

Assignment 3

Write a bash program called *producer* and a C program called *consumer.c*. A text-based data file called *storage* initially contains an integer number between 5 and 90.

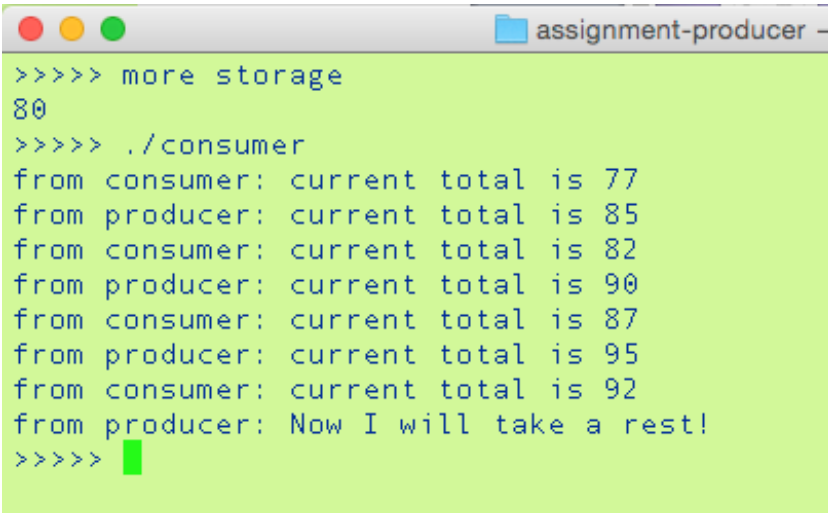
The producer checks the number in the storage. If the current number plus 8 will be 100 or larger, it will terminate. Otherwise, it will increase the number in the storage by 8 and then call the consumer to continue.

The consumer decreases the number in the storage by 3, and then calls the producer to continue.

Both the producer and the consumer can be the starter.

The C program must use system call I/O. No standard I/O library functions are allowed. It must *fork* a separate process to call the producer to continue.

Sample runs:

A terminal window titled "assignment-producer" with a light green background. It shows the execution of a bash script. The script starts by displaying the contents of the "storage" file, which is "80". Then, it runs the "./consumer" program. The output shows a series of messages from the consumer and producer, indicating the current total in storage. The consumer decreases the total by 3, and the producer increases it by 8. The sequence of totals is 77, 85, 82, 90, 87, 95, 92. Finally, the producer prints "Now I will take a rest!" and the prompt returns to the shell.

```
>>>> more storage
80
>>>> ./consumer
from consumer: current total is 77
from producer: current total is 85
from consumer: current total is 82
from producer: current total is 90
from consumer: current total is 87
from producer: current total is 95
from consumer: current total is 92
from producer: Now I will take a rest!
>>>>
```

```
assignment-producer -
>>>> ls
assignment-producer.docx      producer
consumer                      storage
consumer.c
>>>> more storage
55
>>>> ./producer
from producer: current total is 63
from consumer: current total is 60
from producer: current total is 68
from consumer: current total is 65
from producer: current total is 73
from consumer: current total is 70
from producer: current total is 78
from consumer: current total is 75
from producer: current total is 83
from consumer: current total is 80
from producer: current total is 88
from consumer: current total is 85
from producer: current total is 93
from consumer: current total is 90
from producer: current total is 98
from consumer: current total is 95
from producer: Now I will take a rest!
>>>>
```