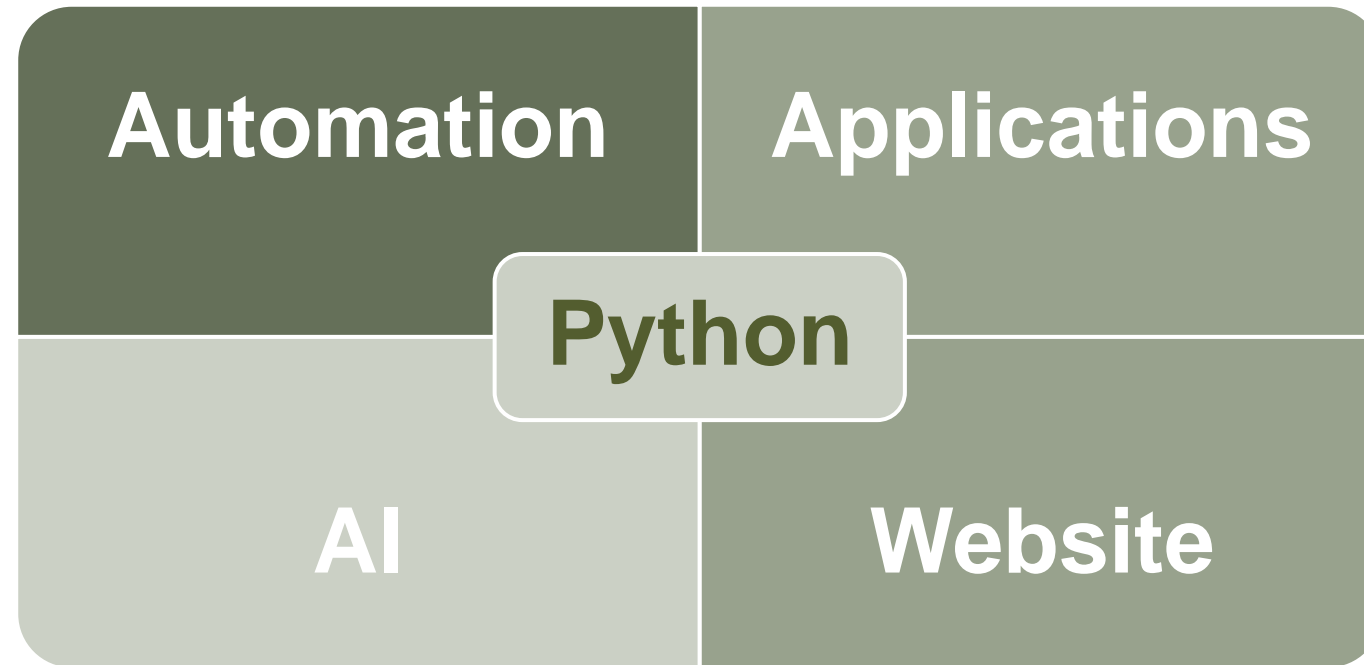


# Python Programming

Jian Zhang

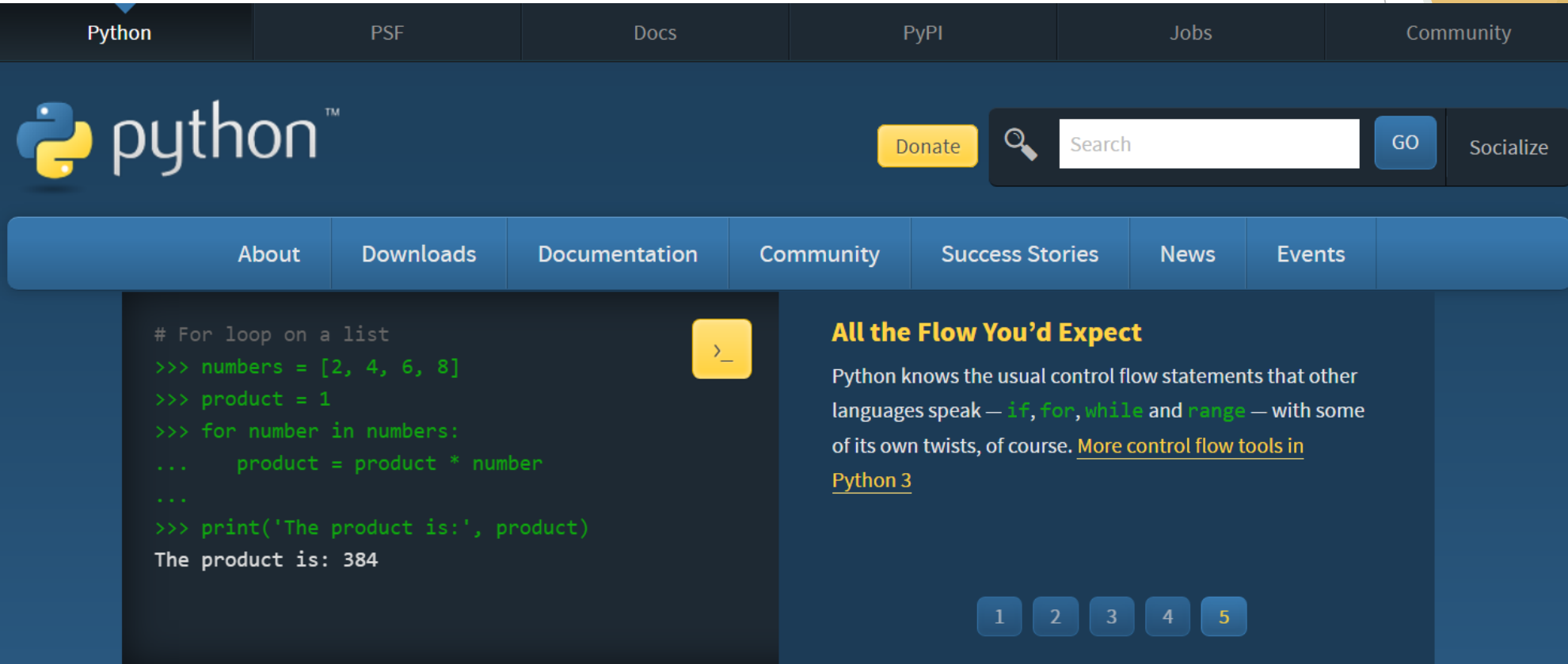
Nov. 16, 2023@PHBS

# What is Python?



# What is Python?

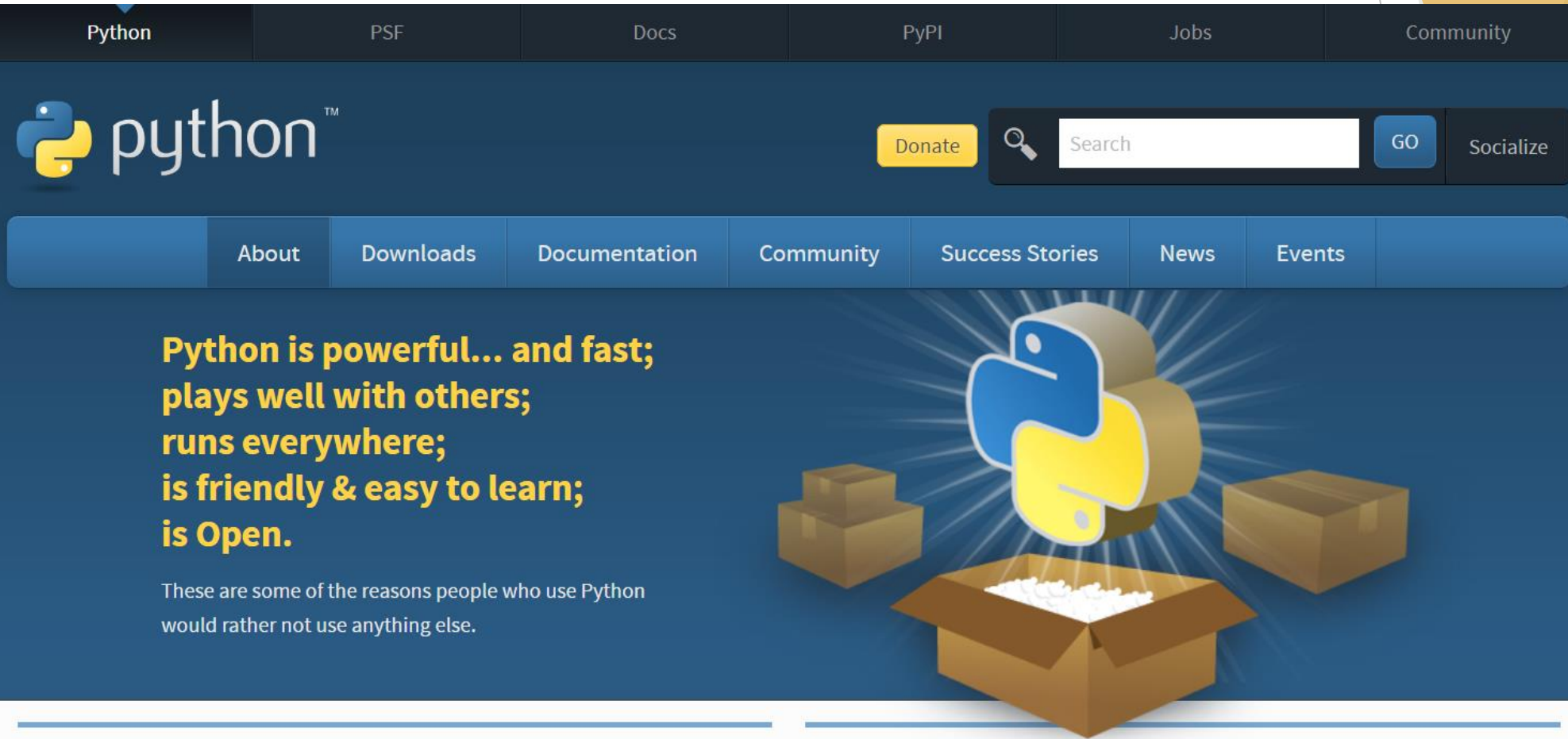
<https://www.python.org/>



Python is a programming language that lets you work quickly and integrate systems more effectively. [>>> Learn More](#)

# What is Python?

<https://www.python.org/>



## Getting Started

Python can be easy to pick up whether you're a first time programmer or you're experienced with other languages. The following pages are a useful first step to get on your way writing programs with Python!

