

Loop Race Conditions

Due Oct 24, 2019 at 11:59pm**Points** 13**Questions** 13**Time Limit** None**Allowed Attempts** Unlimited

This quiz is no longer available as the course has been concluded.

Attempt History

	Attempt	Time	Score
KEPT	Attempt 2	less than 1 minute	13 out of 13
LATEST	Attempt 2	less than 1 minute	13 out of 13
	Attempt 1	9 minutes	11 out of 13

Score for this attempt: **13** out of 13

Submitted Oct 22, 2019 at 1:49pm

This attempt took less than 1 minute.

Question 1

1 / 1 pts

Value in %ax after instruction 4?

Correct!**Correct Answers**

1 (with margin: 0)

2000	ax	Thread 0	Thread 1
0	0	0	
1	0	0	1000 mov 2000, %ax
2	0	0	----- Interrupt -----
3	0	0	1000 mov 2000, %ax
4	0	1	1001 add \$1, %ax

Question 2

1 / 1 pts

Value in %ax after instruction 5?

Correct!

0

Correct Answers

0 (with margin: 0)

2000	ax	Thread 0	Thread 1
0	0	0	
1	0	0	1000 mov 2000, %ax
2	0	0	----- Interrupt -----
3	0	0	1000 mov 2000, %ax
4	0	1	1001 add \$1, %ax
5	0	0	----- Interrupt -----

Question 3**1 / 1 pts**

Value in %ax after instruction 6?

Correct!**Correct Answers**

1 (with margin: 0)

0	0	0	
1	0	0	1000 mov 2000, %ax
2	0	0	----- Interrupt ----- Interrupt -----
3	0	0	1000 mov 2000, %ax
4	0	1	1001 add \$1, %ax
5	0	0	----- Interrupt ----- Interrupt -----
6	0	1	1001 add \$1, %ax

Question 4**1 / 1 pts**

Value in address 2000 after instruction 11?

Correct!**Correct Answers**

1 (with margin: 0)

0	0	0	
1	0	0	1000 mov 2000, %ax
2	0	0	----- Interrupt ----- ----- Interrupt -----
3	0	0	1000 mov 2000, %ax
4	0	1	1001 add \$1, %ax
5	0	0	----- Interrupt ----- ----- Interrupt -----
6	0	1	1001 add \$1, %ax
7	1	1	1002 mov %ax, 2000
8	1	1	1003 sub \$1, %bx
9	1	1	1004 test \$0, %bx
10	1	1	----- Interrupt ----- ----- Interrupt -----
11	1	1	1002 mov %ax, 2000

Question 5**1 / 1 pts**

Value in %ax after instruction 17?

Correct!

2

Correct Answers

2 (with margin: 0)

0	0	0	
1	0	0	1000 mov 2000, %ax
2	0	0	----- Interrupt ----- Interrupt -----
3	0	0	1000 mov 2000, %ax
4	0	1	1001 add \$1, %ax
5	0	0	----- Interrupt ----- Interrupt -----
6	0	1	1001 add \$1, %ax
7	1	1	1002 mov %ax, 2000
8	1	1	1003 sub \$1, %bx
9	1	1	1004 test \$0, %bx
10	1	1	----- Interrupt ----- Interrupt -----
11	1	1	1002 mov %ax, 2000
12	1	1	1003 sub \$1, %bx
13	1	1	1004 test \$0, %bx
14	1	1	----- Interrupt ----- Interrupt -----
15	1	1	1005 jgt .top
16	1	1	1000 mov 2000, %ax
17	1	2	1001 add \$1, %ax

Question 6

1 / 1 pts

Value in %ax after instruction 20?

Correct!

Correct Answers

1 (with margin: 0)

```

10      1      1  ----- Interrupt -----  ----- Interrupt -----
11      1      1                               1002 mov %ax, 2000
12      1      1                               1003 sub  $1, %bx
13      1      1                               1004 test $0, %bx
14      1      1  ----- Interrupt -----  ----- Interrupt -----
15      1      1  1005 jgt .top
16      1      1  1000 mov 2000, %ax
17      1      2  1001 add $1, %ax
18      1      1  ----- Interrupt -----  ----- Interrupt -----
19      1      1                               1005 jgt .top
20      1      1                               1000 mov 2000, %ax

```

Question 7

1 / 1 pts

Value in address 2000 after instruction 28?

Correct!

