

NAME

diran – Double-precision pseudo-random integer in (x..y)

SYNOPSIS

Fortran (77, 90, 95, HPF):

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

DOUBLE PRECISION FUNCTION diran(x,y)

DOUBLE PRECISION 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_double_precision diran(const fortran_double_precision * x_,  
const fortran_double_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-Jul-2000

DESCRIPTION

Return a pseudo-random integer value, represented in double precision, in the range (x..y), excluding end-point y, where $x \geq y$ (a relation that is NOT checked).

The range of representable integers is $0 \dots (2^p - 1)$, where p is the number of bits in the significand of a double-precision number.

In IEEE 754 double-precision arithmetic, $p = 53$, corresponding to the range $0 \dots 9007199254740991$.

SEE ALSO

airan(3), **qiran(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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