

The image is a composite background. On the left, there is a large, stylized Python logo. The top half of the logo is blue, and the bottom half is yellow. The logo is partially cut off by the right edge of the frame. On the right side, there is a close-up photograph of a snake's head. The snake has orange and white scales and a large, dark eye. The snake's head is positioned diagonally, with its snout pointing towards the bottom right. The background of the snake's head is black.

# PYTHON CLASS I

INTRODUCTION AND COURSE OVERVIEW

# WHO IS MR. HUNTER?

Born in Michigan, US

Lived in Japan for 13 years

Enjoys rock climbing, reading  
books, programming, playing  
video games

# MICHIGAN

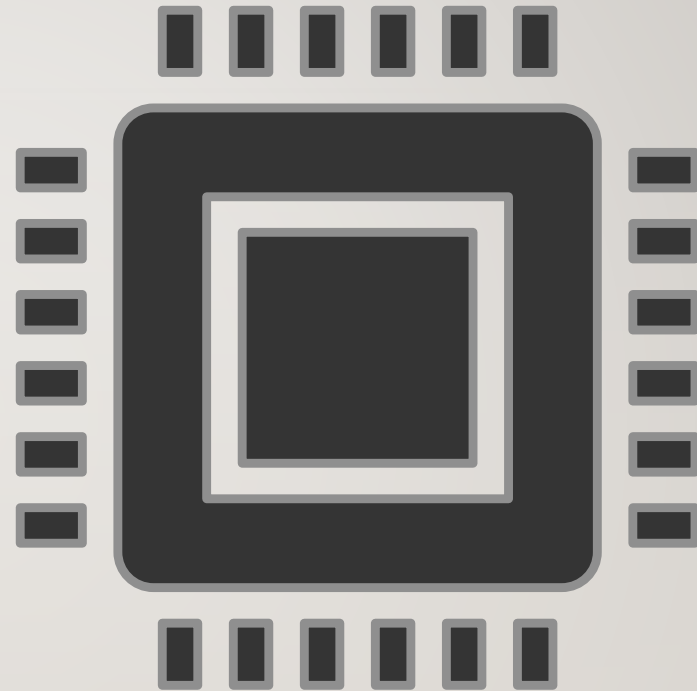




# PROGRAMMING LANGUAGES

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- C#
- Java
- C++
- Python
- Any questions?
- 質問ありませんか？



# STUDENT INTRODUCTIONS

## 生徒たちの自己紹介

- Name 名前 → I'm ~~~~~.
- Favorite food (好きな食べ物) → My favorite food is ~~~~~.
- Hobbies (趣味) → I enjoy ~~~~~ and ~~~~~.
- Class Goal (クラスの目的) → I want to learn how to ~~~~~ (make apps, make games, etc).



# COURSE OVERVIEW (科目の概要)

Introduction to Python Programming

Why use Python?

The “flow” of a program (プログラミングの流れ)

Your first Python program

Important ideas in programming – variables (変数), functions (関数), lists(列挙), looping(繰り返し), control  
ぶんき めいれい  
(分岐命令)

# COURSE OVERVIEW, 2

Using Python for Simple Projects

Creating loops

Using if-statements

Creating functions

Creating classes

# WHERE DOES THE NAME PYTHON COME FROM?

- The creator of the Python language, Guido van Rossum, is a big fan of the British comedy group, Monty Python.

If you like comedy and silly things, please watch their TV show, Flying Circus, or their movies (Quest for the Holy Grail, The Life of Brian, The Meaning of Life)





# WHY USE PYTHON?



**Fast development**



**It is easy and fast  
to create a  
prototype (原型) of  
your idea using  
Python.**



**It is much faster to  
test ideas using  
Python than  
another language,  
like C, C++, or  
Java.**

Why is development  
fast in Python??????

