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Assignment 5: Implementation of Reader-Writer problem using Threads and Semaphores.

**Code:**

#include <stdio.h>

#include <semaphore.h>

#include <pthread.h>

int a=5;

//void \*p1,\*p2;

sem\_t s1,s2;

void \*read();

void \*write();

int main()

{

pthread\_t rth,wth;

int r1,r2;

sem\_init(&s1,0,0);

sem\_init(&s2,0,1);

r1 = pthread\_create(&rth,NULL,read,NULL);

r2 = pthread\_create(&wth,NULL,write,NULL);

if(r1==0 && r2 ==0)

printf("Success\n");

else

printf("Fail\n");

pthread\_join(rth,NULL);//or p1

pthread\_join(wth,NULL);// or p2

sem\_destroy(&s1);

sem\_destroy(&s2);

}

void \*read()

{

printf("I am in read\n");

while(1)

{

sem\_wait(&s2);

printf("a=%d\n",a );

sem\_post(&s1);

sleep(1);

}

//pthread\_exit(&p1);

}

void \*write()

{

printf("I am in write\n");

while(1)

{

sem\_wait(&s1);

a++;

sem\_post(&s2);

}

//pthread\_exit(&p2);

}

**Output:**

adnan@Aspire-E15:~/Documents/OS/Assignment$ ./a.out

success

i am in read

i am in write

a=7

a=9

a=10

a=11

a=12

a=13

a=14

a=15

a=16

a=17

a=18

a=19

a=20

a=21

a=22

a=23

a=24