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# **mersenne-twister-predictor**

**Dec 29, 2020**



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## 1.1 mt19937predictor module

```
mt19937predictor.LOWER_MASK = 2147483647
```

```
mt19937predictor.M = 397
```

```
mt19937predictor.MATRIX_A = 2567483615
```

```
class mt19937predictor.MT19937Predictor
```

```
    Bases: random.Random
```

Usage:

```
>>> import random
>>> from mt19937predictor import MT19937Predictor
>>> predictor = MT19937Predictor()
>>> for _ in range(624):
...     x = random.getrandbits(32)
...     predictor.setrandbits(x, 32)
>>> random.getrandbits(32) == predictor.getrandbits(32)
True
>>> random.random() == predictor.random()
True
>>> a = list(range(100))
>>> b = list(range(100))
>>> random.shuffle(a)
>>> predictor.shuffle(b)
>>> a == b
True
```

```
gauss(*args)
```

```
    Raises NotImplementedError
```

```
genrand_int32()
```

**getrandbits** (*bits*)

The interface for `random.Random.getrandbits()` in Python's Standard Library

**getstate** (*\*args*)

Raises `NotImplementedError`

**random** ()

The interface for `random.Random.random()` in Python's Standard Library

**seed** (*\*args*)

Raises `NotImplementedError`

**setrand\_int32** (*y*)

Feceive the target PRNG's outputs and reconstruct the inner state. when 624 consecutive DOWRDs is given, the inner state is uniquely determined.

**setrandbits** (*y, bits*)

The interface for `random.Random.getrandbits()` in Python's Standard Library

**setstate** (*\*args*)

Raises `NotImplementedError`

`mt19937predictor.N = 624`

624 values (of 32bit) is just enough to reconstruct the internal state

`mt19937predictor.UPPER_MASK = 2147483648`

`mt19937predictor.generate (mt, kk)`

`mt19937predictor.genrand_int32 (mt, mti)`

`mt19937predictor.tempering (y)`

`mt19937predictor.unttempering (y)`

## CHAPTER 2

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### Indices and tables

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**m**

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