

# 5 Ways to Make Your Python Code Faster

## Use Built-in Functions

In [5]: `import time`

```
In [6]: # Slow:

start = time.time()

new_list = []
for word in word_list:
    new_list.append(word.capitalize())

print(time.time() - start, "seconds")

4.935264587402344e-05 seconds
```

```
In [7]: #fast

start = time.time()

word_list = ['Ways', 'to', 'Make', 'Your', 'Python', 'Code', 'Faster']
new_list = list(map(str.capitalize, word_list))

print(time.time() - start, "seconds")

0.00029468536376953125 seconds
```

## String Concatenation vs join()

```
In [9]: # Slow:

start = time.time()

new_list = []
for word in word_list:
    new_list += word

print(time.time() - start, "seconds")

5.7220458984375e-05 seconds
```

```
In [10]: #fast

start = time.time()

word_list = ['Ways', 'to', 'Make', 'Your', 'Python', 'Code', 'Faster']
new_list = "".join(word_list)

print(time.time() - start, "seconds")

0.0001430511474609375 seconds
```

## Create Lists and Dictionaries Faster

In [11]: *#slow*

```
list()
dict()
```

Out[11]: {}

In [12]: *# fast*

```
()
{}
```

Out[12]: {}

In [19]: **import** timeit

```
slower_list = timeit.timeit("list()", number=10**6)
slower_dict = timeit.timeit("dict()", number=10**6)
```

```
faster_list = timeit.timeit("[]", number=10**6)
faster_dict = timeit.timeit("{} ", number=10**6)
```

```
print("slower_list:",slower_list, "sec") #Should have used f string here..
print("slower_dict:",slower_dict, "sec")
print("faster_list:",faster_list, "sec")
print("faster_dict:",faster_dict, "sec")
```

```
slower_list: 0.036513564999995018 sec
slower_dict: 0.0470551119999952715 sec
faster_list: 0.0106661049999927484 sec
faster_dict: 0.0108387089999926894 sec
```

## f-Strings

In [22]: *#slow*

```
start = time.time()

me = "Python"
string = "Make " + me + " faster"

print(time.time() - start, "seconds")
```

4.506111145019531e-05 seconds

In [23]: *#fast*

```
start = time.time()

me = "Python"
string = f"Make {me} faster"

print(time.time() - start, "seconds")
```

0.00016546249389648438 seconds

## List Comprehensions

In [24]: *#slow*

```
start = time.time()

new_list = []
```

```
existing_list = range(1000000)
for i in existing_list:
    if i % 2 == 1:
        new_list.append(i)

print(time.time() - start, "seconds")
```

0.06872344017028809 seconds

```
In [25]: #fast
start = time.time()

existing_list = range(1000000)
new_list = [i for i in existing_list if i % 2 == 1]

print(time.time() - start, "seconds")
```

0.04211759567260742 seconds

## Bonus: Check out more Python Built-in Functions here

<https://docs.python.org/3/library/functions.html>

In [ ]: