

Java `printf()` Method overview

`System.out.printf("String and format-string " [, arg1, arg2, ...]);`

Format String:

Format String composed of literals and format specifiers. Arguments are required only if there are format specifiers in the format string respectively. Format specifiers can include: flags, width, precision, and conversion characters in the following sequence:

% {flags} {width} {.precision} conversion-character (**Braces** denote optional parameters)

Flags:

- : left-justify (default is to right-justify)
- + : output a plus (+) or minus (-) sign for a numerical value
- 0 : forces numerical values to be zero-padded (default is blank padding)
- , : comma grouping separator (for numbers > 1000)
- : space will display a minus sign if the number is negative or a space if it is positive

Width:

Specifies the field width for outputting the argument and represents the minimum number of characters to be written to the output. Include space for expected commas and a decimal point in the determination of the width for numerical values.

Precision:

Used to restrict the output depending on the conversion. It specifies the number of digits of precision when outputting floating-point values or the length of a substring to extract from a String. Numbers are rounded to the specified precision.

Conversion-Characters:

- d : decimal integer [byte, short, int, long]
- f : floating-point number [float, double]
- c : character Capital C will uppercase the letter
- s : String Capital S will uppercase all the letters in the string
- h : hashcode A hashcode is like an address. This is useful for printing a reference
- n : newline Platform specific newline character- use %n instead of \n for greater compatibility

Examples:

```
System.out.printf("Total is: $%,.2f%n", dblTotal);
System.out.printf("Total: %-10.2f: ", dblTotal);
System.out.printf("% 4d", intValue);
System.out.printf("%20.10s\n", stringVal);

String s = "Hello world";
System.out.printf("The String object %s is at hash code %h%n", s, s);
```

String class `format()` method:

You can build a formatted String and assign it to a variable using the static format method in the String class. The use of a format string and argument list is identical to its use in the printf method. The format method returns a reference to a String. Example:

```
String grandTotal = String.format("Grand Total: %,.2f", dblTotal);
```