PYTHON IS FOR EVERYONE

Tutorial 2:

PYTHON PROGRAMMING - VARIABLES AND DATA TYPES IN GOOGLE COLAB

Jeff Gentry

@www.linkedin.com/in/jefferycharlesgentry

Objectives

- Understand what variables are and how to use them.
- Learn about different data types in Python: integers, floats, strings, and booleans.
- Practice creating and manipulating variables.

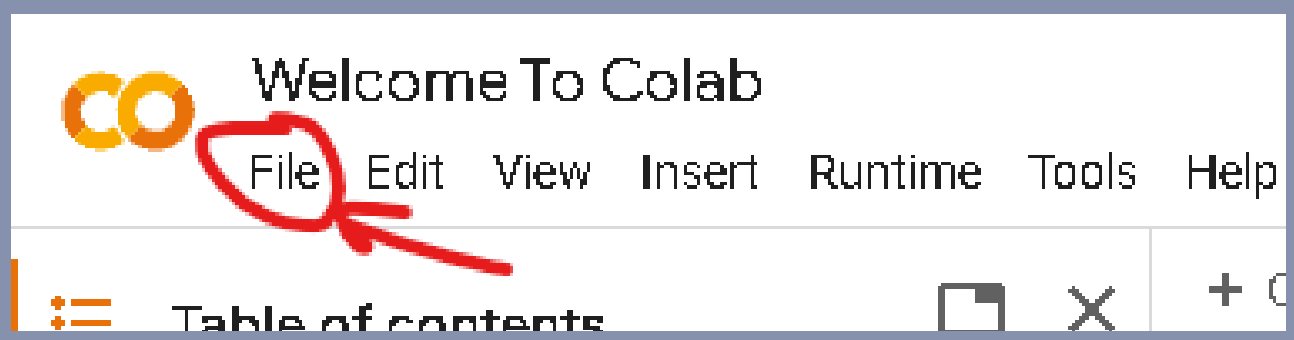
What are Variables?

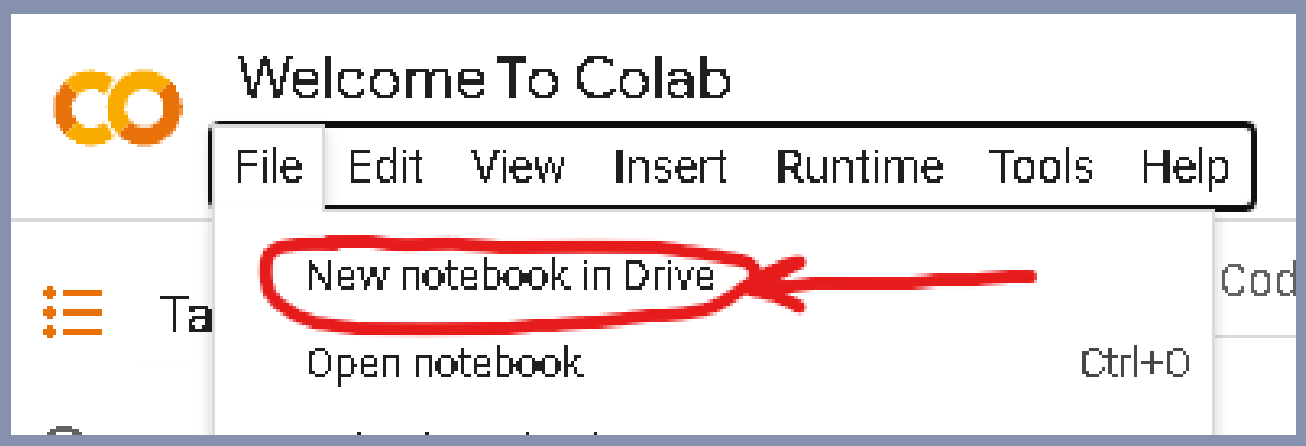
A variable is a name that refers to a value. You can think of it as a container for storing data. In Python, you can create a variable by simply assigning a value to it using the ‘=’ operator.

