

### Case 3:

4 gophers(G1,G2,G3,G4),2 incinerators(I1,I2),One pile of books(P).

Steps:

While the number of books is greater than 0 DO

- 1.G1 sets the lock on the pile(mutex) and loads the books.
- 2.After loading the books, G1 removes the lock and goes to the incinerator 1.
- 3.G2 sets the lock on the pile and loads the books and removes the lock after loading the books.
- 4.G3 takes the books from G1 and exchanges the empty cart with G1.
- 5.G4 takes the books from G2 and exchanges the empty cart with G2.
- 6.G3 burns the books in I1 and G4 burns the books in I2.
- 7.G1 goes to the pile.
- 8.G2 goes to the pile.

G4					UL2	B	B	UL2	B	B	
G3				UL1	B	B	UL1	B	B		ULI1
G2		LP	GTI2	GTI2	GTI2	GTP	GTP	GTP	LP	GTI2	GTI2
G1	LP	GTI1	GTI1	GTI1	GTP	GTP	GTP	LP	GTI1	GTI1	GTI1
	10	20	30	40	50	60	70	80	90	100	110

G4	ULI2	B	B	ULI2	B	B		ULI2	B	B	ULI2
G3	B	B	ULI1	B	B		ULI1	B	B	ULI1	B
G2	GTI2	GTP	GTP	GTP	LP	GTI2	GTI2	GTI2	GTP	GTP	GTP
G1	GTP	GTP	GTP	LP	GTI1	GTI1	GTI1	GTP	GTP	GTP	LP
	120	130	140	150	160	170	180	190	200	210	220

G4	B	B		UL2	B	B	UL2	B	B		ULI2
G3	B		ULI1	B	B	ULI1	B	B		ULI1	B
G2	LP	GTI2	GTI2	GTI2	GTP	GTP	GTP	LP	GTI2	GTI2	GTI2
G1	GTI1	GTI1	GTI1	GTP	GTP	GTP	LP	GTI1	GTI1	GTI1	
	230	240	250	260	270	280	290	300	310	320	330

G4	B	B	ULI2	B	B
G3	B	ULI1	B	B	
G2					
G1					
	340	350	360	370	380

LP: LOAD FROM PILE

B:BURN

GTI1:GO TO INCINERATOR 1

GTI2:GO TO INCINERATOR 2

ULI1:UNLOAD TO INCINERATOR 1

ULI2:UNLOAD TO INCINERATOR 2

GTP:GO TO PILE

Total time: 380 seconds