Quiz - Lecture 14

Due 11 Sep at 23:59

Points 5

Questions 4

Available 10 Sep at 9:10 - 11 Sep at 23:59 1 day

Time limit None

Allowed attempts Unlimited

Instructions

These questions are about virtual machine code.

Take the quiz again

Attempt history

	Attempt	Time	Score
KEPT	Attempt 2	2 minutes	5 out of 5
LATEST	Attempt 2	2 minutes	5 out of 5
	Attempt 1	less than 1 minute	1.22 out of 5

Score for this attempt: 5 out of 5

Submitted 11 Sep at 0:47

This attempt took 2 minutes.

Question 1 2 / 2 pts

What are each of the following memory segments used for in the Hack Virtual machine?

Correct!	static	holds values of class static val
		Holds values of class static val.
Correct!	argument	holds the arguments for the c 🗸
Correct!	local	
	.000.	holds the local variables for th
Correct!	constant	represents all the constants ir ✓
0.000.041		
Correct!	pointer	used to change the start addr 🗸
Correct!	temp	fixed 8-entry segment that hc ❖
Correct!	field	this is not a segment 🗸
Correct!	var	this is not a securent
		this is not a segment 🗸
Correct!	result	this is not a segment 🗸

Question 2 1 / 1 pts

Consider the following **Jack** class:

```
class bob
{
    function int foo(int a)
    {
        var int x;
        let x = a + x;
        return x;
    }
}
```

What are the first three virtual machine commands that implement function foo?

```
function bob.foo 1
push constant 0
push argument 0
```

Correct!

```
function bob.foo 1
push argument 0
push local 0
```

```
push argument 0
push local 0
add

function bob 1
push argument 0
push local 0

function bob.foo 1
push argument 0
pop pointer 0
```

Question 3 1 / 1 pts

Consider the following **Jack** function:

```
function int foo()
{
    var a,b,sum ;

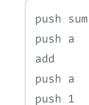
    let b = 10 ;
    while ( a < b )
    {
        let sum = sum + a ;
        let a = a + 1 ;
    }
}</pre>
```

```
return sum ;
}
```

What sequence of virtual machine commands will implement the two let statements in the body of the while loop?

```
push local 2
push local 0
add
push local 0
push constant 1
add
```

```
push local 3
push local 1
add
pop local 3
push local 1
push constant 1
add
pop local 1
```



add

```
push local 3
push local 1
add
push local 1
push constant 1
add
push sum
push a
add
pop sum
push a
push 1
add
рор а
push local 2
push local 0
add
pop local 2
push local 0
push constant 1
add
pop local 0
```

Correct!

Question 4 1 / 1 pts

Consider the following **Jack** class:

```
class bob
{
    function int foo(int a)
    {
        var int x;
        let x = a + x;
        return x;
    }
}
```

What sequence of virtual machine commands is used to initialise the local variable x?

O function foo 1

push constant 0
pop x

Correct!

function bob.foo 1

The programmer has forgotten to initialise x, no code is generated.

push constant 0

push constant 0
pop local 0

The function command initialises all local variables by pushing the required number of 0s onto the stack. No additional virtual machine commands are required.

Quiz score: 5 out of 5