# WHY USE PYTHON?, 2

こうぶんきそく

- Clean Syntax (きれいな／簡単な構文規則)

```
// This C++ program prints Hello, World!  
#include <iostream>  
  
int main()  
{  
    std::cout << "Hello, World! \n";  
    return 0;  
}
```

```
# This Python program prints Hello, World!  
print("Hello, World! \n")
```

# WHY USE PYTHON?, 3

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Python programs are shorter than C, C++, C#, or Java programs.



Python has very clean syntax, so it is easy to read and understand. (Pythonの構文規則は簡単なので、読みやすく、理解しやすいです。)

# WHY USE PYTHON?, 3

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LANGUAGES WITH CLEAN  
SYNTAX ARE EASIER TO WRITE.



LANGUAGES WITH CLEAN  
SYNTAX ARE EASIER TO DEBUG.

→ （構文がきれいな言語は、誤りを見つけやすいです。）



# WHY USE PYTHON?,4

- Python is used for:
- AI and Machine Learning (ML)
- Web development (ウェブサイトを作る)
- Data extraction and analysis (データの抽出と分析)
- Game development (ゲームを作る)
- Prototyping (原型を作る)

# WHY USE PYTHON?, 5

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## 16 Famous Companies that use PYTHON

Quora

Spotify



YouTube

Google

edX

YAHOO!

Dropbox

yelp

reddit

DISQUS

IBM

Pinterest

Instagram

Eventbrite

UBER

# WHAT IS PROGRAMMING?

What is  
programming?

What do  
programmers do?

How do  
programmers think?



# THE “FLOW” (流れ) OF PROGRAMMING

```
import random

chemicals = ["A","T","C","G"]
start = "ATG"
end = ["TAG","TGA","TAA"]

class Gene:
    #we need a function to make a group of three chemicals
    def make_codon(self):
        codon = ""
        for x in range(3):
            codon = codon + chemicals[random.randint(0,3)]
        if codon == start:
            return self.make_codon()
            #print("start")
        if codon in end:
            return self.make_codon()
        return codon

    def __init__(self,codon_number):
        self.codon_list = []
        self.codon_list.append(start)
        for x in range(codon_number):
            self.codon_list.append(self.make_codon())
        self.codon_list.append(end[random.randint(0,2)])

genel = Gene(24)

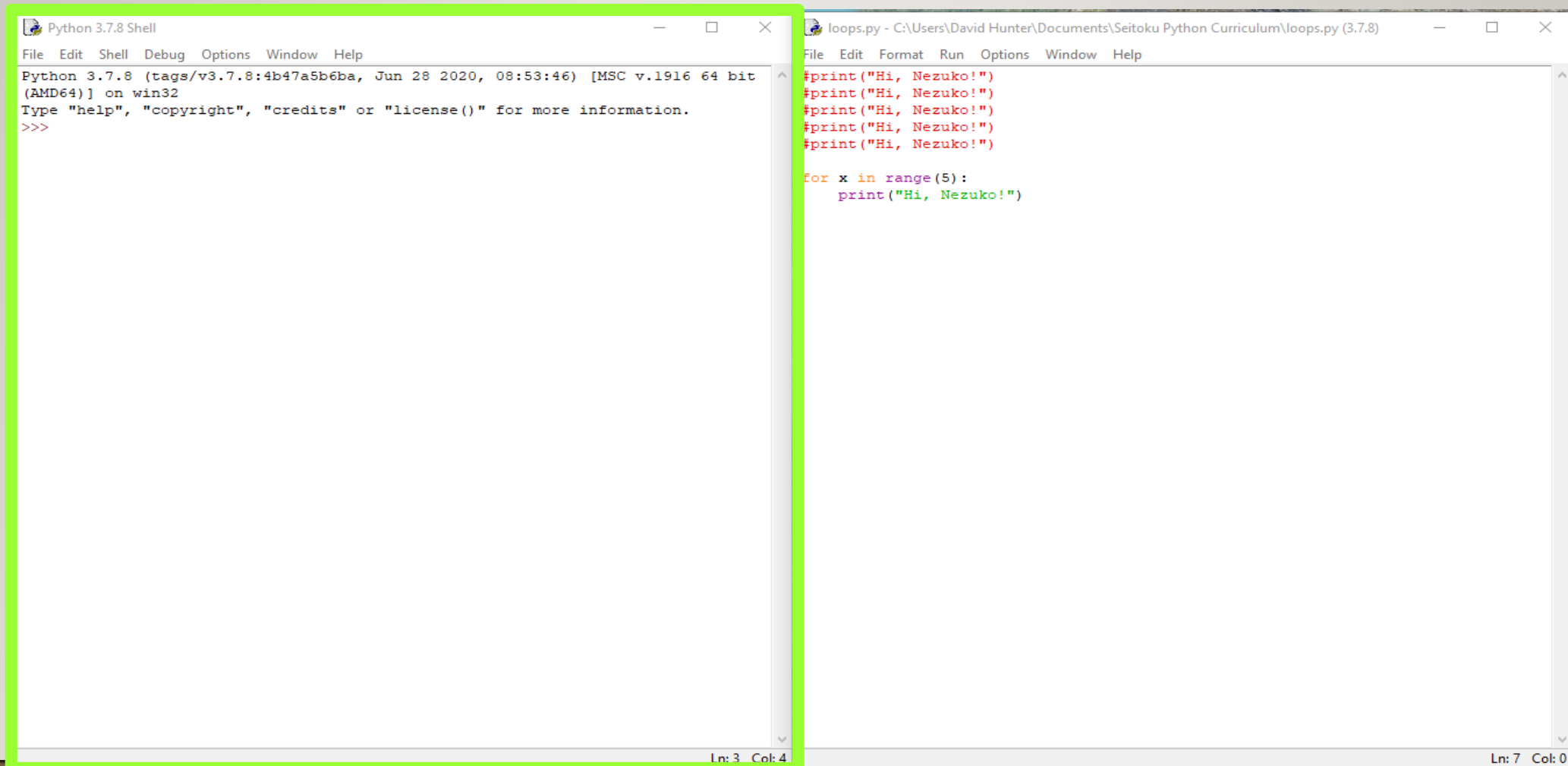
for codon in genel.codon_list:
    print(codon)
```

