

Unit 12 - Week 10

Course outline

How does an NPTEL online course work?

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The Jack Compiler - Back-end Introduction

The Jack Compiler - Handling Variables

The Jack Compiler - Handling Expressions

The Jack Compiler - Handling Flow of Control

The Jack Compiler - Handling Objects

The Jack Compiler - Handling Arrays

Quiz : Assignment 10

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Assignment 10

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2020-04-08, 23:59 IST.

1) Which of the following identifier(s) will be stored in the symbol table? 1 point

- Local variable name
- Class name
- function name
- Static variable name

No, the answer is incorrect.
Score: 0

Accepted Answers:
Local variable name
Static variable name

2) For each variable, which of the following properties are stored in the symbol table? 1 point

- SP, ARG, LCL, THIS, THAT of the function in which it is present
- variable type
- position of variable in segment (local, arg)
- Line numbers in JACK program where they are used.

No, the answer is incorrect.
Score: 0

Accepted Answers:
variable type
position of variable in segment (local, arg)

3) Which JACK statement closely matches the given VM code in terms of functionality? 1 point

```
push local 0 // variable a
pop pointer 1
push constant 3
pop that 7
```

- let a[2] = 7;
- let a[6] = 3;
- let a[7] = 3;
- let a[3] = 7;

No, the answer is incorrect.
Score: 0

Accepted Answers:
let a[7] = 3;

4) Memory for arrays and objects are allocated respectively in _____ and _____ . 1 point

- stack, heap
- heap, stack
- stack, stack
- heap, heap

No, the answer is incorrect.
Score: 0

Accepted Answers:
heap, heap

5) To access a variable of an object, the variable is dereferenced through the base address of the object. Where is this base address is located in the memory, **before being loaded for dereferencing?** 1 point

- THAT pointer
- working stack / static segment / heap
- THAT pointer stored during function call
- None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
working stack / static segment / heap

6) In the given code, assume THIS pointer points to an object of type X. For the class declaration of X given below, which variable is being accessed using the VM code **push this 2**? 1 point

```
class A{
    field int x, y;
    static int t1, t2, t3;
    field int b, c;
}
```

- y
- t3
- b
- t2

No, the answer is incorrect.
Score: 0

Accepted Answers:
b

7) Given the class declarations for two classes A and B, calculate the size (in number of words) of each object of type A (size of int = 1 word). 1 point

```
class A
{
    field int x, y;
    static int a;
    field B b;
}
class B
{
    field int a, b;
}
```

No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: Numeric) 3

8) If the number of arguments of a method of a class in JACK language is n, the number of arguments of the same function in VM language is _____. 1 point

- n+1
- n
- n-1
- Depends on the method

No, the answer is incorrect.
Score: 0

Accepted Answers:
n+1

9) The for statement in JACK language, when translated to VM code, will contain 1 point

- 1 unconditional jump, 1 conditional jump
- 1 unconditional jump, no conditional jump
- 0 unconditional jump, 1 conditional jump
- 2 unconditional, 1 conditional jump

No, the answer is incorrect.
Score: 0

Accepted Answers:
1 unconditional jump, 1 conditional jump

10) Which of the following expression best matches the given VM code? 1 point

```
push 3
push a
push 2
add
call f // takes two arguments
neg
```

- (a+2, 3)
- f(3, a+2)
- f(-3, a+2)
- f(a, 2+3)

No, the answer is incorrect.
Score: 0

Accepted Answers:
-f(3, a+2)