**Unit 1: Primitive Types**

**Topic 1: println vs. print**

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| **Name:** |  |

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| **Review slides 23-27 for a summary of today’s demo,** then **X** here when done! → |  |

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| **1. Make a mental prediction about how the output of the two code segments below will be different.** Then, run each of the two code segments by copying/pasting each into the main method's body. Study the output to find out if and how System.out.println and System.out.print are different!  **Code segment 1 Code segment 2**   |  |  | | --- | --- | | System.out.println("Look");  System.out.println("at me!");  System.out.println("Hi!"); | System.out.print("Look");  System.out.print("at me!");  System.out.print("Hi!"); | | | |
| In your own words, how are System.out.println and System.out.print different? |  | |
| **2.** Consider this code segment:  System.out.print("Look");  System.out.println("at me!");  System.out.println("Hi!");  Which displays:  **Lookat me!**  **Hi!**  Determine ***three*** different ways you could change the code so that it instead displays  **Look at me!**  **Hi!**  (Kaufman can think of four!)  Be sure to **test** each of your strategies by copying/pasting into the main method.  ***Copy/paste the updated code segment for each of your solutions:*** | | |
| **Solution 1:** |  | |
| **Solution 2:** |  | |
| **Solution 3:** | 2[*Need a hint?*](#_x2u6pcntlmrw) | |
| ***Challenge!* Can you find a fourth possible solution?**  (try before peeking) | 2 [*some possible solutions*](#_gmcfurvqiqg1) | |
| Did you find a fourth solution *without* peeking at the solutions? 😎 |  | |
| **3.** Consider this code segment:  System.out.print(Look );  System.out.println(at me!);  System.out.println(Hi!); | | |
| **Predict (using just your eyes and your brains)!**  Do you think this code will ***compile***? In other words, there would be **no red squiggly lines** if you typed it into Replit. If you *don't* think it would compile, why not?  If you think it *will* compile, what will it display when it is executed? | | **Write your prediction here:** |
| **4.** Now test your prediction by running the code segment. | | |
| Was your prediction correct?  If not, *why* not, and what did you learn? | |  |
| **5.** Consider this code segment:  System.out.println("AP CSA"); // Line 1  System.out.println("String literal"); // Line 2  System.out.println("A4687BC$"); // Line 3  System.out.println("\* \* BOOM! \* \*"); // Line 4  System.out.println("1 + 2"); // Line 5  System.out.println("System.out.println"); // Line 6  System.out.println("baad speling"); // Line 7 | | |
| **Predict (using just your eyes and your brains)!**  Do you think this code will compile? If *not*, on which lines(s) are there **syntax/compiler errors** that prevent it from compiling?  If it *will* compile, what will it display when it is executed? | | **Write your prediction here:** |
| **6.** Now copy/paste the code into Replit -- ***don't*** click the run button yet. | | |
| After you've pasted the code, how can you tell that that code *does* compile (i.e. there are no syntax errors)? | |  |
| **7.** Lastly, test your prediction from above by running the program. See if it matches your prediction! | | |
| Any surprises?  What can you conclude about printing anything as a string literal (i.e. between two quote marks: " ")? | |  |

###### [check answers](#_i6zfsvrcwpe8)

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| **7. Review slides 28 through 35 for a summary**  **on comments and print vs. println,** then **X** here when done → |  |

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| **8.** So you just saw that this line of code: System.out.println("1 + 2");  prints: 1 + 2  *rather* than printing: 3  **Try executing the line of code** ***without*** using quotes: System.out.println(1 + 2);  *Removing the quotes changes 1 + 2 from a* ***string literal*** *(“1 + 2”) into the* ***mathematical expression*** *(1 + 2) which gets simplified* ***before*** *being printed!* | |
| What does this tell you about what the System.out.println() and System.out.print() methods can accept as an **argument** (input to the method)? | [check](#_x5fw28bytsp3) |

**Lab Continues on the Next Page**

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| **9.** Here is a program that prints out information about Mr. Miller’s cats! Pay careful attention to the statements with empty **()**.  /\* This program prints out info about  Kaufman’s dogs! \*/  public class Main  {  public static void main(String[] args)  {  // this code displays the info to the screen  System.out.println("I have 2 dogs.");  System.out.println();  System.out.println("Their names are:");  System.out.print("Holly");  System.out.println();  System.out.print("and");  System.out.println();  System.out.println("Juniper");  }  } | |
| **Predict (using just your eyes and your brains)!**  What will this code segment display when it is run/executed? Type your prediction *exactly* as you think it would appear. | **Write your prediction here:** |
| **10.** Now **test your prediction** by copying/pasting this program into your Main.java file in Replit. | |
| Was your prediction correct?  If not, why not, and what did you learn? |  |

