

NAME

div, ldiv, lldiv, imaxdiv – compute quotient and remainder of an integer division

LIBRARY

Standard C library (*libc*, *-lc*)

SYNOPSIS

```
#include <stdlib.h>
```

```
div_t div(int numerator, int denominator);
```

```
ldiv_t ldiv(long numerator, long denominator);
```

```
lldiv_t lldiv(long long numerator, long long denominator);
```

```
#include <inttypes.h>
```

```
imaxdiv_t imaxdiv(intmax_t numerator, intmax_t denominator);
```

Feature Test Macro Requirements for glibc (see **feature_test_macros(7)**):

```
lldiv():
```

```
_ISOC99_SOURCE || _POSIX_C_SOURCE >= 200112L
```

DESCRIPTION

The **div()** function computes the value *numerator/denominator* and returns the quotient and remainder in a structure named *div_t* that contains two integer members (in unspecified order) named *quot* and *rem*. The quotient is rounded toward zero. The result satisfies *quot*denominator+rem = numerator*.

The **ldiv()**, **lldiv()**, and **imaxdiv()** functions do the same, dividing numbers of the indicated type and returning the result in a structure of the indicated name, in all cases with fields *quot* and *rem* of the same type as the function arguments.

RETURN VALUE

The *div_t* (etc.) structure.

ATTRIBUTES

For an explanation of the terms used in this section, see **attributes(7)**.

Interface	Attribute	Value
div() , ldiv() , lldiv() , imaxdiv()	Thread safety	MT-Safe

STANDARDS

C11, POSIX.1-2008.

HISTORY

POSIX.1-2001, C89, C99, SVr4, 4.3BSD.

lldiv() and **imaxdiv()** were added in C99.

EXAMPLES

After

```
div_t q = div(-5, 3);
```

the values *q.quot* and *q.rem* are -1 and -2, respectively.

SEE ALSO

abs(3), **remainder(3)**