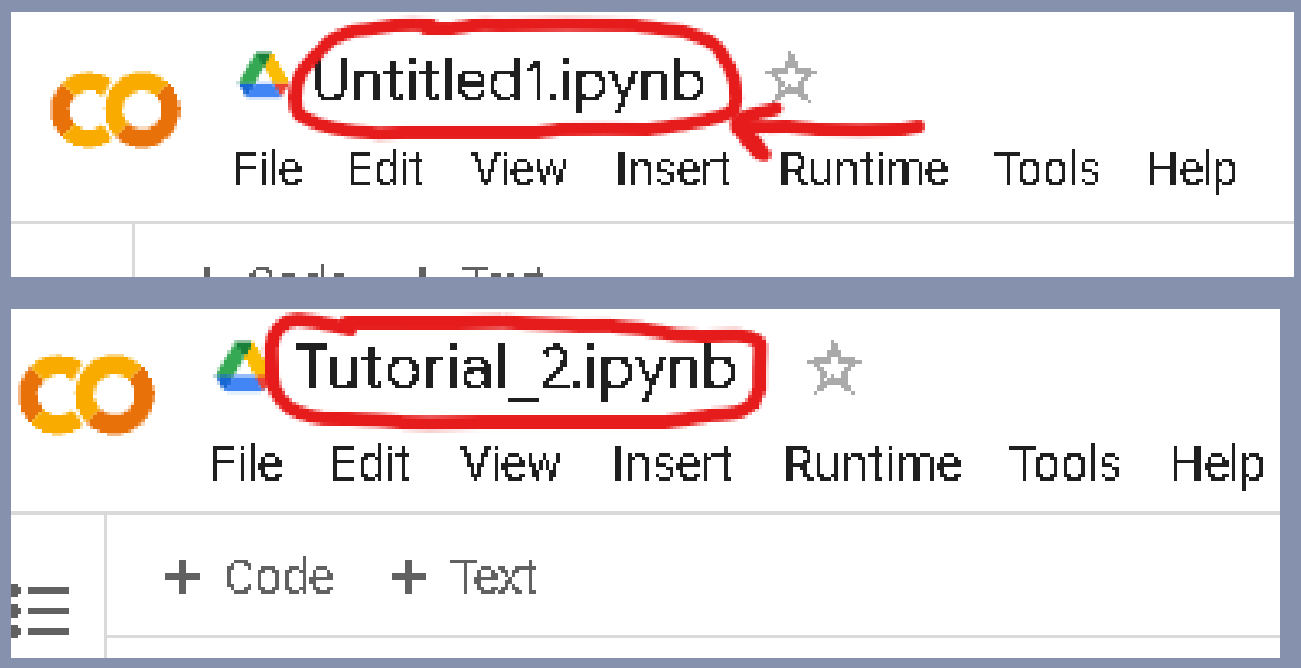
Create a New Notebook

1. **Create a New Notebook:**
    - Click on **‘File’** in the top menu.
    - Select **‘New Notebook’**.
    - A new tab will open with an untitled notebook
2. **Rename Your Notebook:**
    - Click on the title (usually “Untitled0.ipynb”) at the top left.
    - Rename it to **‘Tutorial_2.ipynb’** and press **‘Return’** or **‘Enter’**.

Create a New Notebook







Write Python Code

Add Code Cell:

