A_6

Assignment VI

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Q. 1 Mentally trace the execution of this nachos and write (1) the contents of the ready-queue of the systesm, (2) the value of the semaphore sem and (3) the contents of the queue of the semaphore `sem`, when each of the messages above is printed, by filling the table as follows:

Q. 1.1 Thread 0 tries to enter critical section 0 time.

- Ready Queue: head $\longrightarrow t_1 \longrightarrow t_2 \longrightarrow \varnothing$
- Value of `sem`: 1
- Queue of `sem`: head $\longrightarrow \varnothing$

Q. 1.2 Thread 1 tries to enter critical section 0 time.

- Ready Queue: head $\longrightarrow t_2 \longrightarrow t_0 \longrightarrow \varnothing$
- Value of `sem`: 0
- Queue of `sem`: head $\longrightarrow \varnothing$

Q. 1.3 Thread 2 tries to enter critical section 0 time.

- Ready Queue: head $\longrightarrow t_0 \longrightarrow \varnothing$
- Value of `sem`: 0
- Queue of `sem`: head $\longrightarrow t_1 \longrightarrow \varnothing$

Q. 1.4 Thread 0 is exiting critical section 0 time.

- Ready Queue: head $\longrightarrow \varnothing$
- Value of `sem`: 0
- Queue of `sem`: head $\longrightarrow t_1 \longrightarrow t_2 \longrightarrow \varnothing$

Q. 1.5 Thread 0 tries to enter critical section 1 time.

- Ready Queue: head $\longrightarrow t_1 \longrightarrow \varnothing$

- Value of `sem`: 1

- Queue of `sem`: head $\longrightarrow t_2 \longrightarrow \varnothing$

Q. 1.6　Thread 0 is exiting critical section 1 time.

- Ready Queue: head $\longrightarrow \varnothing$

- Value of `sem`: 0

- Queue of `sem`: head $\longrightarrow t_2 \longrightarrow t_1 \longrightarrow \varnothing$

Q. 1.7　*** Value of Shared is 2, when thread 0 is finishing.

- Ready Queue: head $\longrightarrow t_2 \longrightarrow \varnothing$

- Value of `sem`: 1

- Queue of `sem`: head $\longrightarrow t_1 \longrightarrow \varnothing$

Q. 1.8　Thread 2 is exiting critical section 0 time.

- Ready Queue: head $\longrightarrow \varnothing$

- Value of `sem`: 0

- Queue of `sem`: head $\longrightarrow t_1 \longrightarrow \varnothing$

Q. 1.9　Thread 2 tries to enter critical section 1 time.

- Ready Queue: head $\longrightarrow t_1 \longrightarrow \varnothing$

- Value of `sem`: 1

- Queue of `sem`: head $\longrightarrow \varnothing$

Q. 1.10　Thread 2 is exiting critical section 1 time.

- Ready Queue: head $\longrightarrow \varnothing$

- Value of `sem`: 0

- Queue of `sem`: head $\longrightarrow t_1 \longrightarrow \varnothing$

Q. 1.11　*** Value of Shared is 4, when thread 2 is finishing.

- Ready Queue: head $\longrightarrow t_1 \longrightarrow \varnothing$

- Value of `sem`: 1

- Queue of `sem`: head $\longrightarrow \varnothing$

Q. 1.12　Thread 1 is exiting critical section 0 time.

- Ready Queue: head $\longrightarrow \varnothing$

- Value of `sem`: 0

- Queue of `sem`: head $\longrightarrow \varnothing$

Q. 1.13 Thread 1 tries to enter critical section 1 time.

- Ready Queue: head $\longrightarrow \varnothing$

- Value of `sem`: 1

- Queue of `sem`: head $\longrightarrow \varnothing$

Q. 1.14 Thread 1 is exiting critical section 1 time.

- Ready Queue: head $\longrightarrow \varnothing$

- Value of `sem`: 0

- Queue of `sem`: head $\longrightarrow \varnothing$

Q. 1.15 *** Value of Shared is 6, when thread 1 is finishing.

- Ready Queue: head $\longrightarrow \varnothing$

- Value of `sem`: 1

- Queue of `sem`: head $\longrightarrow \varnothing$