121 Discussion #3 – Feb 18 – Looping & Conditionals

Announcements: Program 4 up. Because of missed lecture, be sure to watch Lec 8 and 9 (link in book, at course website). Exam 7pm 2/26

Lecture Summary: Ch 4, most attention to for loops, conditionals. Math class, random(), static methods introduced in text. Ch 5: methods

1. Today is Tuesday, February 18, 2014. The fact that 365%7 = 1 and that 2014 is not a leap year means that February 18 will fall on what day of the week in 2015?

2. This loop does what? On average, about how many print statements are executed? What’s the loop control variable? What’s the block here?
   
   ```java
   for(int j = 0; j < 20; j++){
       double r = Math.random();
       if ((r < .2) || (r > .8)) System.out.println(r);
   }
   ```

3. This loop does what?
   
   ```java
   int sum = 0;
   for(int j = 70; j < 77; j = j + 2){
       sum = sum + j; // or: sum += j;
   }
   System.out.println(sum);
   ```

4. What is the value of ch after the two lines of code below execute?
   
   ```java
   int n = (int)'a' + (int)'b' + (int)'c';
   char ch = (char)(n/3);
   ```

5. If s is a String, write a loop that prints the characters in s in a column. Now change it so that it prints only the lower case letters in a column, taking no action with other chars. (see hint in #7)

6. Write a complete program that reads in a whole line of text, and then reports the number of lower case letters in the entered line. (use this test in an if statement: (‘a’ <= ch) && (ch <= ‘z’)

8. Write a complete program that reads in a String, say s, and then an int, say k. If s has a character at position k your program should print that character; otherwise your program should print “no char”. Thus if s is “monkey”, k is 5, print y; but if k is 50 print “no char”.

9. Four Methods. (a) Add a method to the Infant class called fraction, which returns the calling Infant object’s age as a decimal fraction of a year (so: for an 18 month old kid, your method should return 1.5). (b) Now write a method called printFraction, which merely writes on the screen a calling Infant object’s age as a decimal fraction of a year. (c) Write a new Infant method called firstChar, which returns the first character in the calling Infant’s name. (d) Write an Infant method called crazy, which returns true if the calling Infant’s age is strictly larger than the length of that Infant’s name. Otherwise the method should return false. So:
   
   ```java
   Infant i = new Infant("Mike", 5);
   System.out.println(i.crazy()); // prints true
   ```