Generating random number list in Python

There is a need to generate random numbers when studying a model or behavior of a program for different range of values. Python can generate such random numbers by using the random module. In the below examples we will first see how to generate a single random number and then extend it to generate a list of random numbers.

Generating a Single Random Number

The random() method in random module generates a float number between 0 and 1.

Example

```
import random
n = random.random()
print(n)
```

Output

Running the above code gives us the following result −

```
0.2112200
```

Generating Number in a Range

The randint() method generates a integer between a given range of numbers.

Example

```
import random
n = random.randint(0,22)
print(n)
```

Output

Running the above code gives us the following result −

```
2
```

Generating a List of numbers Using For Loop

We can use the above randint() method along with a for loop to generate a list of numbers. We first create an empty list and then append the random numbers generated to the empty list one by one.

Example

```
import random
randomlist = []
```

```
for i in range(0,5):
n = random.randint(1,30)
randomlist.append(n)
print(randomlist)
```

Output

Running the above code gives us the following result −

```
[10, 5, 21, 1, 17]
```

Using random.sample()

We can also use the sample() method available in random module to directly generate a list of random numbers.Here we specify a range and give how many random numbers we need to generate.

Example

```
import random
#Generate 5 random numbers between 10 and 30
randomlist = random.sample(range(10, 30), 5)
print(randomlist)
```

Output

Running the above code gives us the following result −

```
[16, 19, 13, 18, 15]
```