- A program starts at the top.
- It runs line (行) by line from top to bottom.
- If there are any errors (誤り), the program stops.



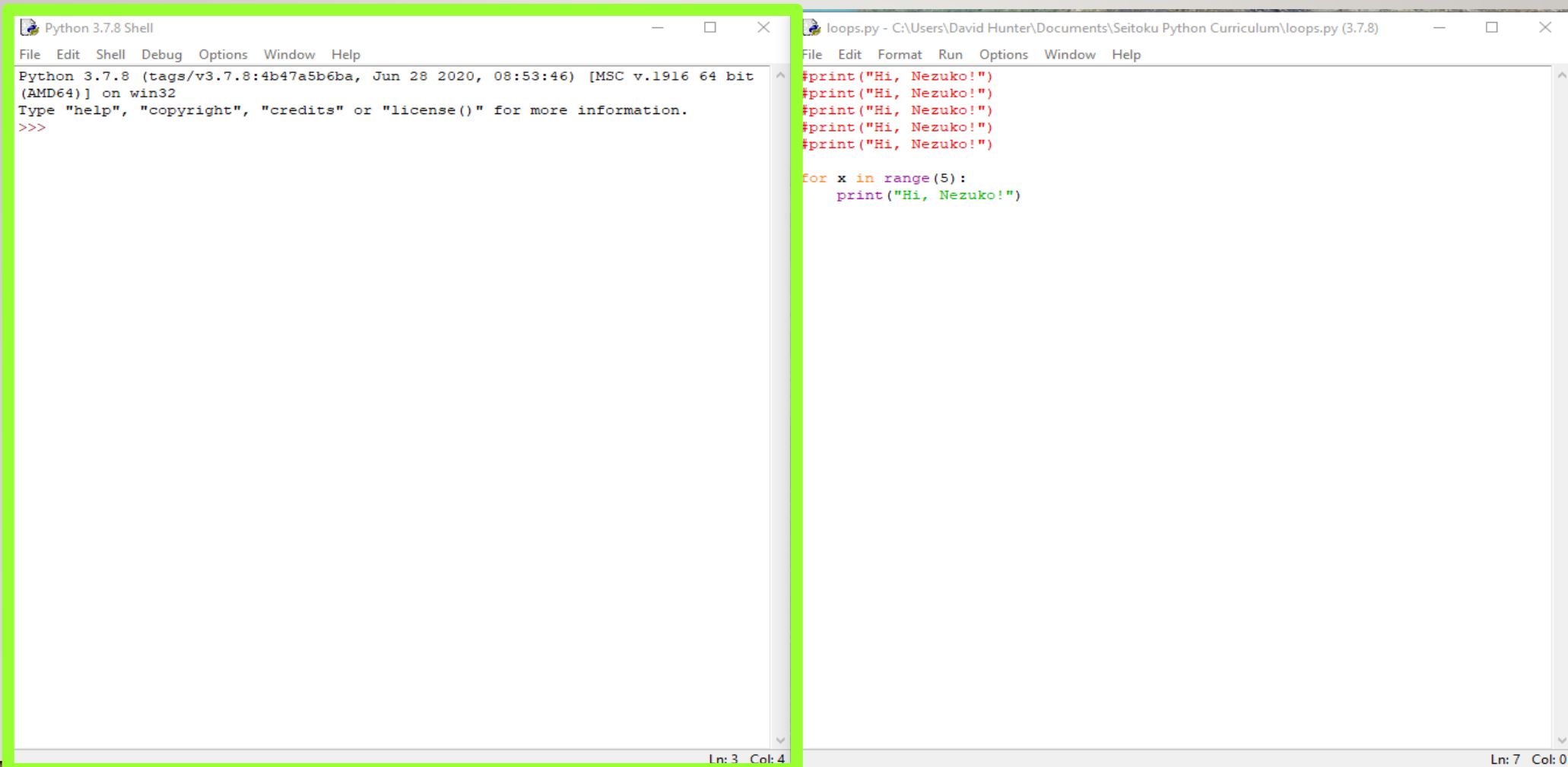
# PYTHON SHELL AND IDLE

This is the Python Shell.



