Example of Producer and Consumer Problem

Application

In the example explained in the lecture video, we have seen that we had taken an array, which is of fixed size and hence it is called a bounded buffer. Producer produced an item on the array and the consumer consumed the item from the array. Let's see another example where a similar scenario occurs.

Command: grep foo file.txt | wc -l

Explanation: This is another example where a bounded buffer is used. Here we are piping the output of one program into another. A pipe is the transfer of output of one program to some other destination.

Processes: In this example, we are running two processes parallely.

First Process: grep writes lines from file.txt with the string foo in them to standard output. The shell redirects the output to pipe (created by pipe system call).

Second Process: The other end of pipe is connected to standard input of process wc. The process counts the number of lines in the input stream and prints it.

Conclusion: In this example, grep is the producer, the process wc is the consumer and between them is an in-kernel bounded buffer.