## NAME

qiran – Quadruple-precision pseudo-random integer in (x..y)

## SYNOPSIS

Fortran (77, 90, 95, HPF):

**f77** *[ flags ] file(s) . . . -L/usr/local/lib -lgjl*

```
REAL*16 FUNCTION qiran(x,y)
REAL*16          x,          y
```

C (K&R, 89, 99), C++ (98):

**cc** *[ flags ] -I/usr/local/include file(s) . . . -L/usr/local/lib -lgjl*

Use

```
#include <gampsi.h>
```

to get this prototype:

```
fortran_quadruple_precision qiran(const fortran_quadruple_precision * x_,
const fortran_quadruple_precision * y_);
```

NB: The definition of C/C++ data types **fortran_** *xxx*, and the mapping of Fortran external names to C/C++ external names, is handled by the C/C++ header file. That way, the same function or subroutine name can be used in C, C++, and Fortran code, independent of compiler conventions for mangling of external names in these programming languages.

Last code modification: 30-Jun-2000

## DESCRIPTION

Return a pseudo-random integer value, represented in quadruple precision, in the range (**x**. .**y**), excluding endpoint **y**, where **x >= y** (a relation that is NOT checked).

The underlying pseudo-random number generator is dran(), which produces about 58 random bits.

The range of representable integers is 0 . . (2**p - 1), where p is the number of bits in the significand of a quadruple-precision number.

In IEEE 754 quadruple-precision arithmetic, p = 113, corresponding to the range 0 . . 10384593717069655257060992658440192 (about 0 . . 1.04e+34).

## SEE ALSO

**airan**(3), **diran**(3).

## AUTHORS

The algorithms and code are described in detail in the paper

*Algorithm xxx: Quadruple-Precision Gamma(x) and psi(x) Functions for Real Arguments*

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