#include<stdio.h>

//#include<stdlib.h>

#include<semaphore.h>

#include<pthread.h>

sem\_t wrt;

pthread\_mutex\_t mutex;

int cnt=1;

int numreader=0;

void \*writer(void \*wno)

{

sem\_wait(&wrt);

cnt=cnt\*2;

printf("Writer %d modified cnt to %d \n",(((int)wno)),cnt);

sem\_post(&wrt);

}

void \*reader(void \*rno)

{

pthread\_mutex\_lock(&mutex);

numreader++;

if(numreader==1)

{

sem\_wait(&wrt);

}

pthread\_mutex\_unlock(&mutex);

printf("Reader %d: read cnt as %d \n",((int)rno),cnt);

pthread\_mutex\_lock(&mutex);

numreader--;

if(numreader==0)

{

sem\_post(&wrt);

}

pthread\_mutex\_unlock(&mutex);

}

int main()

{

pthread\_t read[10],write[5];

pthread\_mutex\_init(&mutex,NULL);

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

int a[10]={1,2,3,4,5,6,7,8,9,10};

for(int i=0;i<10;i++)

{

pthread\_create(&read[i],NULL,(void\*)reader,(void\*)&a[i]);

}

for(int i=0;i<5;i++)

{

pthread\_create(&write[i],NULL,(void\*)writer,(void\*)&a[i]);

}

for(int i=0;i<10;i++)

{

pthread\_join(read[i],NULL);

}

for(int i=0;i<5;i++)

{

pthread\_join(write[i],NULL);

}

pthread\_mutex\_destroy(&mutex);

sem\_destroy(&wrt);

return 0;

}