

CSCI 201.001 Fall 2004 Quiz 1 Answers

23 September, 2004

Question 1 (4 points)

Which of the following boxes contain a legal Java variable name? If the box does not contain a legal variable name, explain why?

FifthElement legal	Element5 legal
5thElement illegal, can't start with digit	fifth@Element illegal, @ not allowed

Question 2 (9 points)

Which of the following boxes contain a legal Java constant? The constant could be an integer, float, double, character, or string. If the box does not contain a legal constant, explain why?

201 legal integer	" 201 " illegal string
' 201 ' illegal, only one character allowed with ''	201.001 legal float
201.0L7 illegal integer, no L allowed in decimal number	201.0E7 legal integer

Question 3 (12 points)

Which of the following boxes contain a legal Java expression? The expression could yield an integer, float, double, character, or string value. If the box does not contain a legal expression, explain why?

201 ## 107 illegal, no ## operator	201+(107/15) legal
201+(107*333 + 190 illegal, unbalanced parentheses	2220 10 + 13 illegal, no operator between two integers
"abc" + 201 legal	"abc" + 201 + "def" legal

Question 4 (20 points)

Suppose Java integer variables R1 and R2 contain measures of resistance. The resistance of these two in series is $R1 + R2$. Write a little Java code (three lines) that prints the following:

Resister 1 is ____ ohms.
Resister 2 is ____ ohms.
The resistance in series is _____ ohms.

Where the first two blanks are replaced with R1 and R2, and the third blank is replaced with $R1+R2$.

```
// Assume the following declarations
int R1, R2 ;

// Put your code here
System.out.println("Resister 1 is " + R1 + " ohms") ;
System.out.println("Resister 2 is " + R2 + " ohms") ;
System.out.println("The resistance in series is "
                  + (R1+R2) + " ohms") ;
```

Question 5 (20 points)

Suppose that there is a String variable fromField and that somewhere within that fromField there is an email address between two angle brackets. You want to extract that email address. For example if fromField is

From: John Doe <jdoe@bulldog.unca.edu>

You want to write a little piece of code to find the

jdoe@bulldog.unca.edu

Write three lines of Java code to find this email address within fromField and assign it to a variable called emailAddr. You should use the String methods indexOf and substring, documented below, in your solution

```
public int indexOf(int ch)
    Returns the index within this string of the first occurrence of the specified character.

public String substring(int beginIndex,
                       int endIndex)
    Returns a new string that is a substring of this string. The substring begins at the specified
    beginIndex and extends to the character at index endIndex - 1. Thus the length of the
    substring is endIndex-beginIndex.

// Assume fromField is given a value in the next statement.
String fromField = ..... ;

// You write your three (or fewer) lines of Java code right here
int beginPos = fromField.indexOf('<') ;
int endPos = fromField.indexOf('>') ;
String emailAddr =
    fromField.substring(beginPos+1, endPos) ;
```

Question 6 (20 points)

What is the value of the following Java expressions?

$17.0 / 5$ 3.4	$17 \% 5$ 2
$3 * 4 + 5$ $(3 * 4) + 5$ 17	$3 + 4.0 * 5$ $3 + (4.0 * 5)$ 23.0
$7 * 4 / 10 * 2.0$ $((7 * 4) / 10) * 2.0$ $(28 / 10) * 2.0$ $2 * 2.0$ 4.0	$(7 * 4) / (10 * 2)$ $28 / 20$ 1
$7 * (4 / 10) * 2$ $7 * 0 * 2$ 0	$7 * (4 / 10) * 2.0$ $7 * 0 * 2.0$ 0.0

Question 7 (15 points)

The following section of Java code is supposed to be a main method in Java. However, there are a few errors. Point out the errors and describe how they should be fixed. By the way, **there is nothing wrong** with the two statements that contain the variable stdin.

```
public int static void main (String[] args) main
    final double PI = 3.14159 ;
    Scanner stdin = new Scanner(System.in) ;
    System.out.println("\nEnter height (inches) ") ;
    double height = stdin.nextDouble() ;
    double CircleArea = height*height*PI/4 ;
    System.out.print("Area as circle is " + CircleArea) ;
    double RectArea = height* height i
    SYSTEM System.println(
        "\nArea as rectangle is " + RectArea) ;
}
```