

# OS ASSIGNMENT 2

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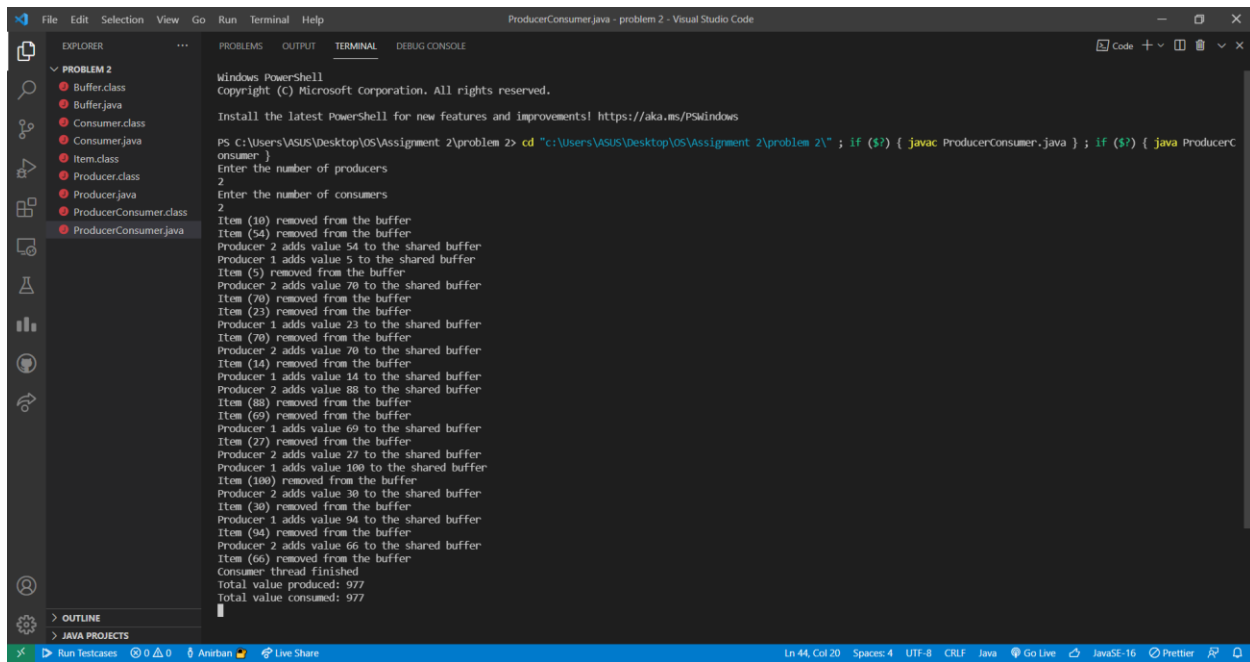
## Problem Statement

2) Write a program for p-producer c-consumer problem,  $p, c \geq 1$ . A shared circular buffer that can hold 50 items is to be used. Each producer process can store any number between 1 to 100 (along with the producer id) and deposit in the buffer. Each consumer process reads a number from the buffer and adds it to a shared variable TOTAL (initialized to 0). Though any consumer process can read any of the numbers in the buffer, the only constraint being that every number written by some producer should be read exactly once by exactly one of the consumers. The program reads in the value of p and c from the user, and forks p producers and c consumers. After all the producers and consumers have finished (the consumers exit after all the data produced by all producers have been read), the parent process prints the value of TOTAL. Test the program with different values of p and c.

## CODE

zip file attached along with this report

## OUTPUT



```
Windows PowerShell
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PS C:\Users\ASUS\Desktop\OS\Assignment 2\problem 2> cd "C:\Users\ASUS\Desktop\OS\Assignment 2\problem 2\"; if ($?) { javac ProducerConsumer.java }; if ($?) { java ProducerC
onsumer }
Enter the number of producers
2
Enter the number of consumers
2
Item (10) removed from the buffer
Item (54) removed from the buffer
Producer 2 adds value 54 to the shared buffer
Producer 1 adds value 5 to the shared buffer
Item (5) removed from the buffer
Producer 2 adds value 70 to the shared buffer
Item (70) removed from the buffer
Item (23) removed from the buffer
Producer 1 adds value 23 to the shared buffer
Item (70) removed from the buffer
Producer 2 adds value 70 to the shared buffer
Item (14) removed from the buffer
Producer 1 adds value 14 to the shared buffer
Producer 2 adds value 88 to the shared buffer
Item (88) removed from the buffer
Item (69) removed from the buffer
Producer 1 adds value 69 to the shared buffer
Item (27) removed from the buffer
Producer 2 adds value 27 to the shared buffer
Producer 1 adds value 100 to the shared buffer
Item (100) removed from the buffer
Producer 2 adds value 30 to the shared buffer
Item (30) removed from the buffer
Producer 1 adds value 94 to the shared buffer
Item (94) removed from the buffer
Producer 2 adds value 66 to the shared buffer
Item (66) removed from the buffer
Consumer thread finished
Total value produced: 977
Total value consumed: 977
```