

## [Session 1] Python Basics Exercise

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### Note

You don't need to solve everything, because it is not mandatory and graded, just for practice! We will provide a solution after the real-time class. But, if you have some problem and ask us, then we will give you some help or hints. **Good luck!**

### Exercise 1

It is a non-programming exercise. Just predict the output of the following code, try this **WITHOUT RUNNING CODE**.

#### (1.1) Arithmetic operations

```
print(15 + 5 - 3 * 2)
print(15 ** 2)
print(8 / 4)
print(15 // 4)
print(5 % 4)
print(4 % 8)
print(4 // -3)
```

#### (1.2) Basic use of print() function

```
print("a", "b", 3, sep=" ")
print("55", end=" ")
print("abc")
```

#### (1.3) String operations

```
print("One"[2])
a = "Two"
print(a[1])
print(a + "four")
print("1" + "2")
print("1" * 10)
print("A\b")
print("O\\O")
print("\nn\n\n")
```

#### (1.4) Conditionals

```
result = ""
if 1:
    result += "1"
if []:
    result += "2"
if 0:
    result += "3"
if ():
    result += "4"
if 0.00000000000001:
    result += "5"
if None:
```

```
    result += "6"
if True or False and not False:
    result += "7"
if 1 is 1:
    result += "8"
if "":
    result += "9"

print(result)
```

### (1.5) Loop

```
num1 = 0
for i in range(100):
    num1 += i
print(num1)

num2 = 0
for i in [1, 3, 5]:
    for j in [1, 3, 5]:
        num2 += i * j
print(num2)

num3 = 100
num4 = 0
while num3:
    num3 -= 1
    if num3 % 2 == 0:
        continue
    num4 += num3
print(num4)
```

## Exercise 2

You will implement something, according to the description.

### (2.1) Function 1

Define a function named “is\_even” that uses a parameter, `n`. It returns True when `n` is even, and returns False when `n` is odd number. Modify the following code and write your solution.

```
def is_even(n):
    pass
```

Your function should meet the followings...

- `is_even(0)` should be True
- `is_even(4)` should be True
- `is_even(-12412491)` should be False
- `is_even(1)` should be False

### (2.2) Function 2

Implement a function named “greeting”, that uses parameter `name`. It returns nothing, but it prints “hello, (some name)!”. If no argument is given, then the name should be “Anonymous”. Modify the following code and write your solution.

```
def greeting(name):
    pass
```

Your function should meet the followings...

- `greeting("Kevin")` should print, "hello, Kevin!"
- `greeting("")` should print, "hello, !"
- `greeting()` should print, "hello, Anonymous!"

**(Additional Question)** How about the result of `greeting("\b" * 7)`?

### (2.3) Class 1

A class, **Student**, has contains some data: **name, ID, and grade**. You only need to implement just one method:

- **`get_info()`**: It has no return value, but it prints student's name with the following format. For example, if the name is "Kevin", ID is 205224, and he is 3<sup>rd</sup> grade:

```
Name: Kevin
ID: 205224
Grade: Junior
```

Instead of representing grade as number, **you should use Freshman, Sophomore, Junior, and Senior**.

You can use the following skeleton.

```
class Student:
    def __init__(self, name, id, grade):
        self.name = name
        self.id = id
        self.grade = grade

    def get_info(self):
        pass
```

Your method should print the followings:

```
a = Student("Bob", 20181055, 4)
a.get_info()
```

```
Name: Bob
ID: 20181055
Grade: Senior
```

```
b = Student("Sandy", 202020412, 1)
b.get_info()
```

```
Name: Sandy
ID: 202020412
Grade: Freshman
```