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ICS 2O3

September 11th, 2014

Set 1

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1. Write down the name of the class used:
   * Greeting
2. What is a class in Java?
   * A class is a template that describes the data and how instances of that class behave. The main class or main method in Java acts as an entry point to the entire program.
3. Write down one comment from the above code:
   * // The “Greeting” class
4. How are comments identified in Java?
   * Single line comments can be identified by the double slash “//”, and multi-line comments can be identified by the “/\*” opening and “\*/” closing.
5. What is the point of including comments in a program?
   * It makes it easier for readers/ editors to understand the code
   * Makes it easier to go back on code and make changes
   * You can comment out sections of code that you don’t want to run.
6. What are curly brackets for?
   * They are used to indicate the beginning and end of a block of code. For example, if/ else statements, loops, classes, etc.
7. Why is there a semi colon at the end at the end of each statement?
   * There is a semi colon at the end of each statement to tell Java that the statement is complete.
8. What is the name of the object used in the above program?
   * A string.
9. What does the *println* method do?
   * It displays text on the console, then inserts a new line afterwards.
10. Explain the dot notation used in **c.println.**
    * The dot links the object to the method, so that the method is displayed in the correct output window (the console).
11. What does it mean to say that Java is case sensitive?
    * This means that it matters when you use upper case and lower case. For example, all primitive types are in lower case, all classes start with upper case, and etc.
12. The name of a class in Java should always start with a capital letter. TRUE
13. Write down the output that will appear on the output screen when the above program is run.
    * Hello there!  
      It is good to see you.
14. Are the quote marks displayed on the output screen? NO
15. Your friend typed the following statements in a Java program, and got 2 error messages when the program was Run.page  
      
    c.println(“Life is wonderful”);  
    c.println(“Isn’t it?”);  
      
    Circle and correct the 2 errors in the above code (corrections highlighted in yellow).
    * He forgot the closing quotation mark in the first line.
    * He forgot the semi colon after the second line.

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* + - 1. When you run the program, you should get output on the Console window. Copy the output and write here exactly as it appears, into the blocks below.

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* + - 1. Make the following changes one at a time:
         1. c.print(“Hello”);  
            c.print(“How are you”);  
              
            HelloHow are you
         2. c.println(“Hello”);  
            c.print(“How are you”);  
              
            Hello  
            How are you
      2. Change the code so that all 3 lines use println:
         1. 12345678901234567890  
            Hello  
            How are you
      3. Change the code so that all 3 lines use print.
         1. 12345678901234567890HelloHow are you
      4. Add spaces inside the quote marks so the output is readable.
         1. 12345678901234567890 Hello How are you
      5. Do you understand the difference between the **print** and the **println** methods? YES
      6. If the statement c.println(“XXXXXXXXXXX”); was added straight after the statement c.print(“How are you”); would the Xs be displayed on the same line or on the next line?
         1. It would be displayed on the same line, because the print method does not create a new line after the string.
      7. What is the difference between the **print** and the **println** methods?
         1. Print outputs the text to the console, and does not add a new line afterwards. This means the next output will be on the same line. But the println method outputs the text to the console, then adds a new line, so the next output will be on a new line below the previous output.

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1. What is the purpose of the println(); statement?
   * 1. It created a blank line.
2. Change the last statement so that it uses println instead of print.  
     
   Does this make any difference to the output? NO  
     
   Does this make any difference to the final position of the cursor? YES

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1. What is meant by each of the following terms that have been used in various places in these notes? Write a clear explanation for each term on a piece of paper, and give an example to illustrate each explanation.
   1. Java Code: Code that is written in the object oriented program language Java.
   2. Program: An application with coded instructions for the automatic performance of a task.
   3. Class: A template that describes the data and how instances of that class behave.
   4. Statement: The smallest standalone element of an imperative programming language.
   5. Method: A subroutine associated with an object of a class. It does stuff with members outside the class, and allows outside access to its own private class.
   6. Output: What the program displays to the user.
   7. Save: Storing your written code on your hard drive/ SSD as a .java file.
   8. Run: Compiling then executing written code.
   9. Tab: 8 spaces.
2. Write down the name of 2 Java methods that you have used in your programs so far:
   1. print();
   2. println();
3. Explain clearly the difference between using c.print and c.println to display output on the Console Window.
   1. c.print displays output on the console window, with no additional actions. This ensures that the next output on the console window goes right beside the first output.  
      c.println displays output on the console window, and then inserts a new line. This ensures that the next output on the console window goes on the new line.
4. What does the + operator do when used with 2 output messages in one statement?
   1. It displays the two strings together.
5. Many c.print statements can be replaced with one c.println statement. FALSE
6. Explain what effect “\t” and “\n” have when included in output statements.
   1. “\t” creates a tab, which is 8 spaces.  
      “\n” creates a new line.
7. Write down (in Java Code) 2 ways to display a blank line on the output screen.
   1. println();
   2. print(\n);
8. Instead of displaying the word “Hello” at the left margin, how can it be displayed so that it appears near the middle of the top row of the output screen, when it is included in a c.print statement in a Java program? Give two different ways of doing this.
   1. You can use “\t” and spaces to move the text until it is centered.
   2. You can take the fieldwidth, subtract the length of the text and divide it by 2, and add that many spaces to the beginning of the string.

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1. Answer the following questions about this output:
   1. In what column is the C of COMPUTER STUDIES?
      1. Column 6.
   2. Explain this:
      1. This is because print(“”, 5); inserts 5 spaces, and the next print was outputted right next to this one (since no new line was created)
   3. What is the purpose of displaying 12345678901234567890?
      1. The purpose is so that we can see clearly in which row the letters call under, and don’t have to manually count the spaces.
   4. Why can’t we display 123567891011121314151617181920?
      1. This is because two digit numbers take up 2 columns, and so the numbering would be inaccurate past 9.
   5. Why is the word Theory displayed 2 lines after COMPUTER STUDIES?
      1. This is because println(“COMPUTER STUDIES”); adds a new line, then println(); adds another line, making for a total of 2 lines before Theory.
   6. In what column is the T of Theory.
      1. Column 6
   7. Explain this.
      1. This is because print(“”, 5); inserts 5 spaces, and the next print was outputted right next to this one (since no new line was created).
   8. In what column is the P of Practical?
      1. Column 21
   9. Explain this carefully, making sure you understand this.
      1. This is because first, there was a print(“”, 5); which inserted 5 spaces. Next, there was a print(“Theory”, 15); which inserts 15 spaces. Since Practical was added right after this, 15+5 = 20, and therefore it would go on the 21st column.
   10. What is the difference between using “\t” and using a field width to position output?
       1. Using “\t” will insert 8 spaces, and if it precedes text it will move the text. Using fieldwidth creates space for an input, and so even if you give the word “Hi” 20 fieldwidth spaces, it will still be all the way on the left. But if you insert a new output beside the previous one, it will be on the 21st column, since “Hi” is taking up 20 spaces.