

Version 2.0: Written by Gregor N. Purdy.
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Random

INHERITS FROM

Object

CLASS DESCRIPTION

The Random class provides services for random number generation. It uses an instance of a subclass of RandomEngine as a source for sequences of random bits (in byte-sized chunks).

This class is part of Version 2.0 of Random, distributed 1992 May 29.

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INSTANCE VARIABLES

Declared in Random

id	engineClass;
ulong	unit;
uchar	bitbuffer;
uchar	*bytebuffer;
uchar	curbit;
ulong	curbyte;
id	engine;

engineClass

The id of the class of our random bit source

unit

How many bytes of random bits we get for each request of engine

bitbuffer

One byte worth of bits for use in random booleans

bytebuffer

A buffer our engine will fill when empty from which we grab bytes

curbit

The current bit in bitbuffer ready to be used

curbyte

The current byte bytebuffer ready to be used

engine

The id of our engine instance

METHOD TYPES

Creating and freeing instances

- + alloc
- free

Getting the class version

- + version

Initializing a new instance

- initEngineClass:
- initEngineInstance:

Getting random numbers - bool

- percent

- rand
- randFunc:
- randMax:
- randMin:max:
- read:
- write:

Archiving

CLASS METHODS

alloc

+ **alloc**

Returns a new uninitialized instance.

version

+ **version**

Returns the version number of this class, currently 3.

INSTANCE METHODS

bool

- (BOOL)**bool**

Returns a random Boolean value.

free

- **free**

Frees the memory occupied by the Random instance and returns **nil**.

initEngineClass:

- **initEngineClass:***aClass*

Initializes the Random with a newly allocated instance of the class *aClass* as its engine.

See also: \pm **initEngineInstance:**

initEngineInstance:

- **initEngineInstance:***anObject*

Initializes the Random with the *anObject* as its engine. *anObject* must be an instance of a subclass of RandomEngine. It is an error to pass in an object which is not.

See also: \pm **initEngineClass:**

percent

- (double)**percent**

Returns a double in the range [0.0, 1.0].

rand

- (int)**rand**

Returns an int in the range [0, RAND_RANGE]. RAND_RANGE is the maximum unsigned long integer value possible.

randFunc:

- (double)**randFunc:**(ddfunc)*func*

Returns a double which is the result of applying the function *func* to a random percentage.

This is useful for transforming the uniform random numbers Random returns into a non-uniform distribution of your choice.

randMax:

- (int)**randMax**:(int)*max*

Returns an int in the range $[0, max]$.

randMin: max:

- (int)**randMin**:(int)*min* **max**:(int)*max*

Returns an int in the range $[min, max]$.

read:

- **read**:(NXTypedStream *)*stream*

Unarchives a Random from *stream*.

See also: - **write**:

write:

- **write**:(NXTypedStream *)*stream*

Archives a Random to *stream*.

See also: - **read**:

DEFINED TYPES

```
/* Double Function Returning Double */
```

```
typedef double (*ddfunc) (double);
```