

# Class `java.util.Random`

```
java.lang.Object
|
+----java.util.Random
```

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public class **Random**  
extends [Object](#)

A `Random` class generates a stream of pseudo-random numbers.

To create a new random number generator, use one of the following methods:

```
new Random()
new Random(long seed)
```

The form `new Random()` initializes the generator to a value based on the current time. The form `new Random(long seed)` seeds the random number generator with a specific initial value; use this if an application requires a repeatable stream of pseudo-random numbers.

The random number generator uses a 48-bit seed, which is modified using a linear congruential formula. See Donald Knuth, *The Art of Computer Programming, Volume 2*, Section 3.2.1. The generator's seed can be reset with the following method:

```
setSeed(long seed)
```

To create a pseudo-random number, use one of the following functions:

```
nextInt()
nextLong()
nextFloat()
nextDouble()
nextGaussian()
```

**See Also:**  
[random](#)

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## Constructor Index

- o **Random()**

Creates a new random number generator.

- o **Random(long)**

Creates a new random number generator using a single `long` seed.

## Method Index

- o **nextDouble()**

Generates a pseudorandom uniformly distributed `double` value between 0.0 and 1.0.

- o **nextFloat()**

Generates a pseudorandom uniformly distributed `float` value between 0.0 and 1.0.

- o **nextGaussian()**

Generates a pseudorandom Gaussian distributed `double` value with mean 0.0 and standard deviation 1.0.

- o **nextInt()**

Generates a pseudorandom uniformly distributed `int` value.

- o **nextLong()**

Generate a pseudorandom uniformly distributed `long` value.

- o **setSeed(long)**

Sets the seed of the random number generator using a single `long` seed.

## Constructors

- o **Random**

```
public Random()
```

Creates a new random number generator. Its seed will be initialized to a value based on the current time.

- o **Random**

```
public Random(long seed)
```

Creates a new random number generator using a single `long` seed.

**Parameters:**

seed – the initial seed

**See Also:**

[setSeed](#)

# Methods

## o **setSeed**

```
public synchronized void setSeed(long seed)
```

Sets the seed of the random number generator using a single `long` seed.

**Parameters:**

seed – the initial seed

## o **nextInt**

```
public int nextInt()
```

Generates a pseudorandom uniformly distributed `int` value.

**Returns:**

an integer value.

## o **nextLong**

```
public long nextLong()
```

Generate a pseudorandom uniformly distributed `long` value.

**Returns:**

A long integer value

## o **nextFloat**

```
public float nextFloat()
```

Generates a pseudorandom uniformly distributed `float` value between 0.0 and 1.0.

**Returns:**

a float between 0.0 and 1.0 .

## o **nextDouble**

```
public double nextDouble()
```

Generates a pseudorandom uniformly distributed `double` value between 0.0 and 1.0.

**Returns:**

a float between 0.0 and 1.0 .

## o **nextGaussian**

```
public synchronized double nextGaussian()
```

Generates a pseudorandom Gaussian distributed `double` value with mean 0.0 and

standard deviation 1.0.

**Returns:**

a Gaussian distributed double.

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