

Unit 09_010 – .readLine() Revisited (Part 1)

Video Length 8:57

1. What does the .trim() method do?
2. The following snippet of code counts the number of lines in a file. There are two blanks. Fill in the blanks in the code.

```
int count = \rule{20mm}{0.15mm};
while(input.hasNextLine()){
    String line = input.nextLine();
    \rule{20mm}{0.15mm}
}
```

Unit 09_010 – .readLine() Revisited (Part 2)

Video Length : 25:31

3. The term "regex" is short for _____
4. What is the problem with using a comma as a field separator?
5. What does the String[] indicate?
6. What does the split() method return?
7. Assume there is an array of Strings called "tokens." It was generated by the following statement. Write a for loop that prints each of the tokens in the array.

```
String[] tokens = line.split(",");
```
8. True or False: Split always returns one item in the array, even if the line is empty.
9. Explain how to determine if a line is empty.
10. What data type does the .split() method return?

Unit 09_020 – Wrapper Classes

Video Length 12:16

11. What is a Wrapper Class?

12. Where are the two purposes that Wrapper Classes serve?

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13. Write the Wrapper type for each of the following primitive types

- boolean
- char
- byte
- short
- int
- long
- float
- double

14. What does "deprecated" mean when it appears in the Java API?

15. In Java 17, can you instantiate objects of Wrapper classes using the new operator? Should you? Explain your answer.

16. Look at the following two lines of code. The video demonstrated that the first line did not work because we needed to make 7 into a double literal as 7.0. Fire up Idea. Does the declaration of the Long work? Fix the literal so that it does work.

```
Double x = 7; //An error because 7 is an integer literal, not a double literal
Long big = 1234 ; //what does it take to make this work?
```

Unit 09_030 – Integer Wrapper

Video Length 14:53

17. What is the constant that represents the largest int value in Java? Write the command to print the largest Integer value.
18. What is the constant that represents the smallest int value in Java? Write the command to print the smallest Integer value.
19. What is the method that Java uses to find the maximum of two integer values? Write the command to print the larger of a and b if a and b are ints.
20. Write a Java statement to print "+123" as an integer value.
21. What does Java do if you call Integer.parseInt("Two")? Note that Two is not a valid integer.

Unit 09_040 – Double Wrapper

Video Length 29:38

22. What is the constant that represents the largest double value in Java? Write the command to print the largest double value.
23. If a number is represented in scientific notation, what constant represents the largest exponent allowed in Java.
24. How does Java represent the concept of infinity? How does it represent ∞ ?

25. Can the values for POSITIVE_INFINITY, NEGATIVE_INFINITY and NaN be stored in regular variables in Java?
26. What value would be stored in x if the following Java statement was executed?

```
x = 5.0 / 0.0;
```

27. Write the code needed to parse a String containing a real number. Return Double.NaN if the String cannot be parsed into a double.

Unit 09_045 – Pseudo Wrapper Classes

No video, except for a possible upload of an in-class discussion of this topic

There is a very brief video on this, but it is optional. We will cover this in class on Monday as a special topic. It is actually an important topic in Cyber Security.

And for the person who has been asking about prime numbers, the BigDecimal class does have some special methods related to prime numbers.

Unit 09_050 – Declaring Arrays

Video Length 4:55

28. Write the code to create an array that will hold 10 values of type int. Assume there is a constant declared called MAXIMUM_VALUES and it is set to 10.
29. TRUE FALSE In an array, all of the elements must be of the same type.
30. How can a program determine the number of cells in an array? Why is there no () at the end when working with arrays?

31. Are arrays initialized to contain initial values? What is the default value for the following types of arrays? In some cases I did not demonstrate. If you need too, write some code to figure out the answer.

- doubles
- int
- objects like Strings and Localdates
- boolean
-
- char

Unit 09_060 – Using Arrays

Video Length 4:10

32. What is the difference between the logical size of an array and the physical size of the array?
33. What is a "compact" array?
34. What variable name is commonly understood to represent the logical size of an array?

Unit 09_070 – Call by Value

Video Length :

35. What is the main difference between "Call by value" and "Call by reference?"
36. Does Java use call by value or call by address?
37. When passing primitives, what happens in the calling routine if the value of one of primitive arguments gets changed while the method is operating?

38. Java always uses call by value. What is stored as the "value" of an array? (Is it the contents of the array that get stored, or is it the address where the array is stored?)
39. How does Java simulate Call by reference when passing arrays and objects?

Unit 09_080 – Common Task: Print an Array

Video Length 9:03

40. Write a complete method that prints an array of longs.

Unit 09_090 – Common Task: Read from File into Array

Video Length 13:49

41. Write a complete method that reads an array of longs

Unit 09_100 – Common Task: Sum an Array and Find the Average

Video Length 12:46

42. Write a complete method that sums an array of longs. It should return a long.

43. Write a complete method that calculates the average of an array of longs. It should return a double for the average. You may call the sum method from the last question. Be careful about integer division.

Unit 09_110 – Read a file a line at a time

Video Length : NOTE: This will not be in the notes. It will be preparation for the assignment this week.

Please write any lingering questions you have here.