Fastcampus

컴퓨터공학 입문 스쿨

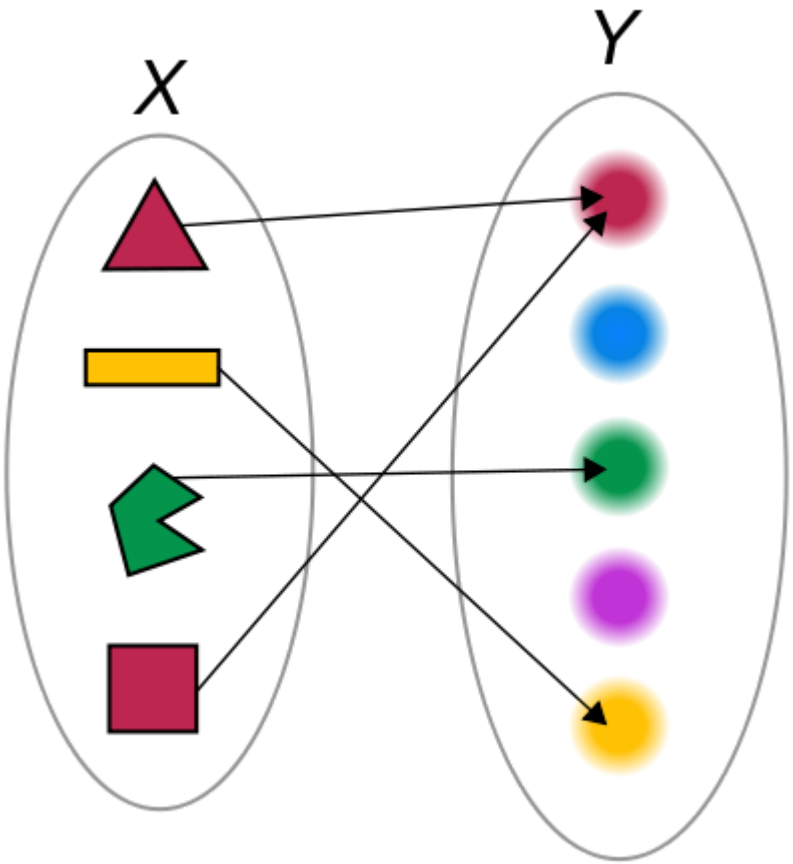
Python Basic_Day4

Mini Project

- List comprehension 으로 FizzBuzz 한줄로 구현하기
- Numguess 기능 추가하기

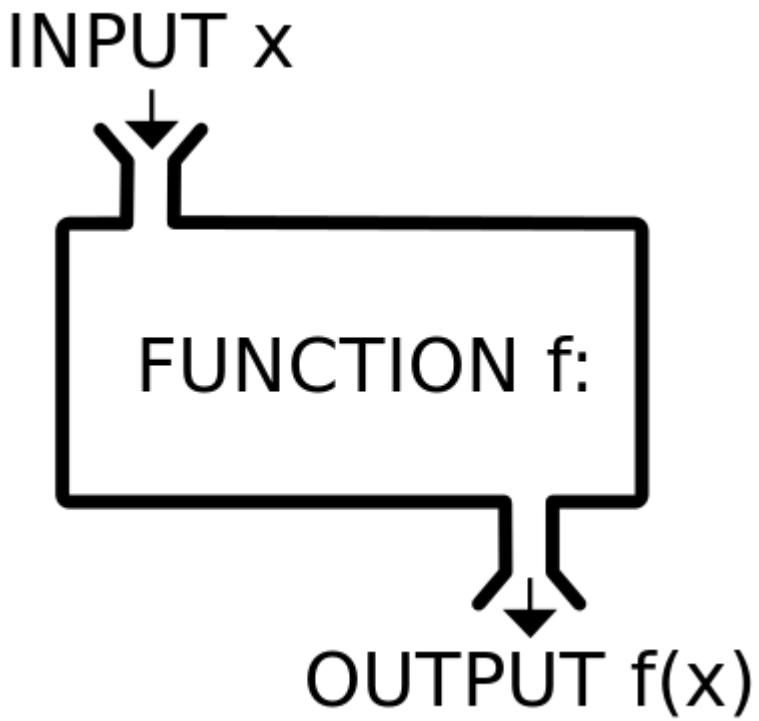
```
["Fizz"*(not i%3) + "Buzz"*(not i%5) or i for i in range(1,100)]
```

function



- 수학적 정의: 첫 번째 집합의 임의의 한 원소를 두 번째 집합의 오직 한 원소에 대응시키는 대응 관계
- x: 정의역 y: 공역

function



- 프로그래밍에서의 함수: 입력값을 내부에서 어떤 처리를 통해 결과값을 출력하는 것

function

```
def function(parameter):
        실행문1
        실행문2
        ...
```

function

```
def awe_sum(a,b):
        result = a + b
    return result

a = 2
b = 3
print(awe_sum(a,b))
```

function without input

```
def print_hello():
    return "hello"

result_hello = print_hello()
print(result_hello)
```

function without return

```
def func_wo_return(a):
    print("This is function without return for " + str(a) + " ti

func_wo_return()
```

function with multiple return

```
def mul_return(a):
    b = a + 1
        return a,b
```

return skill

```
def id_check(id):
        if id == "admin":
                print("invalid id: admin")
                return
        print("valid id: ", id)
```

parameter with initialize

```
def say_hello(name="Fool", nick=True):
        print("Hi, ", name)
        if nick == True:
                print("But, you are Fool")
        else:
                print("Oh, you are not Fool")
```

