ReaderWriter

**import** java.util.concurrent.Semaphore;

**import** java.util.Scanner;

**public** **class** WriterReader {

**static** Semaphore *mutex* = **new** Semaphore (1);

**static** Semaphore *wrt* = **new** Semaphore (1);

**static** **int** *readCount*=0;

**static** String *message* ="hello";

**static** Scanner *sc*= **new** Scanner (System.***in***);

**static** **class** Reader **implements** Runnable

{

**public** **void** run()

{

**try**

{

*mutex*.acquire();

*readCount*++;

**if**(*readCount*==1)

{

*wrt*.acquire();

}

*mutex*.release();

System.***out***.println("Thread "+Thread.*currentThread*().getName()+"is Reading :"+*message*);

System.***out***.println("Thread"+Thread.*currentThread*().getName() + "has finished Reading");

*mutex*.acquire();

*readCount*--;

**if**(*readCount*==0)

{

*wrt*.release();

}

*mutex*.release();

}

**catch** (InterruptedException e)

{

System.***out***.println(e.getMessage());

}

}

}

**static** **class** Writer **implements** Runnable

{

**public** **void** run()

{

**try**

{

*wrt*.acquire();

*message* ="Good Morning";

System.***out***.println("Thread"+Thread.*currentThread*().getName()+"is waiting:"+*message*);

Thread.*sleep*(1500);

System.***out***.println("Thread"+Thread.*currentThread*().getName()+"has finished Writing:");

*wrt*.release();

}

**catch** (InterruptedException e)

{

System.***out***.println(e.getMessage());

}

}

}

**public** **static** **void** main(String [] args) **throws** Exception

{

Reader read=**new** Reader();

Writer write= **new** Writer();

Thread r1=**new** Thread(read);

r1.setName("Reader1");

Thread r2= **new** Thread(read);

r2.setName("Reader2");

Thread r3= **new** Thread(read);

r3.setName("Reader3");

Thread w1= **new** Thread(write);

w1.setName("Writer1");

Thread w2= **new** Thread(write);

w2.setName("Writer2");

Thread w3= **new** Thread(write);

w3.setName("Writer 3");

w1.start();

r1.start();

w2.start();

r2.start();

w3.start();

r3.start();

}

}

OUTPUT:-