**Lab Continues on the Next Page**

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| **11.** **Rewrite** the following code as a series of System.out.println statements **only** *without* *using any* System.out.print statements:  System.out.print("If you will be 18");  System.out.print(" ");  System.out.print("by November 8,");  System.out.println();  System.out.print("Don’t ");  System.out.print("forget");  System.out.print(" to register to vote!");  System.out.println();  System.out.println();  System.out.println("THEN VOTE!");  **TEST your code by copying/pasting into Replit and running it!** 11 [*Need a hint?*](#_8x4i8rc7vaui) | |
| Copy/paste your *rewritten* code here (using println statements only): | 11 [*sample solution*](#_7ft1ibcaa31e) |

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| Did you figure out a solution on your own *without* first peeking at the sample solution? 😎 |  |

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| **11. Review slide 36 for a summary of today’s class,** then **X** here when done! → |  |

**REFLECTION**

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| **1.** What did you learn about Java syntax rules and compiler errors?  **2.** What did you learn about the difference between println and print?  **Write a reflection below using technical vocabulary from today's lab and slides:** |
|  |

**Done!**

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# **HINTS**

### Question 2 Hints ([jump back](#_46y5e88ileka)):

* You can use more or fewer than three total statements!
* Three of the solutions involve adding a space, for example (“Look “) instead of (“Look”), or creatively using (“ “).
* The fourth solution involves using fewer than three total statements.

### Question 11 Hint ([jump back](#_wdgyvlvajr2y)):

* You can do this with **four** total System.out.println statements.

# 

# **SOLUTIONS**

### Question 2 Solutions ([jump back](#_j9esz5c1ytm0)):

These are four possible solutions, but you certainly may have found others!

* Possible solution 1:

System.out.print("Look ");

System.out.println("at me!");

System.out.println("Hi!");

* Possible solution 2:

System.out.print("Look");

System.out.println(" at me!");

System.out.println("Hi!");

* Possible solution 3:

System.out.println("Look at me!");

System.out.println("Hi!");

* Another possible solution!

System.out.print("Look");

System.out.print(" ");

System.out.println("at me!");

System.out.println("Hi!");

### Question 11 Solution ([jump back](#_qog3x83admeo)):

The code as written outputs the following:



One way to rewrite the code using *only* println statements is this:

System.out.println("If you will be 18 by November 8,");

System.out.println("Don’t forget to register to vote!");

System.out.println();

System.out.println("THEN VOTE!");

### Sample answer ([back](#_kzaqwl4zmtxi))

*Your answer does not have to be exactly this (nor should it be!), but the sample answer below captures the basic idea.*

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| What does this tell you about what the System.out.println() and System.out.print() methods can accept as an **argument** (input to the method)? |  |

### Sample answers ([back](#_5ewxknnhp9wy))

*Your answers do not have to be exactly this (nor should the be!), but the sample answers below capture the basic ideas of each question*

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| **Predict (using just your eyes and your brains)!**  Do you think this code will compile? If *not*, on which lines(s) are there **syntax/compiler errors** that prevent it from compiling?  If it *will* compile, what will it display when it is executed? | There are **no** syntax/compiler errors -- all lines of code are properly written and valid! Therefore, it **will** compile.  **Here is what gets displayed when executed:**  AP CSA  String literal  A4687BC$  \* \* BOOM! \* \*  1 + 2  System.out.println  baad speling |
| **6.** Now copy/paste the code into Replit -- ***don't*** click the run button yet. | |
| After you've pasted the code, how can you tell that that code *does* compile (i.e. there are no syntax errors)? | There are **no red squigglies** after you paste it! This means the code has successfully auto-compiled (without syntax errors) and is ready to execute -- see image below: |
| **No** red squigglies means the code **has** successfully **auto-compiled!** | |
| **7.** Lastly, test your prediction from above by running the program. See if it matches your prediction! | |
| Any surprises?  What can you conclude about printing anything as a string literal (i.e. between two quote marks: " ")? | **Conclusion:**  You can print *anything* between double quotes and it will print out *exactly* as typed! This includes symbols, math expressions, and bad spelling! |

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