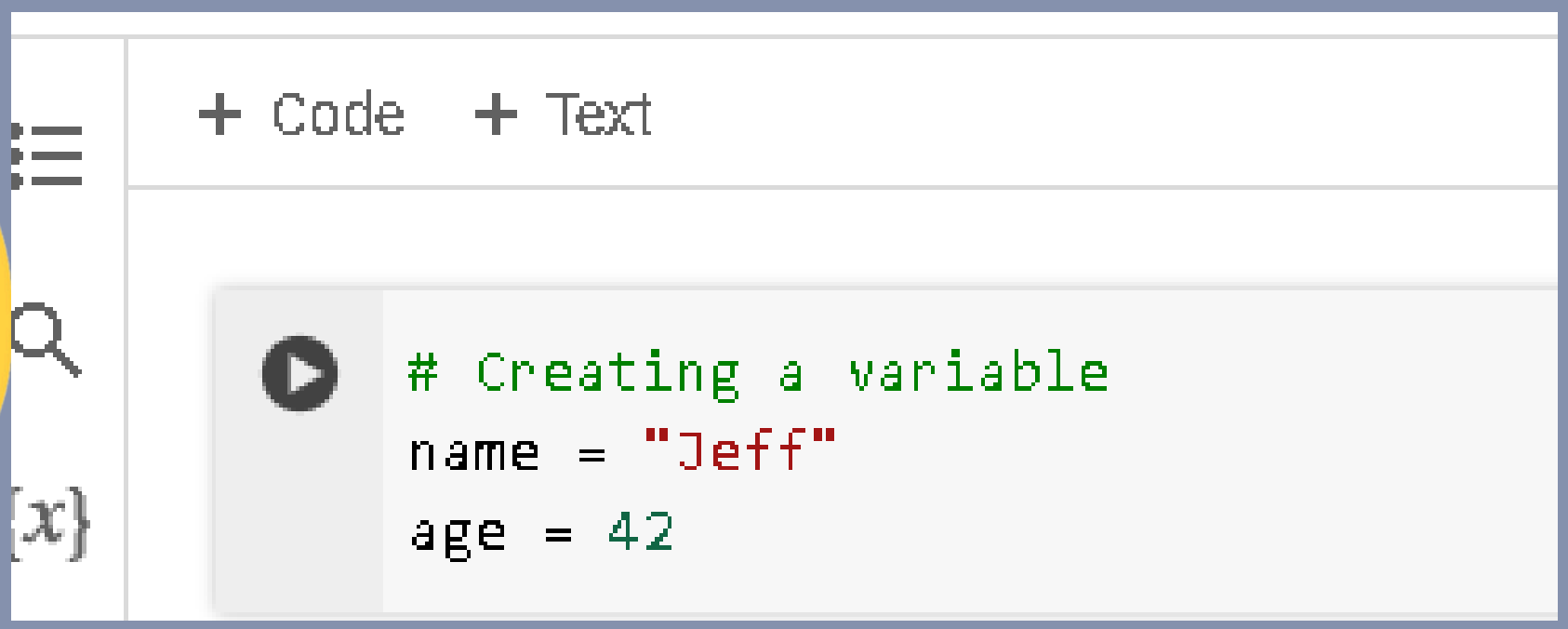
- You should see a code cell (a box with In [ ]:) where you can write your code.
- If you don’t see a code cell, click on + Code in the toolbar.

Create Python Variables

Type the Following Code:

- # Creating a variable
- name = “your name here”
- age = your age here

Note in the below example the # allows you to add comments to code and it will not run with the code



