

Analyze 2 pieces of code, why the left side is wrong and the right side is correct, or there are problems with both pieces of code, give the corresponding analysis

Solution

❑ Define shared variables:

int n = the number of threads;

int count = 0; //count keeps track of how many processes have arrived

Semaphore mutex = 1; //mutex provides exclusive access to count so that
//threads can increment it safely

Semaphore barrier = 0; //barrier is locked (zero) until all threads arrive

❑ Process i:

```
rendezvous i:  
semWait(mutex);  
count = count + 1;  
semSignal(mutex);  
if (count == n) semSignal(barrier);  
semWait(barrier);
```

critical point i;

```
rendezvous i:  
semWait(mutex);  
count = count + 1;  
semSignal(mutex);  
if (count == n) semSignal(barrier);  
semWait(barrier);
```

```
semSignal(barrier);
```

critical point i;