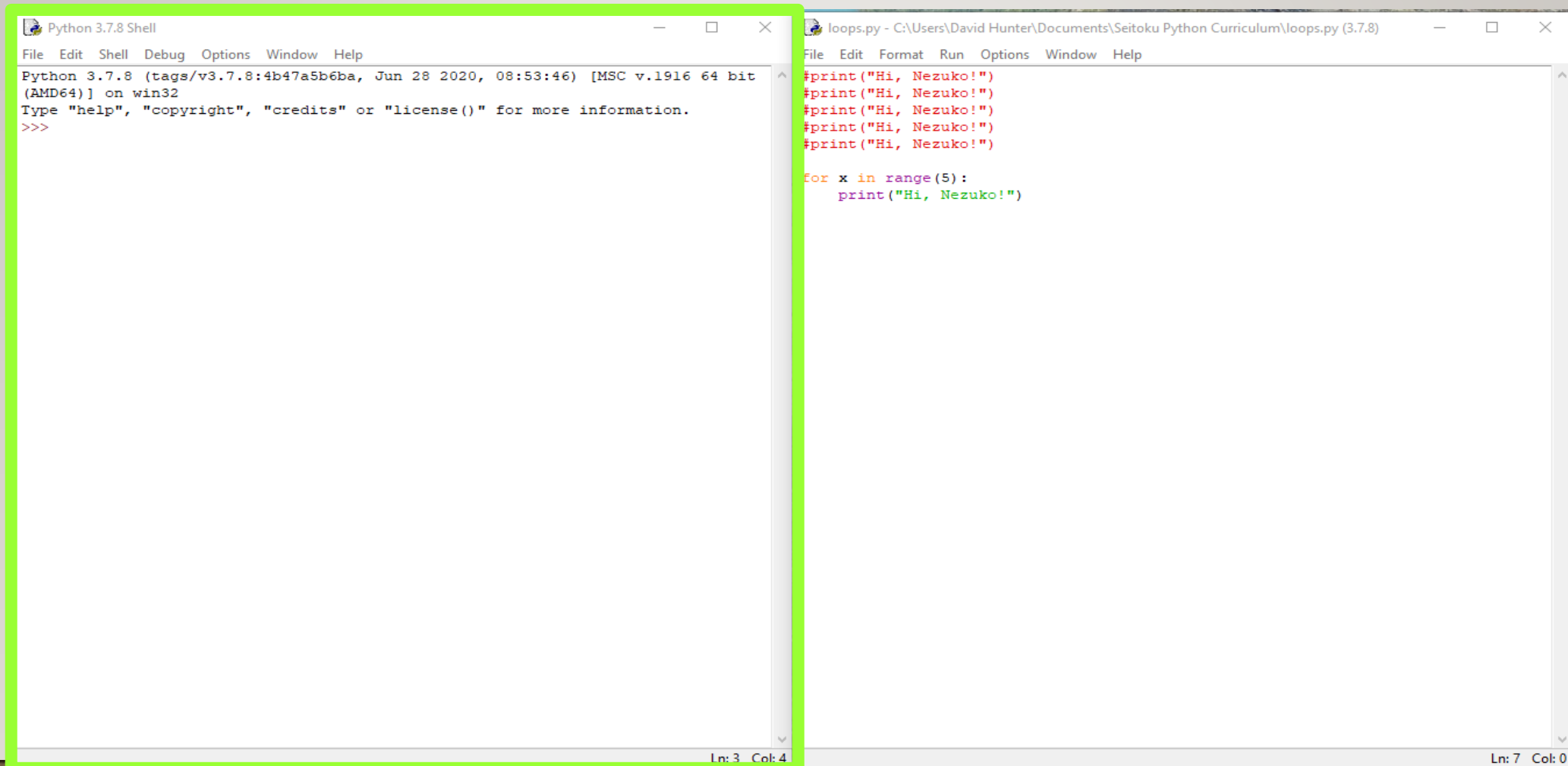
# PYTHON SHELL AND IDLE

Any printed information appears here



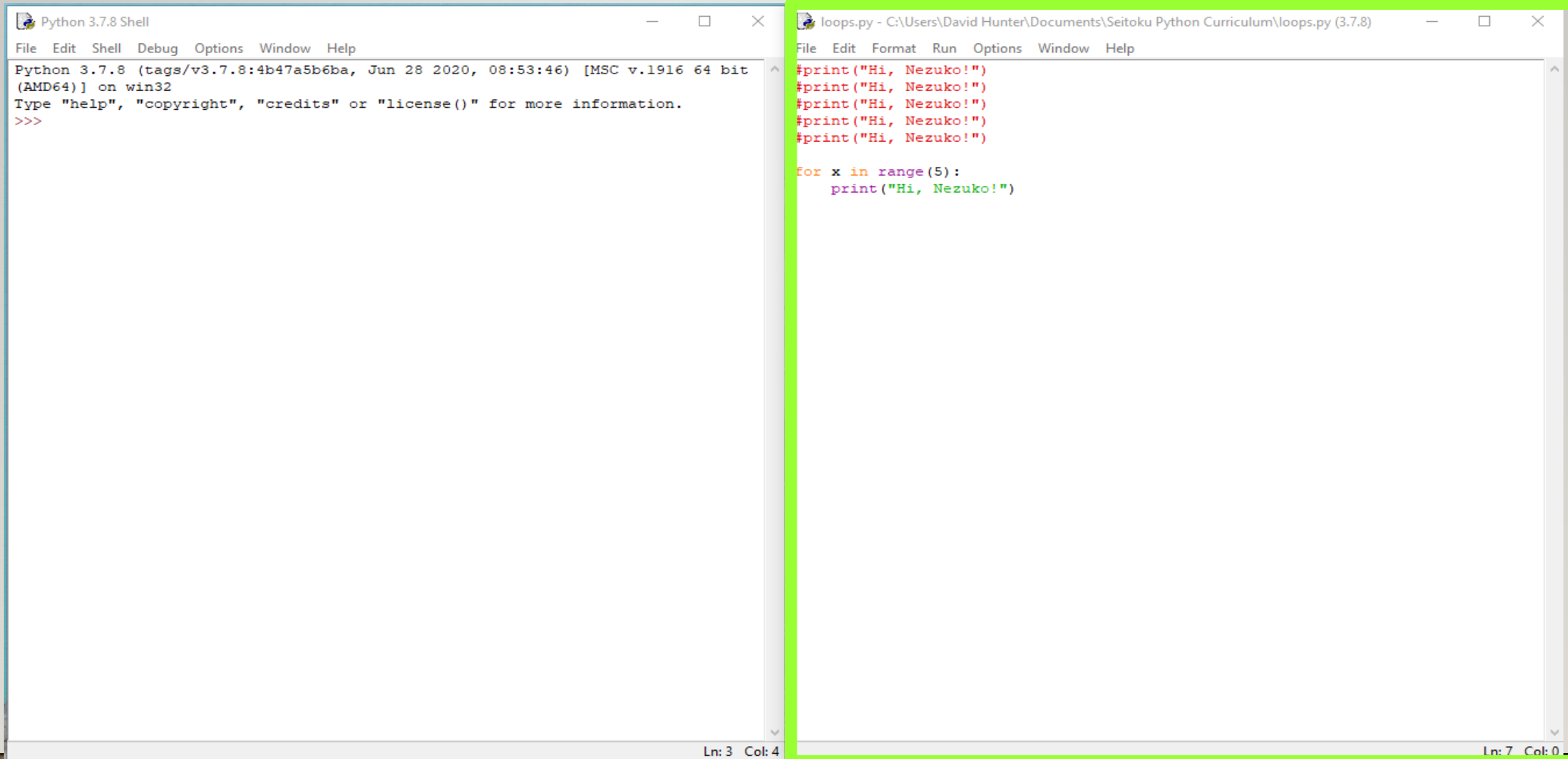
# PYTHON SHELL AND IDLE

Any errors and information about them also appear here



# PYTHON SHELL AND IDLE

This is a Python script.



```
Python 3.7.8 Shell
File Edit Shell Debug Options Window Help
Python 3.7.8 (tags/v3.7.8:4b47a5b6ba, Jun 28 2020, 08:53:46) [MSC v.1916 64 bit
(AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
```