Correct Answers

2 (with margin: 0)

```

18      1      1  ----- Interrupt -----  ----- Interrupt -----
19      1      1                                1005 jgt .top
20      1      1                                1000 mov 2000, %ax
21      1      2  ----- Interrupt -----  ----- Interrupt -----
22      2      2  1002 mov %ax, 2000
23      2      2  1003 sub $1, %bx
24      2      2  1004 test $0, %bx
25      2      2  1005 jgt .top
26      2      1  ----- Interrupt -----  ----- Interrupt -----
27      2      2                                1001 add $1, %ax
28      2      2                                1002 mov %ax, 2000

```

Question 8**1 / 1 pts**

Value in %ax after instruction 36?

Correct!

3

Correct Answers

3 (with margin: 0)

28	2	2	1002	mov %ax, 2000
29	2	2	1003	sub \$1, %bx
30	2	2	-----	Interrupt ----- Interrupt -----
31	2	2	1000	mov 2000, %ax
32	2	2	-----	Interrupt ----- Interrupt -----
33	2	2	1004	test \$0, %bx
34	2	2	1005	jgt .top
35	2	2	-----	Interrupt ----- Interrupt -----
36	2	3	1001	add \$1, %ax

Question 9

1 / 1 pts

Value in %ax after instruction 38?

Correct!

2

Correct Answers

2 (with margin: 0)

28	2	2		1002 mov %ax, 2000
29	2	2		1003 sub \$1, %bx
30	2	2	----- Interrupt -----	----- Interrupt -----
31	2	2	1000 mov 2000, %ax	
32	2	2	----- Interrupt -----	----- Interrupt -----
33	2	2		1004 test \$0, %bx
34	2	2		1005 jgt .top
35	2	2	----- Interrupt -----	----- Interrupt -----
36	2	3	1001 add \$1, %ax	
37	2	2	----- Interrupt -----	----- Interrupt -----
38	2	2		1000 mov 2000, %ax

Question 10**1 / 1 pts**

Value in %ax after instruction 52?

Correct!

4

Correct Answers

4 (with margin: 0)

38	2	2		1000 mov 2000, %ax
39	2	3		1001 add \$1, %ax
40	3	3		1002 mov %ax, 2000
41	3	3		1003 sub \$1, %bx
42	3	3	----- Interrupt -----	----- Interrupt -----
43	3	3	1002 mov %ax, 2000	
44	3	3	1003 sub \$1, %bx	
45	3	3	1004 test \$0, %bx	
46	3	3	1005 jgt .top	
47	3	3	----- Interrupt -----	----- Interrupt -----
48	3	3		1004 test \$0, %bx
49	3	3		1005 jgt .top
50	3	3	----- Interrupt -----	----- Interrupt -----
51	3	3	1000 mov 2000, %ax	
52	3	4	1001 add \$1, %ax	

Question 11**1 / 1 pts**

Value in %ax after instruction 54?

Correct!

3

Correct Answers

3 (with margin: 0)

38	2	2	1000 mov 2000, %ax
39	2	3	1001 add \$1, %ax
40	3	3	1002 mov %ax, 2000
41	3	3	1003 sub \$1, %bx
42	3	3	----- Interrupt ----- Interrupt -----
43	3	3	1002 mov %ax, 2000
44	3	3	1003 sub \$1, %bx
45	3	3	1004 test \$0, %bx
46	3	3	1005 jgt .top
47	3	3	----- Interrupt ----- Interrupt -----
48	3	3	1004 test \$0, %bx
49	3	3	1005 jgt .top
50	3	3	----- Interrupt ----- Interrupt -----
51	3	3	1000 mov 2000, %ax
52	3	4	1001 add \$1, %ax
53	3	3	----- Interrupt ----- Interrupt -----
54	3	3	1000 mov 2000, %ax

Question 12

1 / 1 pts

Value in address 2000 after instruction 59?

Correct!

Correct Answers

4 (with margin: 0)

```

47      3      3      ----- Interrupt ----- ----- Interrupt -----
48      3      3                               1004 test $0, %bx
49      3      3                               1005 jgt .top
50      3      3      ----- Interrupt ----- ----- Interrupt -----
51      3      3      1000 mov 2000, %ax
52      3      4      1001 add $1, %ax
53      3      3      ----- Interrupt ----- ----- Interrupt -----
54      3      3                               1000 mov 2000, %ax
55      3      4                               1001 add $1, %ax
56      4      4                               1002 mov %ax, 2000
57      4      4                               1003 sub $1, %bx
58      4      4      ----- Interrupt ----- ----- Interrupt -----
59      4      4      1002 mov %ax, 2000

```

Question 13

1 / 1 pts

If there had not been a race condition, what would have been the final value in address 2000?

Correct!

Correct Answers

6 (with margin: 0)

Two threads each loop 3 times; each loop increments variable by 1.

$$2 * 3 = 6$$

Quiz Score: **13** out of 13