



LEBANESE AMERICAN UNIVERSITY
Electrical and Computer Engineering Dept

COE 593
COE Application

Fall 2017
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Quiz I

Formatting questions

What output is produced by each of the following statements?

- a. `String s1 = "hello there"; char[] array = new char[5];
s1.getChars(0, 5, array, 0);
for(char character : array) System.out.printf("%c", character);`

hello

- b. `System.out.printf("%6.3s%n", "Hello");`

Hel

- c. `System.out.printf("%.2f%n", 12345678.9);`

12,345,678.90

- d. `StringBuilder sb = new StringBuilder();
Formatter formatter = new Formatter(sb);
formatter.format("%1$#X = %1$#x", 30);
System.out.print(sb);`

0X1E = 0x1e

- e. `System.out.printf("%g%n", 12345678.9);`

1.23457e+07

Bitwise operators question

Design and implement a Java program that reads from the user an int value and then makes use of bitwise operators to produce an output message indicating whether or not the input value is a power of 2.

Specifically, your program must employ **three different strategies** that utilize bitwise operators to verify whether or not the input value is a power of 2.

```
public class BitwiseOperators {
    Scanner scan = new Scanner(System.in);
    int a;
    System.out.println("Enter an int:");
    a = scan.nextInt();

    if((a & (a-1)) == 0)
        System.out.println(a + " is a power of two");
    else
        System.out.println(a + " is not a power of two");

    if((a & (~a+1)) == a)
        System.out.println(a + " is a power of two");
    else
        System.out.println(a + " is not a power of two");

    int c = a;
    while(((c & 1) == 0) && c > 1)
        c >>= 1;
    if(c == 1)
        System.out.println(a + " is a power of two");
    else
        System.out.println(a + " is not a power of two");

    c = a;
    int onesCount = 0;

    while(c > 0 && onesCount <=1) {
        if((c & 1) == 1)
            onesCount++;
        c >>= 1;
    }

    if(onesCount == 1)
        System.out.println(a + " is a power of two");
    else
        System.out.println(a + " is not a power of two");
}
}
```