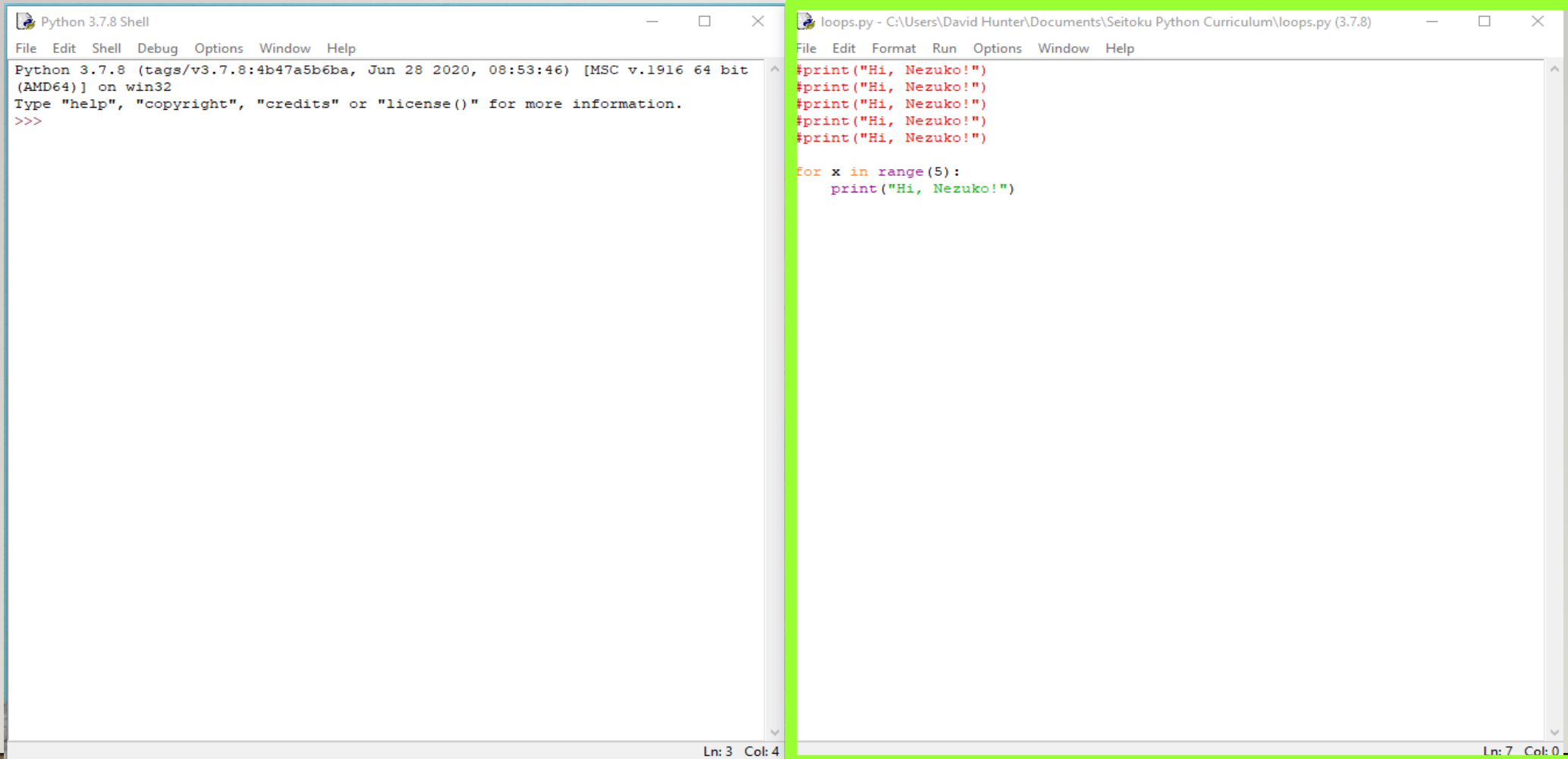
```
loops.py - C:\Users\David Hunter\Documents\Seitoku Python Curriculum\loops.py (3.7.8)
File Edit Format Run Options Window Help
#print("Hi, Nezuko!")
#print("Hi, Nezuko!")
#print("Hi, Nezuko!")
#print("Hi, Nezuko!")
#print("Hi, Nezuko!")

for x in range(5):
    print("Hi, Nezuko!")
```



# PYTHON SHELL AND IDLE

This is where we will write our programs.



# USING IDLE TO MAKE YOUR FIRST PYTHON PROGRAM

---



Open IDLE



The Python  
shell



Make a new  
file



Let's type  
together!!!

# HELLO, WORLD!

```
main()  
{  
    printf("hello, world\n");  
}
```

*Brian Kern*

Original Hello, world! Program from 1978.

This is a programming tradition (でんとう 伝統).