



Government Engineering College Thrissur

Network Programming Lab

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S6, CSE

Second Readers Writers Problem

AIM

Implement the Second Readers-Writers Problem (Using Process along with PIPE and Message Queue).

THEORY

The readers-writers problem is a classical problem of process synchronization, it relates to a data set such as a file that is shared between more than one process at a time. Among these various processes, some are Readers - which can only read the data set (but here we modify the data as per test case); they do not perform any updates, some are Writers - can both read and write in the data sets.

The readers-writers problem is used for managing synchronization among various reader and writer processes so that there are no problems with the data sets, i.e. no inconsistency is generated.

HOW TO USE?

1. Navigate to the main directory containing the program.
2. Open terminal 1
3. Type `$ javac PipeChannel.java`
4. Enter `$ java PipeChannel` to see the output
5. Verify the output.

RESULT

Implemented the Second Readers-Writers Problem (Using Process along with PIPE and Message Queue)

Output Screenshots

TERMINAL 1
(First
Reader-Writers
Problem)

```
PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE
Process readerProcess5 is Executing22:58:07
Process writerProcess7 is Executing at22:58:07
Process writerProcess5 is Executing at22:58:07
(base) navaneeth@navaneeth-lap:~/Documents/2021/Network Lab/RWProblemPipes$ javac PipeChannel.java
(base) navaneeth@navaneeth-lap:~/Documents/2021/Network Lab/RWProblemPipes$ java PipeChannel
Enter number of Readers: 5
Enter number of Writers: 8
Process writerProcess1 is Executing at 23:00:31
Process writerProcess6 is Executing at 23:00:31
Process writerProcess8 is Executing at 23:00:31
Process writerProcess7 is Executing at 23:00:31
Process writerProcess3 is Executing at 23:00:31
Process readerProcess5 is Executing at 23:00:31
Process readerProcess2 is Executing at 23:00:31
Process readerProcess4 is Executing at 23:00:31
Process writerProcess4 is Executing at 23:00:31
Process readerProcess1 is Executing at 23:00:31
Process writerProcess2 is Executing at 23:00:31
Process readerProcess3 is Executing at 23:00:31
Process writerProcess5 is Executing at 23:00:31
(base) navaneeth@navaneeth-lap:~/Documents/2021/Network Lab/RWProblemPipes$ java PipeChannel
Enter number of Readers: 3
Enter number of Writers: 7
Process writerProcess1 is Executing at 23:00:56
Process writerProcess7 is Executing at 23:00:56
Process writerProcess6 is Executing at 23:00:56
Process readerProcess3 is Executing at 23:00:56
Process readerProcess2 is Executing at 23:00:56
Process writerProcess2 is Executing at 23:00:56
Process writerProcess5 is Executing at 23:00:56
Process writerProcess4 is Executing at 23:00:56
Process readerProcess1 is Executing at 23:00:56
Process writerProcess3 is Executing at 23:00:56
(base) navaneeth@navaneeth-lap:~/Documents/2021/Network Lab/RWProblemPipes$
```

Ln 40, Col 110