管程实现读者写者问题

Monitor readwrite

{

condition read\_mutex, write\_mutex;

int read\_count, write\_count;

public:

void start\_read( )

{

if(write\_count == 1)

cwait(read\_mutex);

read\_count++;

csignal(read\_mutex);

}

void end\_read( )

{

read\_count--;

if(read\_count==0)

csignal(write\_mutex);

}

void start\_write( )

{

if(read\_count > 0||write\_count == 1)

cwait(write\_mutex);

write\_count = 1;

}

void end\_write( )

{

write\_count = 0;

if(read\_mutex != NULL)

csignal(read\_mutex);

else

csignal(write\_mutex);

}

{

read\_count = 0;

write\_count = 0;

}

}RW;

void Readers( )

{

while(true)

{

RW.start\_read( );

reading

RW.end\_read( );

}

}

void Writers( )

{

while(true)

{

RW.start\_write( );

writing

RW.end\_write( );

}

}

void main( )

{

cobegin

Readers();

Writers();

coend

}