

NAME

frexp, **frexpf**, **frexpl** - convert floating-point number to fractional and integral components

LIBRARY

Math Library (libm, -lm)

SYNOPSIS

```
#include <math.h>
```

double

```
frexp(double value, int *exp);
```

float

```
frexpf(float value, int *exp);
```

long double

```
frexpl(long double value, int *exp);
```

DESCRIPTION

The **frexp()**, **frexpf()** and **frexpl()** functions break a floating-point number into a normalized fraction and an integral power of 2. They store the integer in the *int* object pointed to by *exp*.

RETURN VALUES

These functions return the value *x*, such that *x* is a *double* with magnitude in the interval $[1/2, 1)$ or zero, and *value* equals *x* times 2 raised to the power **exp*. If *value* is zero, both parts of the result are zero.

SEE ALSO

ldexp(3), math(3), modf(3)

STANDARDS

The **frexp()**, **frexpf()**, and **frexpl()** functions conform to ISO/IEC 9899:1999 ("ISO C99").