/ / READER WRITER PROGRAM USING SEMAPHORES

```
#include<stdio.h>
#include<iostream>
using namespace std;
#include<pthread.h>

class semo
{
public:
int v;
};

void wait(semo*  tp)
{
--(tp->v);
while(tp->v <0);
}

void signal(semo* tp)
{
++(tp->v);
 }

semo rwmutex;
semo mutex;
int ct;
int kl,bbb;

void *writer(void* tp)
{
  ++kl;
  wait(&rwmutex);
 cout<<"writer is writing : "<<kl<<"\n";
  signal(&rwmutex);
 }

void *reader(void* tp)
{
  ++bbb;
  wait(&mutex);
++ct;

  if(ct==1)
  wait(&rwmutex);
 signal(&mutex);
 cout<<"reader is redaing: "<<bbb<<"\n";
 wait(&mutex);
```

```
--ct;

if(ct==0)
 signal(&rwmutex);
signal(&mutex);
}

main()
{

 pthread_t rd[110],wr[2];
 rwmutex.v=1;
 mutex.v=1;
 ct=0;
 kl=bbb=0;
  for( int kk=0;kk<100;++kk)
     pthread_create(&rd[kk],NULL,reader,NULL);

  pthread_create(&wr[0],NULL,writer,NULL);
  pthread_create(&wr[1],NULL,writer,NULL);

for(int kk=0;kk<10;++kk)
    pthread_create(&rd[100+kk],NULL,reader,NULL);

  pthread_join(wr[0],NULL);
  pthread_join(wr[1],NULL);

for(int kk=0;kk<110;++kk)
    pthread_join(rd[kk],NULL);
}
```