

Fastcampus Data Science SCHOOL

Python Basic

반복문

For, while

```
for 변수 in (리스트 or 문자열):  
    실행문1  
    ...
```

```
for i in ["python", "java", "golang"]:  
    print(i)
```

For, while

```
sum = 0
for i in range(1,11):
    sum += i
    sum = sum + i
    print(sum)
```

For, while

```
while 조건:  
    실행문1  
    ...
```

```
while name != "foo bar":  
    name = input("What's your name? ")  
    print("Hi, " + name + "So, where is foo bar?")
```

```
while 1:  
    print("Hello world!")
```

Fizzbuzz

1부터 100까지 반복

3의 배수 = "Fizz"

5의 배수 = "Buzz"

15의 배수 = "FizzBuzz"

나머지 = 그 숫자

Fizzbuzz

```
num = eval(input("type the number: "))

for i in range(1, num + 1):
    if i % 15 == 0:
        print("fizzbuzz")
    elif i % 3 == 0:
        print("fizz")
    elif i % 5 == 0:
        print("buzz")
    else:
        print(i)
```

Refactoring numguess

```
import random

answer = random.randint(1,100)
username = input("Hi there, What's your name?? ")

while True:
    guess = eval(input("Hi "+ username + ", guess the number"))

    if guess == answer:
        print("Correct! The answer was ", str(answer))
        break
    else:
        print("That's not what I wanted!! Try again!!!")
```


give a hint!!

```
import random

answer = random.randint(1,100)
username = input("Hi there, What's your name?? ")

while True:
    guess = eval(input("Hi, "+ username + "guess the number: "))

    if guess == answer:
        print("Correct! The answer was ", str(answer))
        break
    elif guess > answer:
        print("Too high!! Try again!!")
    elif guess < answer:
        print("Too Low!! Try again!!")
```

limit trial

```
import random

answer = random.randint(1,100)
username = input("Hi there, What's your name?? ")
trial = 5
while trial:
    guess = eval(input("Hi, "+ username + ". guess the number: "))

    if guess == answer:
        print("Correct! The answer was ", str(answer))
        break
    elif guess > answer:
        trial -= 1
        print("Too high!! Try again!!(%d times left)" % (trial))
    elif guess < answer:
        trial -= 1
        print("Too Low!! Try again!!(%d times left)" % (trial))

if trial == 0:
    print("You are Wrong! The answer was ", str(answer))
```

List Comprehension

존재하는 리스트를 활용하여 새로운 리스트를 생성하는 방법

비슷한 표현들

- Set Comprehension
- Dictionary Comprehension
- Parallel list Comprehension

List Comprehension

```
old_list = [1, 2, 3, 4, 5,]  
  
doubled_list = []  
for i in old_list:  
    doubled_list.append(i * 2)
```

List Comprehension

```
old_list = [1, 2, 3, 4, 5,]  
  
doubled_list = []  
for i in old_list:  
    doubled_list.append(i * 2)
```

```
doubled_list = []
```

List Comprehension

```
old_list = [1, 2, 3, 4, 5,]  
  
doubled_list = []  
for i in old_list:  
    doubled_list.append(i * 2)
```

```
doubled_list = [i * 2]
```

List Comprehension

```
old_list = [1, 2, 3, 4, 5,]  
  
doubled_list = []  
for i in old_list:  
    doubled_list.append(i * 2)
```

```
doubled_list = [i * 2 for i in old_list]
```

List Comprehension - another example

```
old_list = [1, 2, 3, 4, 5,]

doubled_list = []
for i in old_list:
    if i % 2 == 0:
        doubled_list.append(i * 2)
```


List Comprehension - another example

```
old_list = [1, 2, 3, 4, 5,]

doubled_list = []
for i in old_list:
    if i % 2 == 0:
        doubled_list.append(i * 2)
```

```
doubled_list = []
```

List Comprehension - another example

```
old_list = [1, 2, 3, 4, 5,]

doubled_list = []
for i in old_list:
    if i % 2 == 0:
        doubled_list.append(i * 2)
```

```
doubled_list = [i * 2]
```

List Comprehension - another example

```
old_list = [1, 2, 3, 4, 5,]

doubled_list = []
for i in old_list:
    if i % 2 == 0:
        doubled_list.append(i * 2)
```

```
doubled_list = [i * 2 for i in old_list]
```

List Comprehension - another example

```
old_list = [1, 2, 3, 4, 5,]

doubled_list = []
for i in old_list:
    if i % 2 == 0:
        doubled_list.append(i * 2)
```

```
doubled_list = [i * 2 for i in old_list if i % 2 == 0]
```

오늘의 숙제

- List Comprehension으로 FizzBuzz 한 줄로 구현하기
- [Hackerrank](#) 30 Days of code Day2, Day3, Day5 풀어보기