

NAME

printf – formatted print

SYNOPSIS

```
printf(format, arg1, ...);
char *format;
```

DESCRIPTION

Printf converts, formats, and prints its arguments after the first under control of the first argument. The first argument is a character string which contains two types of objects: plain characters, which are simply copied to the output stream, and conversion specifications, each of which causes conversion and printing of the next successive argument to *printf*.

Each conversion specification is introduced by the character **%**. Following the **%**, there may be

- an optional minus sign “-” which specifies *left adjustment* of the converted argument in the indicated field;
- an optional digit string specifying a *field width*; if the converted argument has fewer characters than the field width it will be blank-padded on the left (or right, if the left-adjustment indicator has been given) to make up the field width;
- an optional period “.” which serves to separate the field width from the next digit string;
- an optional digit string (*precision*) which specifies the number of digits to appear after the decimal point, for e- and f-conversion, or the maximum number of characters to be printed from a string;
- a character which indicates the type of conversion to be applied.

The conversion characters and their meanings are

- d
- o
- x The integer argument is converted to decimal, octal, or hexadecimal notation respectively.
- f The argument is converted to decimal notation in the style “[–]ddd.ddd” where the number of d’s after the decimal point is equal to the precision specification for the argument. If the precision is missing, 6 digits are given; if the precision is explicitly 0, no digits and no decimal point are printed. The argument should be *float* or *double*.
- e The argument is converted in the style “[–]d.ddde±dd” where there is one digit before the decimal point and the number after is equal to the precision specification for the argument; when the precision is missing, 6 digits are produced. The argument should be a *float* or *double* quantity.
- c The argument character or character-pair is printed if non-null.
- s The argument is taken to be a string (character pointer) and characters from the string are printed until a null character or until the number of characters indicated by the precision specification is reached; however if the precision is 0 or missing all characters up to a null are printed.
- l The argument is taken to be an unsigned integer which is converted to decimal and printed (the result will be in the range 0 to 65535).

If no recognizable character appears after the **%**, that character is printed; thus **%** may be printed by use of the string **%%**. In no case does a non-existent or small field width cause truncation of a field; padding takes place only if the specified field width exceeds the actual width. Characters generated by *printf* are printed by calling *putchar*.

SEE ALSO

putchar (III)