

# NETWORK PROGRAMMING LAB

## Experiment 8

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**Class CSE S6**

**ROLL NO 36**

**TCR18CS036**

## AIM

Implement the First Readers-Writers Problem (Using Threads and Shared Memory)

## THEORY

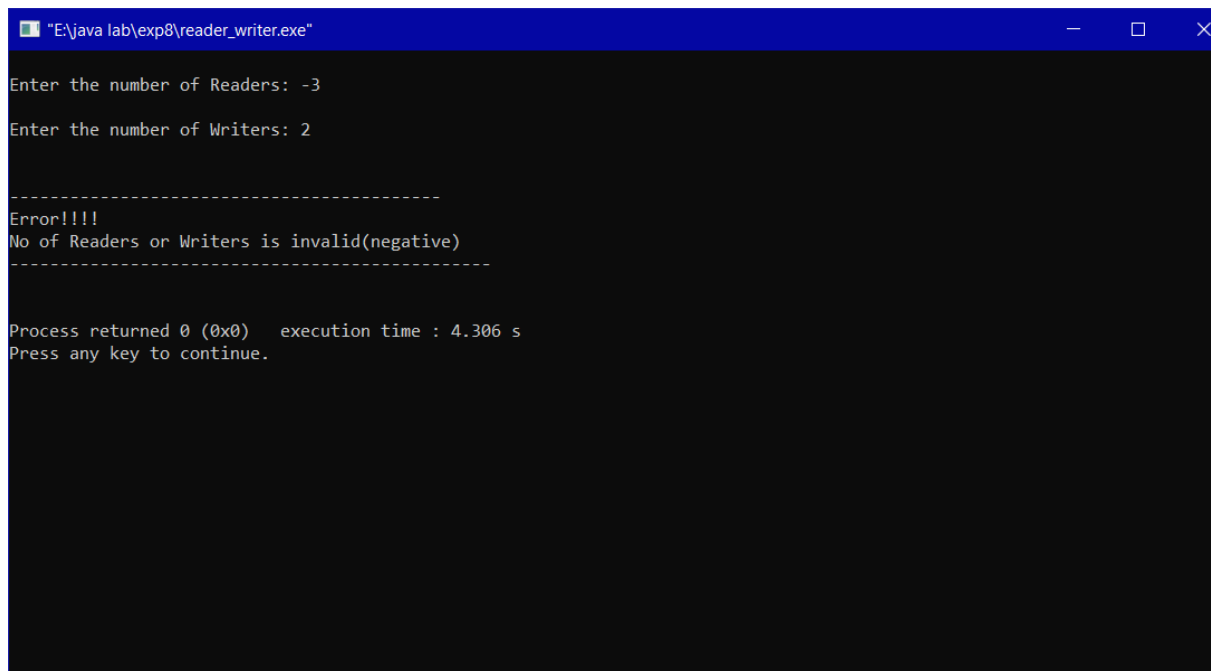
The readers-**writers problem** relates to an object such as a file that is shared between multiple processes. Some of these processes are readers i.e. they only want to read the data from the object and some of the processes are **writers** i.e. they want to **write** into the object.

Here the shared variable is incremented by the writer and reader reads the variable and then decrements it. Display the final value of the variable

## EXECUTION

Here , I use codeblock editor to write and run the program. In terminal we need to enter the no of reader and writer.then following result will display.

## Screenshots



```
"E:\java lab\exp8\reader_writer.exe"

Enter the number of Readers: -3
Enter the number of Writers: 2

-----
Error!!!!
No of Readers or Writers is invalid(negative)
-----

Process returned 0 (0x0)   execution time : 4.306 s
Press any key to continue.
```

```
Select "E:\java lab\exp8\reader_writer.exe"

Enter the number of Readers: 3
Enter the number of Writers: 4

-----
both threads created
-----

*****Initial value of cnt: 1
Writer 0 incremented cnt to 2
Writer 3 incremented cnt to 3
Writer 1 incremented cnt to 4
Writer 2 incremented cnt to 5
Reader 0: read cnt as 5
Reader 0: decremented cnt to 4
Reader 2: read cnt as 5
Reader 2: decremented cnt to 3
Reader 1: read cnt as 5
Reader 1: decremented cnt to 2
*****Final value of cnt: 2

Process returned 0 (0x0)   execution time : 8.503 s
Press any key to continue.
_
```

```
"E:\java lab\exp8\reader_writer.exe"

Enter the number of Readers: 2
Enter the number of Writers: 0

-----
No writer thread created.only reader thread created
-----

*****Initial value of cnt: 1
Reader 1: read cnt as 1
Reader 1: decremented cnt to 0
Reader 0: read cnt as 1
Reader 0: decremented cnt to -1
*****Final value of cnt: -1

Process returned 0 (0x0)   execution time : 4.932 s
Press any key to continue.
_
```

```
"E:\java lab\exp8\reader_writer.exe"

Enter the number of Readers: 0
Enter the number of Writers: 2

-----
No reader thread created,only writer thread created
-----

*****Initial value of cnt: 1
Writer 0 incremented cnt to 2
Writer 1 incremented cnt to 3
*****Final value of cnt: 3

Process returned 0 (0x0)   execution time : 5.821 s
Press any key to continue.
■
```