ELEC 377 Lab 3: Producer Consumer – Testing

Section 003, Group 16 – Thursday Lab

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Testing

Case 1 - Many Producers, Many Consumers

In test 1 the program was executed with the following command, indicating that test 1 is running with 3 producers and 3 consumers. This is shown below:

./main 1 3 3

In this case, the program reads the contents of file “t10.dat”, “t11.dat”, “t12.dat”, and prints all into the output files “out10.dat” “out11.dat”, “out12.dat”. The following shows the terminal output as a result of this command.

```
21is8@elec377-thurs-16:~/elec377-Thurs-16/lab3$ ./main 1 3 3
Test Number 1
Number of producers 3
Number of consumers 3
Main: starting producer 0 with file t10.dat
Main: starting producer 1 with file t11.dat
Main: starting producer 2 with file t12.dat
Main: starting consumer 0 with file out10.dat
Main: starting consumer 1 with file out11.dat
Main: starting consumer 2 with file out12.dat
Enter consumer 2
Enter consumer 1
Enter consumer 0
Enter producer 2
Exit producer 2
Enter producer 1
Exit producer 1
Enter producer 0
Exiting consumer 1
Exiting consumer 2
Exiting consumer 0
Exit producer 0
```

Figure 1: Terminal output as a result of the “./main 1 3 3” command above.

Upon inspection of the output files, all data is read from the three producers, and outputted by the three consumers. In addition, all data is printed in the same order it is read from the input files, and no data is duplicated within the consumers. This meets all of the testing criteria, and is deemed successful as a result.

Case 2 – 1 Producer, 1 Consumer

In test 2, the program was executed with the following command, indicating that test 2 is running with 1 producer and 1 consumer. This is shown below:

./main 2 1 1

In this case, the program reads the contents of file “t20.dat” and prints into the output file “out20.dat”. The following shows the terminal output as a result of this command.

```
21is8@elec377-thurs-16:~/elec377-Thurs-16/lab3$ ./main 2 1 1
Test Number 2
Number of producers 1
Number of consumers 1
Main: starting producer 0 with file t20.dat
Main: starting consumer 0 with file out20.dat
Enter consumer 0
Enter producer 0
Exit producer 0
Exiting consumer 0
```

Figure 2: Terminal output as a result of the “./main 2 1 1” command above.

Upon inspection of the output file, all data is read from the producer, and outputted by the consumer. In addition, all data is printed in the same order it is read, and no data is duplicated. This meets all of the testing criteria, and is deemed successful as a result.

Case 3 – 1 Producer, Many Consumers

In test 3, the program was executed with the following command, indicating that test 3 is running with 1 producer and 3 consumers. This is shown below:

./main 3 1 3

In this case, the program reads the contents of file “t30.dat” and prints into the output files “out30.dat” “out31.dat”, “out32.dat”. The following shows the terminal output as a result of this command.

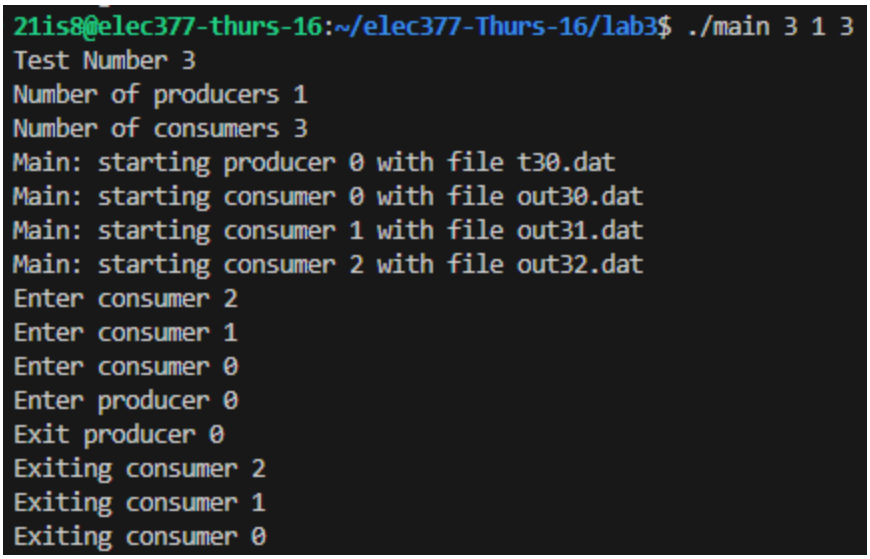

Figure 3: Terminal output as a result of the "./main 3 1 3" command above.

Upon inspection of the output files, all data is read from the producer, and outputted by the three consumers. In addition, all data is printed in the same order it is read, and no data is duplicated between the consumers. This meets all of the testing criteria, and is deemed successful as a result.

Case 4 – Many Producers, 1 Consumer

In test 4, the program was executed with the following command, indicating that test 4 is running with 3 producers and 1 consumer. This is shown below:

./main 4 3 1

In this case, the program reads the contents of file "t40.dat", "t41.dat", "t42.dat", and prints all into the output file "out40.dat". The following shows the terminal output as a result of this command.

```
21is8@elec377-thurs-16:~/elec377-Thurs-16/lab3$ ./main 4 3 1
Test Number 4
Number of producers 3
Number of consumers 1
Main: starting producer 0 with file t40.dat
Main: starting producer 1 with file t41.dat
Main: starting producer 2 with file t42.dat
Main: starting consumer 0 with file out40.dat
Enter consumer 0
Enter producer 2
Exit producer 2
Enter producer 1
Exit producer 1
Enter producer 0
Exiting consumer 0
Exit producer 0
```

Figure 4: Terminal output as a result of the "./main 4 3 1" command above.

Upon inspection of the output file, all data is read from the three producers, and outputted by the consumer. In addition, all data is printed in the same order it is read from the input files, and no data is duplicated within the consumer. This meets all of the testing criteria, and is deemed successful as a result.