#include<stdio.h>

#include<pthread.h>

#include<semaphore.h>

int data=0,rcount=0;

sem\_t mutex,writeblock;

void \*reader(void \*arg)

{

int f=((int)(&arg));

sem\_wait(&mutex);

rcount++;

if(rcount==1)

{

sem\_wait(&writeblock);

}

sem\_post(&mutex);

printf("Data read by the reader %d is %d \n",f,data);

sleep(1);

sem\_wait(&mutex);

rcount--;

if(rcount==0)

{

sem\_post(&writeblock);

}

sem\_post(&mutex);

}

void \*writer(void \*arg)

{

int f=((int)(&arg));

sem\_wait(&writeblock);

data++;

printf("Data written by writer %d to %d \n",f,data);

sleep(1);

sem\_post(&writeblock);

}

int main()

{

int i,b;

pthread\_t rtid[5],wtid[5];

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

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

for(i=0;i<3;i++)

{

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

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

}

for(i=0;i<3;i++)

{

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

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

}

return 0;

}