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> What exactly is the function of random.seed() in...

What exactly is the function of random.seed() in python?

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I am a bit confused on what random.seed() does in Python. For example, why does the below trials do what they do (consistently)?

```
>>> import random
>>> random.seed(9001)
>>> random.randint(1, 10)
1
>>> random.randint(1, 10)
3
>>> random.randint(1, 10)
6
>>> random.randint(1, 10)
6
>>> random.randint(1, 10)
7
```

I couldn't find good documentation on this. Thanks in advance!

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Oct 12, 2018 in [Python \(../python\)](#) by [charlie_brown \(../user/454312\)](#)

• 7,720 points

• 24,668 views



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6 answers to this question.

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Pseudo-random number generators work by performing some operation on a value. Generally this value is the previous number generated by the generator. However, the first time you use the generator, there is no previous value.

Seeding a pseudo-random number generator gives it its first "previous" value. Each seed value will correspond to a sequence of generated values for a given random number generator. That is, if you provide the same seed twice, you get the same sequence of numbers twice.

Generally, you want to seed your random number generator with some value that will change each execution of the program. For instance, the current time is a frequently-used seed. The reason why this doesn't happen automatically is so that if you want, you can provide a specific seed to get a known sequence of numbers.



answered (../25335/what-exactly-is-the-function-of-random-seed-in-python?show=25338#a25338) **Oct 12, 2018** by **ariaholic** (../user/384562)

• 7,340 points

↩ Comment



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The seed method is used to initialize the pseudorandom number generator in Python.

The random module uses the seed value as a base to generate a random number. if seed value is not present it takes system current time. if you provide same seed value before generating random data it will produce the same data. refer

 <https://pynative.com/python-random-seed/>

(<https://pynative.com/python-random-seed/>) for more details

Example:

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```
import random

random.seed( 30 )
print ("first number - ", random.randint(25,50))
```


```
random.seed( 30 )
print ("Second number- ", random.randint(25,50))
```

Output:

```
first number - 42
Second number - 42
```



answered (../25335/what-exactly-is-the-function-of-random-seed-in-python?show=29174#a29174) **Oct 29, 2018** by Rahul

 Comment



Hey @Rahul.. I get the same output when I run your code from a file but when I run the same code in the python console, I get different output. Can you please tell me why is that so?

```
Python 3.6.5 (v3.6.5:f59c0932b4, Mar 28 2018, 17:00:18) [MSC v.1900 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>> import random
>>> random.seed(30)
>>> print ("first number- ", random.randint(25,50))
first number- 42
>>> print ("second number- ", random.randint(25,50))
second number- 50
>>>
```



commented (../25335/what-exactly-is-the-function-of-random-seed-in-python?show=29249#c29249) Oct 29, 2018 by Kumar



@kumar,

You need to run `random.seed(30)` again to set the seed back to its previous value. Generally, the seed is the previous value generated by the generator. So, when you ran `random.randint(25,50)` second time, your seed was 42 and not 30.

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If you run `random.seed(30)` again, 42, 50,...will be the sequence of numbers generated.



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commented (../25335/what-exactly-is-the-function-of-random-seed-in-python?show=40640#c40640) Mar 10 by **Rishabh** (../user/573809)



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Suppose I generate 10 values, will all these values be stored? If yes, where are these values stored? Thanks

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commented (../25335/what-exactly-is-the-function-of-random-seed-in-python?show=40712#c40712) Mar 11 by Suman



No. the last value it generated will be stored because that value will work as the seed for next number



commented (../25335/what-exactly-is-the-function-of-random-seed-in-python?show=49232#c49232) Jun 14 by anonymous



```
import random

for i in range(2):
    random.seed(10)
    for i in range(20):
        print(random.random())
    print()
```

Use the above code to see a repeated output for yourself



commented (../25335/what-exactly-is-the-function-of-random-seed-in-python?show=49233#c49233) Jun 14 by Abhinav Kumar



ohh okayyy! Thanks, the example makes it clearer.



commented (../25335/what-exactly-is-the-function-of-random-seed-in-python?show=49234#c49234) Jun 14 by Alice



We dont really know



answered (../25335/what-exactly-is-the-function-of-random-seed-in-python?show=41348#a41348) Mar 15 by anonymous

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Check this link, but basically the seed is a reference to your random number. When you call it will generate the same random number

<https://pynative.com/python-random-seed/>
(<https://pynative.com/python-random-seed/>)

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answered (../25335/what-exactly-is-the-function-of-random-seed-in-python?show=43842#a43842) **Apr 16** by Yordan Ramshev

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Random sequence generation starts with reference to the provided seed. So if same seed provided twice same sequence is obtained as the same algorithm works in background.



answered (../25335/what-exactly-is-the-function-of-random-seed-in-python?show=45100#a45100) **May 3** by Abhijit Choudhary

Comment



Is it like an XOR function? If you use it twice you get the same output again.



commented (../25335/what-exactly-is-the-function-of-random-seed-in-python?show=45195#c45195) May 6 by Raj



+1
 vote

The seed() is one of the methods in Python's random module. It initializes the pseudorandom number generator. You should call it before generating the random number. If you use the same seed to initialize, then the random output will remain the same.

To know the detail, you may refer: Python Random Seed (<https://www.techbeamers.com/random-seed-python/>)

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```
import random as r

r.seed( 13 )
print("First iteration - ", r.randint(2, 40))

r.seed( 13 )
print("Second iteration - ", r.randint(2, 40))
```

Output

```
First iteration - 18
Second iteration - 18
```



answered (../25335/what-exactly-is-the-function-of-random-seed-in-python?show=56009#a56009) **Aug 29** by Vani sharma

Comment



That's a really nice explanation. I've upvoted your answer.



commented (../25335/what-exactly-is-the-function-of-random-seed-in-python?show=56065#c56065) Aug 30 by Abheesh



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