Thread SchedulE #2

State:
0x9cd4: 100
%eax: ?
%rip = 0x195

thread control blocks:

Thread 1	Thread 2
%eax: ? %rip: 0x195	%eax: ? %rip: 0x195

T1

- 0x195 mov 0x9cd4, %eax
- 0x19a add $0x1, %eax
- 0x19d mov %eax, 0x9cd4

Thread SchedulE #2

State:
0x9cd4: 100
%eax: 100
%rip = 0x19a

thread control blocks:

Thread 1	Thread 2
%eax: ? %rip: 0x195	%eax: ? %rip: 0x195

T1

- 0x195 mov 0x9cd4, %eax
- 0x19a add $0x1, %eax
- 0x19d mov %eax, 0x9cd4

Thread SchedulE #2

State:
0x9cd4: 100
%eax: 101
%rip = 0x19d

	Thread 1	Thread 2
thread control blocks:	%eax: ? %rip: 0x195	%eax: ? %rip: 0x195

T1

- 0x195 mov 0x9cd4, %eax
- 0x19a add $0x1, %eax
- 0x19d mov %eax, 0x9cd4

Thread Context Switch

Thread SchedulE #2

State:
0x9cd4: 100
%eax: ?
%rip = 0x195

thread control blocks:

Thread 1	Thread 2
%eax: 101 %rip: 0x19d	%eax: ? %rip: 0x195

T2

- 0x195 mov 0x9cd4, %eax
- 0x19a add $0x1, %eax
- 0x19d mov %eax, 0x9cd4

Thread SchedulE #2

State:
0x9cd4: 100
%eax: 100
%rip = 0x19a

thread control blocks:

Thread 1	Thread 2
%eax: 101 %rip: 0x19d	%eax: ? %rip: 0x195

T2

- 0x195 mov 0x9cd4, %eax
- 0x19a add $0x1, %eax
- 0x19d mov %eax, 0x9cd4

Thread SchedulE #2

State:
0x9cd4: 100
%eax: 101
%rip = 0x19d

thread control blocks:

Thread 1	Thread 2
%eax: 101 %rip: 0x19d	%eax: ? %rip: 0x195

T2

- 0x195 mov 0x9cd4, %eax
- 0x19a add $0x1, %eax
- 0x19d mov %eax, 0x9cd4

Thread SchedulE #2

State:
0x9cd4: 101
%eax: 101
%rip = 0x1a2

thread control blocks:

Thread 1	Thread 2
%eax: 101 %rip: 0x19d	%eax: ? %rip: 0x195

T2

- 0x195 mov 0x9cd4, %eax
- 0x19a add $0x1, %eax
- 0x19d mov %eax, 0x9cd4A

Thread SchedulE #2

State:
0x9cd4: 101
%eax: 101
%rip = 0x1a2

thread control blocks:

Thread 1	Thread 2
%eax: 101 %rip: 0x19d	%eax: ? %rip: 0x195

T2

- 0x195 mov 0x9cd4, %eax
- 0x19a add $0x1, %eax
- 0x19d mov %eax, 0x9cd4

Thread Context Switch

Thread SchedulE #2

State:
0x9cd4: 101
%eax: 101
%rip = 0x19d

thread control blocks:

Thread 1	Thread 2
%eax: 101 %rip: 0x19d	%eax: 101 %rip: 0x1a2

T1

- 0x195 mov 0x9cd4, %eax
- 0x19a add $0x1, %eax
- 0x19d mov %eax, 0x9cd4

Thread Context Switch

Thread SchedulE #2

State:
0x9cd4: 101
%eax: 101
%rip = 0x19d

	Thread 1	Thread 2
thread control blocks:	%eax: 101 %rip: 0x19d	%eax: 101 %rip: 0x1a2

T1

- 0x195 mov 0x9cd4, %eax
- 0x19a add $0x1, %eax
- 0x19d mov %eax, 0x9cd4

Thread SchedulE #2

State:
0x9cd4: 101
%eax: 101
%rip = 0x1a2

	Thread 1	Thread 2
thread control blocks:	%eax: 101 %rip: 0x1a2	%eax: 101 %rip: 0x1a2

T1

- 0x195 mov 0x9cd4, %eax
- 0x19a add $0x1, %eax
- 0x19d mov %eax, 0x9cd4

Thread SchedulE #2

State:
0x9cd4: 101
%eax: 101
%rip = 0x1a2

	Thread 1	Thread 2
thread control blocks:	%eax: 101 %rip: 0x1a2	%eax: 101 %rip: 0x1a2

- 0x195 mov 0x9cd4, %eax
- 0x19a add $0x1, %eax
- 0x19d mov %eax, 0x9cd4

T1 

WRONG Result! Final value of balance is 101

Timeline View

Thread 1

mov 0x123, %eax

add %0x1, %eax

mov %eax, 0x123

Thread 2

mov 0x123, %eax

add %0x2, %eax

mov %eax, 0x123

How much is added to shared variable? 3: correct!

Timeline View

Thread 1

mov 0x123, %eax

add %0x1, %eax

mov %eax, 0x123

Thread 2

mov 0x123, %eax

add %0x2, %eax

mov %eax, 0x123

How much is added?

2: incorrect!

Timeline View

Thread 1

Thread 2

mov 0x123, %eax

mov 0x123, %eax

add %0x2, %eax

add %0x1, %eax

mov %eax, 0x123

mov %eax, 0x123

How much is added?

1: incorrect!

Timeline View

Thread 1	Thread 2
	mov 0x123, %eax
	add %0x2, %eax
	mov %eax, 0x123
mov 0x123, %eax	
add %0x1, %eax	
mov %eax, 0x123	

How much is added? 3: correct!

Timeline View

Thread 1

Thread 2

mov 0x123, %eax

add %0x1, %eax

mov %eax, 0x123

mov 0x123, %eax

add %0x2, %eax

mov %eax, 0x123

How much is added? 2: incorrect!