Slide 1

Look now at program in file example4.c, which is an example of signaling applications using binary semaphores. Task 3 runs the shown function, which repeats its operation after a delay of 1 second. The function waits for two signals by performing a semaphore take twice, before displaying a message indicating that it was unblocked.

Slide 2

The tasks 1 and 2 give the semaphore each second, and each displays a string when it runs.

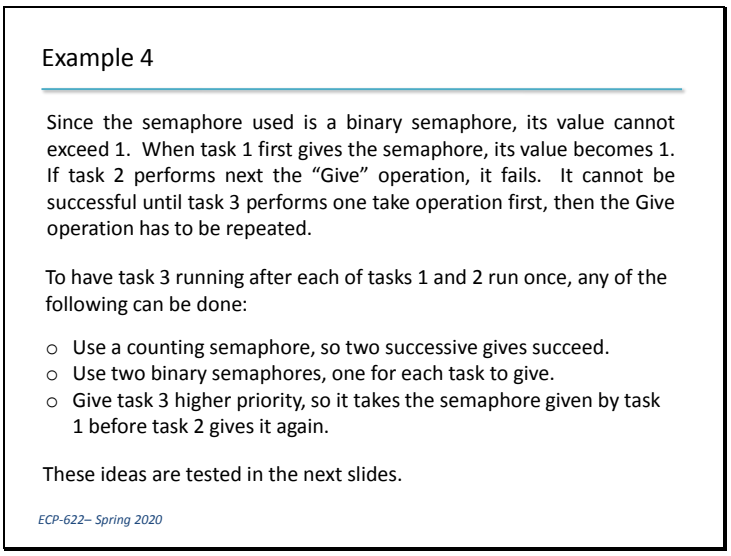
Slide 3

Here, we disable task 2 and only tasks 1 and 3 are running. As expected, task 3 will be unblocked after task 1 iterates two times, as indicated by the output displayed.

Slide 4

Now we run the three tasks at the same priority level. We observe that task 3 runs only after each of tasks 1 and 2 run two times, not one time as may first be expected. Try to explain this before going to the next slide.

Slide 5



Slide 6

Here, we changed the semaphore into a counting semaphore.

Slide 7

Here, we use two different binary semaphores. Each of tasks 1 and 2 gives a different semaphore.

Task 3 then takes the two semaphores before running.

Slide 8

Here, we run the original program, but give task 3 a higher priority.