Python Class 4

Variables（変数）and Types（種）Review（復習）;
Functions（関数）
Input and Output

Variable/Types Practice

- Make 4-5 variables about your favorite thing (sport, game, music, book).

- Make a function that prints the information.

name
author(作家)/creator(作者)
publisher(出版社)
developer(開発者)
country_of_origin(出身・原産国)
release_date / publish_date / creation_date (公開日)
is_released / is_on_youtube
number_of_players
number_of_times_played /number_of_times_read / number_of_times_listened_to

The better way

```python
import datetime

class Book:
    def __init__(self, n= "", a = "",d = datetime.date.today()):
        self.name = n
        self.author = a
        self.publish_date = d


    def __str__(self):
        return self.name + " by " + self.author + " (" + str(self.publish_date.year) + ")"

book = Book("The Malazan Book of the Fallen", "Steven Erikson", datetime.date(2001,1,1))


print(book)
```

- Make a class to hold the information.

Why???

Why???

- Imagine having two books.

Why???

- Imagine having two books.

- Imagine not knowing how many books there are.

Why???

- Imagine having two books.

- Imagine not knowing how many books there are.

- Imagine adding a book or removing a book.

Create some math functions

- Add two numbers.

- Subtract two numbers.

- Divide two numbers

- Multiply two numbers.

- Compare two numbers.

Functions and Scope (有効範囲 *)*

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- 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.

Advanced Functions

- Besides doing things, functions can give back values.

- To give back a value, we use the return keyword (予約語).

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.

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 (型変換) it.

- Python has three built-in casting functions:

int()	float()	str()

Special Ways to format output

- Use can use a comma (,) to separate different arguments in print().

- Use the sep=' ' argument to decide how to separate items in print.

- Use the end=' ' argument to decide how to end a print statement.

Getting Input from the User

- 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 o string.

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Using Input,2

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

Simple Guessing Game

- Use import random

- Use random.randint(a,b) or random.uniform(a,b) to make a variable with a random value.

- Use input() to get a number from the user.

- Tell the user if they are correct.