

Restrooms and Semaphores

| | | |
|--------------------------|----------|-------------------------------|
| restroom | cnt | (shared resource or variable) |
| person 1 | thread 1 | |
| person 2 | thread 2 | |
| no. of keys on the table | s | (semaphore) |
| initially: one key | s = 1 | |

How to go to the restroom?

| | | |
|--|---|------|
| if key on table take it and go | } | P(s) |
| else wait until key on table then take it and go | | |
| <go to restroom> return key | } | Q(s) |

Deadlock:

2 semaphores: S_0 : key for restroom
 S_1 : key for bathroom

person 1: always acquires S_0 , then S_1
person 2: " " S_1 " S_0

based on a discussion
with Vas Chellappa