Q1. Does your program output any garbage? If yes, why?

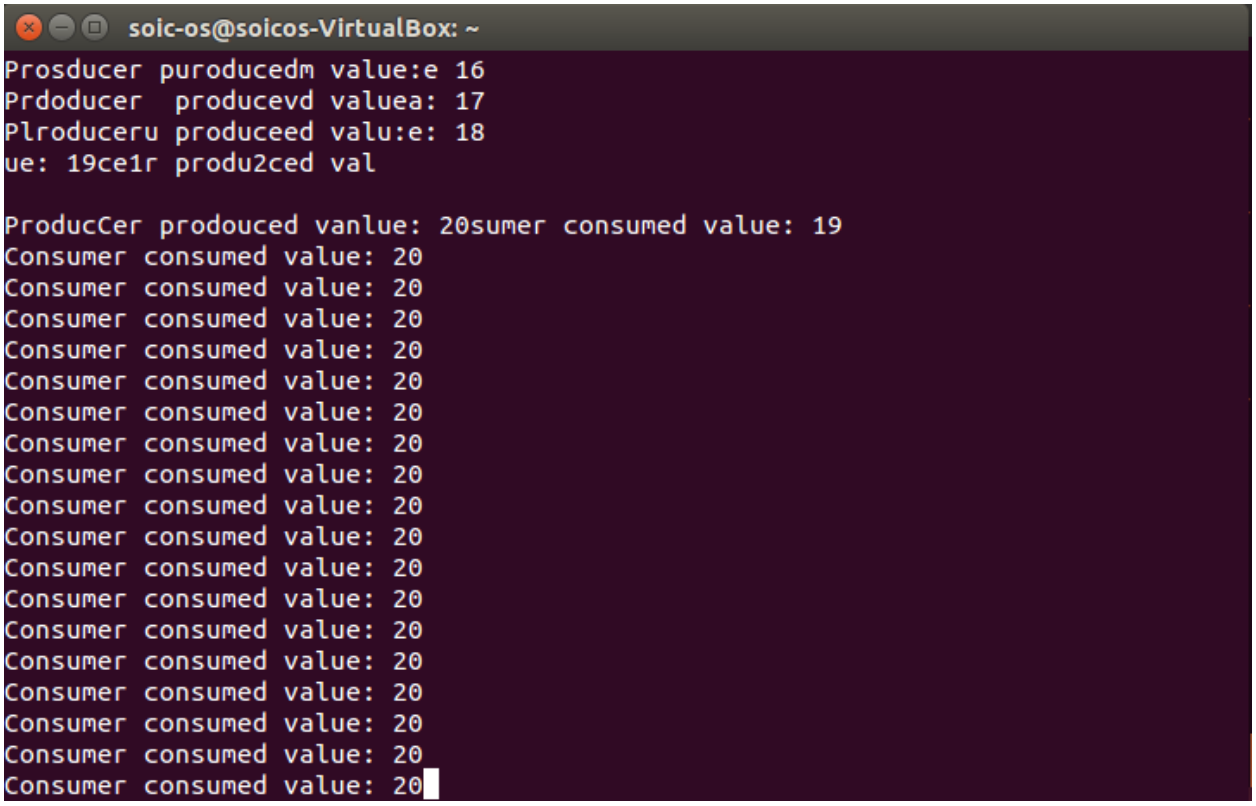
Answer

Yes, our program outputs garbage. The output is not actual garbage values but any normal person viewing the output will find it to be garbage. This is because the printf of consumer and producer are interleaved. This happens because of preemption.
Suppose that initially producer has the control of the processor and it is executing the printf statement. Now it may so happen that (due to preemption), the execution of producer is halted and the processor is allocated to consumer by the OS. Now the consumer starts displaying its printf statement. It may again happen that the consumer is halted before it completes its execution and processor is allocated to producer. Producer starts its execution from the last halted position and starts displaying the remaining part of printf.
So now the output would be half printf of producer, half printf of consumer and then remaining half printf of producer. Due to the overlapping of the printf statements, the output looks like garbage.

Q2. Are all the produced values getting consumed? Check your program for a small count like 20.

Answer

All the produced values are not getting consumed. This is because the producer produces new values before the consumer can consume the old values. This happens because there no synchronization between the two programs. If the producer would wait until the consumer consumes the value, all the values would have been displayed.



Contribution

Anand Nahar: Producer code
Pratik Patel: Consumer code