

# PYTHON CLASS 6

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PRACTICE USING FUNCTIONS AND  
VARIABLES;



# PRACTICE USING FUNCTIONS

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- Go to Mr. Hunter's github page:

<https://github.com/davidcbhunter/POP2022>

- Get the file

`dna string.py`

We want to count how many times these appear:

AAAA

TTTT

CCC

GATTACA

# FUNCTION PRACTICE 2

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- This time, get the file  
visual\_novel.py
- We want to replace Main\_Character with your name, Side\_Character with a friend's name, ACTION with an activity, SEASON with (winter, summer, fall, spring), TIME with a date, PLACE with a place, and THING with a thing.

# FUNCTION PRACTICE 3

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Here is a fake website –

```
my_site = "www.mywebsite.com"
```

We want to check that the format is OK –

it should start with “www.”

it should end with “.com”

# FUNCTION PRACTICE 4

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- Let's import datetime.
- Make a date.
- Use `date.weekday()` to find what day you were born on.
- Use `datetime.today()` to get today's date.
- Enter a date for when you started a hobby. Find out exactly how long you've been doing it. `(today-start)`



# FUNCTION PRACTICE 5

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- Let's import the random library.
- Let's make a list and use `random.choice(list)`
- Let's use `random.randint(start,stop)`
- Let's combine random and string –
  - Make a new string with a random starting point in the original string

# REVIEWING HOW TO CREATE FUNCTIONS

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# CREATE SOME MATH FUNCTIONS

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- Add two numbers.
- Subtract two numbers.
- Divide two numbers
- Multiply two numbers.
- Compare two numbers.



# WHY DO WE HAVE FUNCTIONS?



# ADVANCED FUNCTIONS

- Besides doing things, functions can give back values.
- To give back a value, we use the **return** keyword ( 予約語 ).

```
def dog_age(human_age):  
    return human_age * 7  
  
my_age = 39  
  
my_dog_age = dog_age(my_age)  
print(my_dog_age)
```

# ADVANCED FUNCTIONS, 2

```
def dog_age(human_age):  
    return human_age * 7
```

```
my_age = 39
```

```
my_dog_age = dog_age(my_age)  
print(my_dog_age)
```

What is the type  
my\_dog\_age?

How can you check?

# ADVANCED FUNCTIONS, 3

```
first_name = "David"  
last_name = "Hunter"  
def combine_string(a, b):  
    return a+b  
  
name = combine(first_name,last_name)
```

What is the type name?

How can you check?



# MAKE AN ADVANCED FUNCTION

- Pick some of our functions from before and make them return a value.
- Use the `type()` function to test the return value.
- Assign the return value to a variable.
- Print the variable.




ゆうこう はん い

# FUNCTIONS AND SCOPE (有効範囲)

- If you create a variable inside a function, the scope of the variable is the function.
- This means, you cannot use the variable outside the function.




# FUNCTIONS AND SCOPE (有効範囲)



```
def cube(n):  
    a = n * n * n  
    return a
```



```
print(cube(5))
```



```
num = 10
```



```
print(cube(num))
```



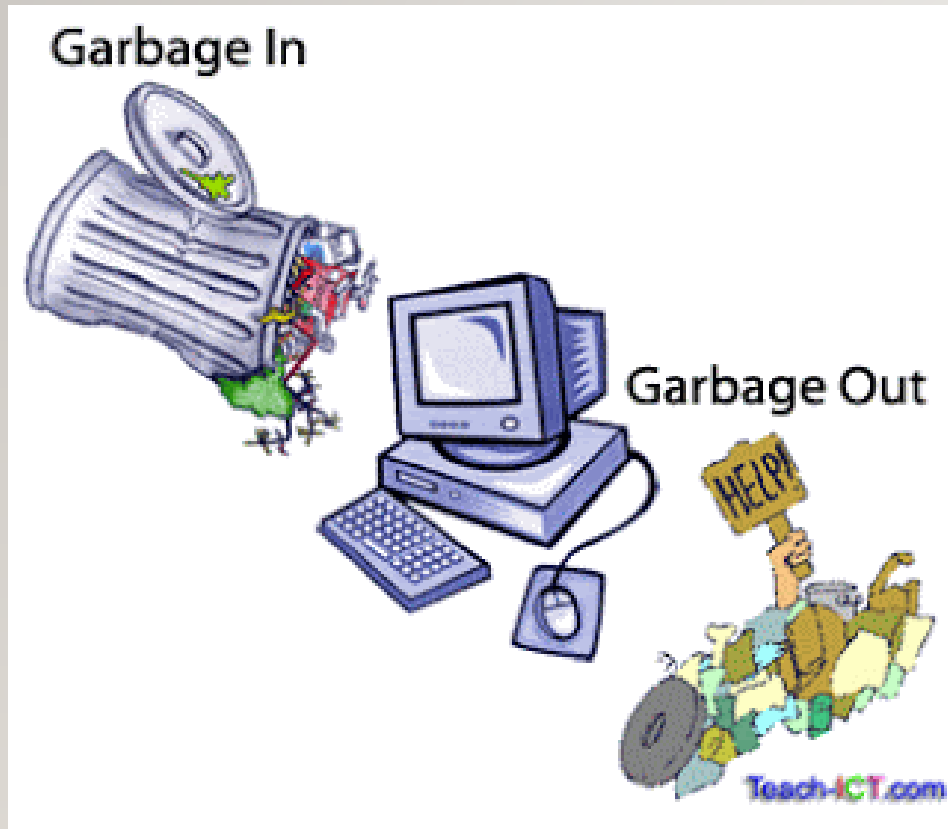
```
print(a)
```

# MAKE AN ADVANCED FUNCTION

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- Pick some of our functions from before and make them return a value.
- Use the `type()` function to test the return value.
- Assign the return value to a variable.
- Print the variable.

# INPUT (入力) AND OUTPUT (出力)



# OUTPUT

- Using print
- Use + to combine different strings.
- If you want to combine a string and another variable type (integer, float, boolean), you must cast (かたへんかん 型変換) it.
- Python has 4 built-in casting functions:

int()	float()	bool()	str()
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# GETTING INPUT FROM THE USER

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- You can use the function `input()` to get information from the user.
- This input is ALWAYS formatted as a string.
- If you want to use it in a different way, you need to cast (型変換) it to another type.

# USING INPUT

- Open IDLE.
- Use `input()` to receive a name or string from the user.
- Call a function to do something with this name or string.

```
name = input("Please type your name. ")
```

```
print("Hello, " + name)
```

```
#Let's use a function on name --- name.replace("a","b") name.count("a")
```

# USING INPUT,2

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- Use `input()` to receive a float or int from the user.
- Call a function to do something with this float or int.