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▷ **OUTPUT**

- simpler than input as it never fails

Formatted output:

printf fprintf sprintf

only to stdout — prints to a stream — prints to a string

fprintf and sprintf work the same as print f

* EXCEPT THEY TAKE AN EXTRA ARG (FIRST) THAT SPECIFIES WHICH STREAM OR STRING TO PRINT TO *

ex. int m = 1, n = 2;

conversion specifications

printf ("The sum of %d and %d is %d\n", m, n, m+n);

format string

output : The sum of 1 and 2 is 3

- The most general conversion specification can have 5 components after the %

flag modifer

% ∅ 9 . 2 L f

minimum field width precision conversion specifier [MANDATORY]

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▷ **COMMON SPECIFIERS**

d : for printing : an int w/ base 10
x : : unsigned int in base 16 (a – f)
X : : (A – F)
o : : base 8
u : : base 10
NOT COMMON — lu : : unsigned long w/ base 10
f : : floating point numbers (both float + double)
c : : character (char)
s : : string

To print a long or unsigned long, use :
modifier — ld : for long
lu : for unsigned long

example : long double x = 12.345;
printf ("%ø9.2Lf", x);

minimum width = 9
precision (decimal) = 2
flag : ø (pad w/ ø)

long double

result – øøøø12.35

int n = 12;
printf ("%5d", n);
printf ("%-5d", n);

flag

printf ("%1d", n);

minimum field width

␣␣␣12 right adjust
12␣␣␣ left adjust

12

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fprintf: takes a stream as its first argument, rest is the same as printf.

→ fprintf (stderr, "%ø9.2Lf", x);

sprintf: takes a string as its first arg; rest is the same

→ char s [øø];
int n = 12;
sprintf (s, "%d", n); /* s = string "12" */

[The caller is responsible for ensuring a large enough string.]

▷ <u>Some primitive type in C</u>

- char / signed char / unsigned char
  ↳ it is unspecified if <u>char</u> is unsigned or signed

Assume 8-bit char:

unsigned char : ø - 255
signed char : -128 - 127

- short / unsigned short
  ↳ short is <u>already signed</u>

- int / unsigned int (or just: unsigned)
  ↳ <u>already</u> signed

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▷ MORE PRIMITIVE TYPES IN C

- long (or long int) / unsigned long (or unsigned long int)

- float
- double
- long double

suffix

			1UL :
1 : int	1l : long	1u : unsigned	1uL : unsigned long
	1L :	1U :	1lu :

12.3 : double	12.3f : float	12.3L : long double
	12.3F	12.3l : long double