

# The First Step in Python

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# Overview

구문과 자료 구조를 소개하기 위하여 작은 Python 프로그램을 작성하고 설명

# White Noise Process

$\varepsilon_0, \varepsilon_1, \dots, \varepsilon_T$ 를 시뮬레이션하고 플롯 (각  $\varepsilon_t$ 는 독립적인 정규분포)

# 1st Version

```
import numpy as np
import matplotlib.pyplot as plt

x = np.random.randn(100)
plt.plot(x)
plt.show()
```

## 2nd Version

```
import numpy as np
import matplotlib.pyplot as plt

ts_length = 100
epsilon_values = [] # Empty list

for i in range(ts_length):
    e = np.random.randn()
    epsilon_values.append(e)

plt.plot(epsilon_values, 'b-')
plt.show()
```

# List

```
x = [10, 'foo', False]  # We can include heterogeneous data  
type(x)
```

```
x
```

```
x.append(2.5)  
x
```

```
x[1]
```

## List Comprehension

# For Loop

```
animals = ['dog', 'cat', 'bird']  
for animal in animals:  
    print("The plural of " + animal + " is " + animal + "s")
```