초기값을 설정할땐 항상 그 인자를 마지막에 두어야 합니다.

arguments

```
def mul_sum(*args):
        sum = 0
        for i in args:
                sum += i
        return sum
```

keyword arguments

```
def show_kwargs(**kwargs):
        print(str(kwargs))

show_kwargs(a=10, b="google")
```

keyword arguments

```
def kwargs_url(server, port, **query):
        url = "https://" + server + ":" + port + "?"
        for key in query.keys():
                url += key + "=" + query[key] + "&"
        return url

kwargs_url("localhost","8080", utm_source="google", keyword="nav
```

variable outside function

```
a = "hello"
def glob_test(a):
        a += "world"
    return a

glob_test(a)
print(a)
```

```
a = "hello"
def glob_test(x):
        x += "world"
    return x

glob_test(a)
print(a)
```

variable outside function

```
def glob_test2(x):
        x += "world"
        return x

glob_test2("hello")
glob_test2(x)
```

So, how to globalize

(1) using return

```
a = "hello"
def glob_test(a):
        a += "world"
    return a

a = glob_test(a)
print(a)
```

So, how to globalize

(2) use global

```
a = "hello"
def glob_test(a):
        global a
        a += "world"
    return a

glob_test(a)
print(a)
```

global 이라는 명령을 사용하여 전역변수로 사용하게 되면 함수는 독립성을 잃게 되어 함수가 외부변수에 의존적이게 됩니다.

Leap year

4로 나뉘어 떨어지면 윤년,
100으로 나뉘어 떨어지면 평년,
400으로 나뉘어 떨어질땐 윤년

Leap year(answer)

```
leap = False
def is_leap(y):
        if y % 4 == 0 and (y % 100 != 0 or y % 400 == 0)
                leap = True
        return leap

y = int(input("Is leap?? "))
print(is_leap(y))
```

numguess with function

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

Recursive

```
times = int(input("How many times want to curse the beast??: "))
def recurse_beast(a):
        if a == 0:
                print("curse complete!")
        else:
                print("Fusion!!!(%d times left)" % a - 1)
                recurse_beast(a-1)

recurse_beast(times)
```

File I/O

File I/O

```
f = open(filename, mode)
f.close()
```

mode

r - 읽기모드

w - 쓰기모드

a - 추가모드(파일의 마지막에 새로운 내용을 추가)

Create New File

```
f = open("Newfile.txt", 'w')
f.close()
```

Write text

```
f = open("Newfile.txt", 'a')
for i in range(1,11):
    text = "line %d. \n" % i
    f.write(text)
f.close()
```

Read text

```
f = open("Newfile.txt", 'r')
text = f.readline()
print(text)
f.close()
```

Read All text

```
f = open("Newfile.txt", 'r')
while True:
        text = f.readline()
        if not text: break
        print(text)
f.close()
```

Read All text using readlines

```
f = open("Newfile.txt", 'r')
texts = f.readlines()
for text in texts:
        print(texts)
f.close()
```

Add text

```
f = open("Newfile.txt", 'a')
for i in range(11, 20):
        text = "New line %d \n" % i
        f.write(text)
f.close()
```

Get rid of f.close()

```
with open("foo.txt", 'w') as f:
        f.write("foo is text dummy")
```

Error Handle

by using `try, except`

필요한 만큼만 적절히 사용하셔야 합니다 by PEP 8

Error Handle - Syntax

```
try:
        실행문
except:
        실행문
```

Error Handle - ValueError

```
try:
        some_input = int(input("type some number: "))
except ValueError:
        print("I said type some NUMBER!!!!")
```

Error Handle - ValueError

```
try:
        some_input = int(input("type some number: "))
except ValueError as e:
        print("I said type some NUMBER!!!!")
    print(e)
```

Error Handle - FileNotFoundError

```
try:
        f = open('error_example.txt', 'r')
except FileNotFoundError as e:
        print(e)
else:
        text = f.read()
        f.close()
```

Error Handle - Multiple Error

```
try:
        ...
except error type 1:
        ...
except error type 2:
        ...
```

Error Handle - Pass Error

```
try:
        f = open('error_example.txt', 'r')
except FileNotFoundError as e:
        pass
else:
        text = f.read()
    f.close()
```