



Here’s a detailed description of these items, which must appear in the order shown:

- **Flags** (optional; more than one permitted). The `-` flag causes left justification within a field; the other flags affect the way numbers are displayed. Table 22.4 gives a complete list of flags.

Table 22.4  
Flags for `...printf`  
Functions

Flag	Meaning
-	Left-justify within field. (The default is right justification.)
+	Numbers produced by signed conversions always begin with <code>+</code> or <code>-</code> . (Normally, only negative numbers are preceded by a sign.)
<i>space</i>	Nonnegative numbers produced by signed conversions are preceded by a space. (The <code>+</code> flag overrides the <i>space</i> flag.)
#	Octal numbers begin with <code>0</code> , nonzero hexadecimal numbers with <code>0x</code> or <code>0X</code> . Floating-point numbers always have a decimal point. Trailing zeros aren’t removed from numbers printed with the <code>g</code> or <code>G</code> conversions.
0 (zero)	Numbers are padded with leading zeros up to the field width. The <code>0</code> flag is ignored if the conversion is <code>d</code> , <code>i</code> , <code>o</code> , <code>u</code> , <code>x</code> , or <code>X</code> and a precision is specified. (The <code>-</code> flag overrides the <code>0</code> flag.)

- **Minimum field width** (optional). An item that’s too small to occupy this number of characters will be padded. (By default, spaces are added to the left of the item, thus right-justifying it within the field.) An item that’s too large for the field width will still be displayed in its entirety. The field width is either an integer or the character `*`. If `*` is present, the field width is obtained from the next argument. If this argument is negative, it’s treated as a positive number preceded by a `-` flag.
- **Precision** (optional). The meaning of the precision depends on the conversion:
  - `d`, `i`, `o`, `u`, `x`, `X`: minimum number of digits  
(leading zeros are added if the number has fewer digits)
  - `a`, `A`, `e`, `E`, `f`, `F`: number of digits after the decimal point
  - `g`, `G`: number of significant digits
  - `s`: maximum number of bytes

The precision is a period ( `.` ) followed by an integer or the character `*`. If `*` is present, the precision is obtained from the next argument. (If this argument is negative, the effect is the same as not specifying a precision.) If only the period is present, the precision is zero.