | 2 0- X |

GANTT CHART: TQ=3

| | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| P1 | P4 | P1 | P2 | P4 | P5 | P1 | P3 | P2 | P4 | P5 | P1 | P2 | P5 | P2 | P5 | P2 | P5 | P2 | P2 | P2 | P2 |
| 0-3 | 3-6 | 6-9 | 9-12 | 12-15 | 15-18 | 18-21 | 21-23 | 23-26 | 26-27 | 27-30 | 30-32 | 32-35 | 35-38 | 38-41 | 41-44 | 44-47 | 47-50 | 50-53 | 53-56 | 56-59 | 59-60 |

TURN AROUND TIME CALCULATION:

| PROCESSES | ARRIVAL TIME | BURST TIME | COMPLETION TIME | WAITING TIME | TURN AROUND TIME |
|-----------|--------------|------------|-----------------|--------------|------------------|
| P1 | 0 | 11 | 32 | 21 | 32 |
| P2 | 5 | 28 | 60 | 27 | 55 |
| P3 | 12 | 2 | 23 | 9 | 11 |
| P4 | 2 | 10 | 27 | 15 | 25 |
| P5 | 9 | 16 | 50 | 25 | 41 |
| | | | | AVG=19.4 | AVG=32.8 |

| P | AT | BT | CT | WT | TAT |
|----|----|----|----|----|-----|
| P1 | 0 | 11 | 32 | 21 | 32 |
| P2 | 5 | 28 | 60 | 27 | 55 |
| P3 | 12 | 2 | 23 | 9 | 11 |
| P4 | 2 | 10 | 27 | 15 | 25 |
| P5 | 9 | 16 | 50 | 25 | 41 |

Aug. 19.4 32.8 TQ = 2ms

| | | |
|----|----|---|
| P1 | 0 | 4 8 5 2 x |
| P4 | 2 | 10 7 4 x |
| P2 | 5 | 28 25 27 19 16 13 10 7 4 1 x |
| P5 | 9 | 16 13 10 7 x |
| P3 | 12 | 2 0 x |

| | | | | | | | | | | | | | | | |
|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----|
| P ₁ | P ₄ | P ₁ | P ₂ | P ₄ | P ₅ | P ₁ | P ₃ | P ₂ | P ₄ | P ₅ | P ₁ | P ₂ | P ₅ | P ₂ | |
| 0 | 3 | 6 | 9 | 12 | 15 | 18 | 21 | 23 | 26 | 27 | 30 | 32 | 35 | 38 | 41 |

| | | | | | | |
|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| P ₅ | P ₂ | P ₅ | P ₂ | P ₂ | P ₂ | P ₂ |
| 41 | 44 | 47 | 50 | 53 | 56 | 59 60 |

| | | | | | | | | | |
|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| P1 | P5 | P4 | P2 | P3 | P1 | P4 | P4 | P2 | P1 |
| 21 | 18 | 15 | 12 | 12 | 9 | 9 | 6 | 5 | 3 |

| | | | | | | |
|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| P2 | P5 | P2 | P5 | P2 | P5 | P2 |
| 47 | 44 | 41 | 38 | 35 | 30 | 26 |