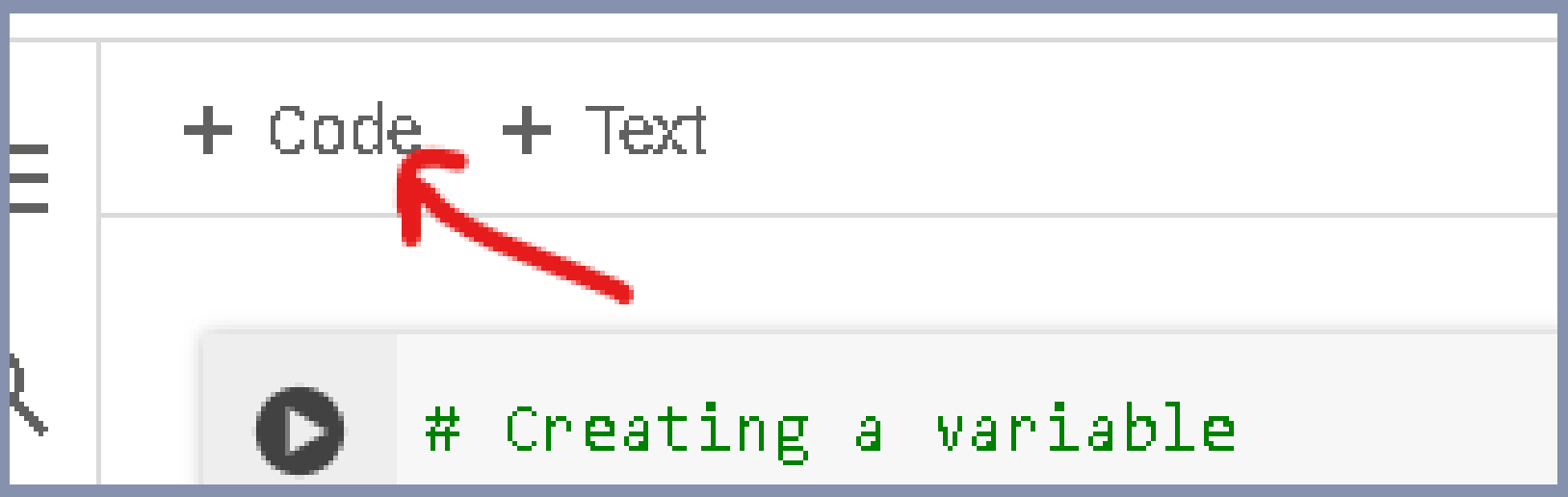
Data Types in Python

Python has several built-in data types. Here are some common ones:

1. **Integer ('int'): Whole numbers, positive or negative.**
2. **Float ('float'): Decimal numbers.**
3. **String ('str'): A sequence of characters enclosed in quotes.**
4. **Boolean ('bool'): Represents True or False.**

Create More Python Variables

Insert a code cell into the notebook



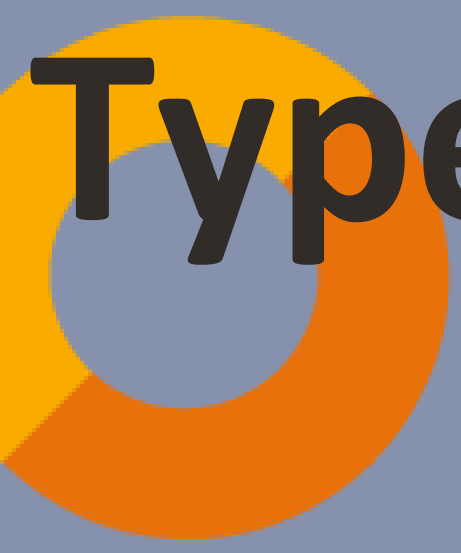
Create More Python Variables

- # Integer
- age = 42
- # Float
- height = 5.11
- # String
- name = "Jeff"
- # Boolean
- is_student = True
- # Print the variables
- print("Name:", name)
- print("Age:", age)
- print("Height:", height)
- print("Is Student:", is_student)

Create More Python Variables

```python
# Integer
age = 42

# Float
height = 5.11

# String
name = "Jeff"

# Boolean
is_student = True

# Print the variables
print("Name:", name)
print("Age:", age)
print("Height:", height)
print("Is Student:", is_student)
```

```
Name: Jeff
Age: 42
Height: 5.11
Is Student: True
```



Type Checking Python Variables

Check the type of each variable. Add a code cell as you did previously. Remember from Tutorial 1 that you execute code in a cell by clicking the ▶ in a code cell.

```
# Check the type of each variable
print("Type of age:", type(age))
print("Type of height:", type(height))
print("Type of name:", type(name))
print("Type of is_student:", type(is_student))
```

```
Type of age: <class 'int'>
Type of height: <class 'float'>
Type of name: <class 'str'>
Type of is_student: <class 'bool'>
```

Basic Operations

Again, add a code cell as you did previously.

```
# Arithmetic Operations
a = 10
b = 5

# Addition
sum_result = a + b
print("Sum:", sum_result)

# Subtraction
difference = a - b
print("Difference:", difference)

# Multiplication
product = a * b
print("Product:", product)

# Division
quotient = a / b
print("Quotient:", quotient)
```

```
Sum: 15
Difference: 5
Product: 50
Quotient: 2.0
```

String Concatenation

Concatenate strings by using a combination of what you've learned.

```
# String Concatenation
greeting = "Hello, " + name + "!"
print(greeting)
```

```
Hello, Jeff!
```

Interestingly, the variable 'name' you had already created previously in your code is utilized to create the concatenation!

Conclusion

In this tutorial, you learned about variables and data types in Python. You practiced creating variables, checking their types, and performing basic operations. Understanding these concepts is fundamental to programming in Python.

Next Steps

In tutorial 3, we can explore more fundamental concepts such arithmetic operations and operator precedence. Then, we'll work hands-on and perform basic calculations and print results.

FOLLOW ME

for more tips you didn’t know you needed

Jeff Gentry

@www.linkedin.com/in/jefferycharlesgentry