

Hybrid 1 - printf()

Recommended due date: September 28th
(two weeks)

Introduction

Back in the days, sending characters to the standard output in Java was commonly done with `System.out.println()` and `System.out.print()`. The **ln** at the end of `println` is an abbreviation for line. `System.out.print()` does not change line after it is called, but `System.out.println()` does.

```
// The following two print statements are equivalent.  
System.out.println("Hi there"); // the new line at the end is implicit  
System.out.print("Hi there\n"); // the new line at the end is explicit (\n)
```

In Java 1.5, `printf()` was added to the Standard Java Library. Our textbook uses `printf()` often, which is why you might be interested to learn how it works. It is especially useful for controlling the format of floating point numbers. It does not use String concatenation, but a format String instead, plus a list of arguments. In our lectures and labs, we will focus on learning Java the language. Learning the basics of `printf()` is left as a hybrid exercise.

Note: `printf()` will not be part of any exams.

Note: Another method called `format()` was also added in Java 1.5 and behaves the exact same way as `printf()`. They are alias of each other.

Tutorial

<http://www.javawithus.com/tutorial/displaying-text-using-printf-method>.

Extra Examples

```
// Each pair of println and printf statements in the following examples are equivalent.  
String name = "Freya";  
int age = 2;
```

```
System.out.println(name);  
System.out.printf("%s\n", name);
```

```
System.out.println("My name is " + name);  
System.out.printf("My name is %s\n", name);
```

```
System.out.println(age);  
System.out.printf("%d\n", age);  
System.out.println("My age is " + age);  
System.out.printf("My age is %d\n", age);
```

```
System.out.println("My daughter's name is " + name + ". She is " + age + ".");  
System.out.printf("My daughter's name is %. She is %d.\n", name, age);
```

```
// The following prints only 4 digits after the decimal point.  
System.out.format("PI: %.4f (only 4 digits after the decimal)\n", 3.14159265359);
```

Hybrid Exercise

The `Hybrid1.java` program can be found on Blackboard in the Hybrids section. Rewrite the program using `printf()` exclusively instead of `println()`.

What to submit

- Submit your .java file using Blackboard.
- Your program must compile.
- Your program must make use of the variables when printing, just like the original did.