## Friendly & Easy to Learn

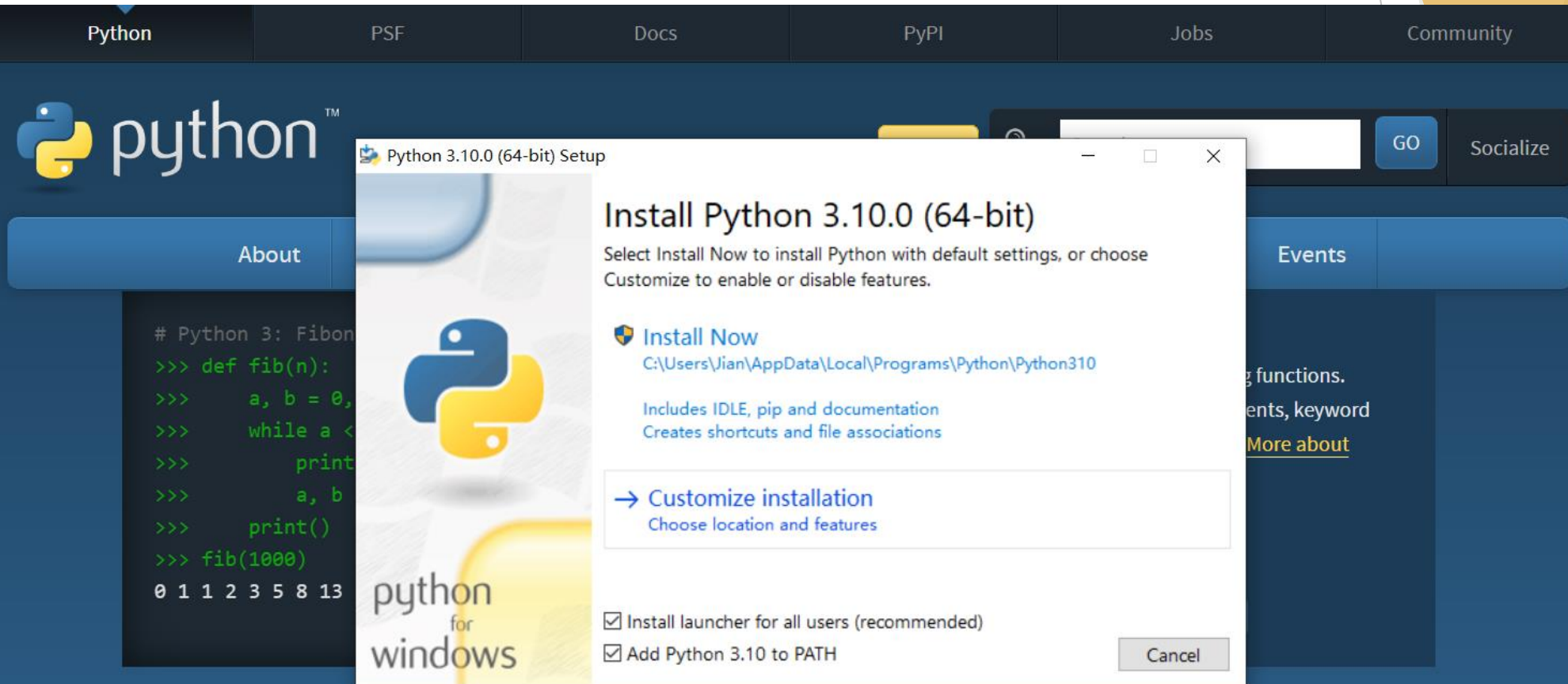
The community hosts conferences and meetups, collaborates on code, and much more. Python's documentation will help you along the way, and the mailing lists will keep you in touch

# What is Python?



Python is a programming language that lets you work quickly and integrate systems more effectively. [>>> Learn More](#)

# What is Python?



The image shows a composite of the Python website header and a Windows installation window. The website header includes a navigation bar with links: Python, PSF, Docs, PyPI, Jobs, and Community. Below this is a search bar with a 'GO' button and a 'Socialize' button. The main content area features the Python logo, an 'About' button, and a code snippet for a Fibonacci function. The installation window is titled 'Python 3.10.0 (64-bit) Setup' and offers two options: 'Install Now' and 'Customize installation'. The 'Install Now' option includes the installation path, features like IDLE, pip, and documentation, and checkboxes for installing the launcher and adding Python to the PATH. The 'Customize installation' option allows choosing the location and features. A 'Cancel' button is also present.

Python

PSF

Docs

PyPI

Jobs

Community

python™

About


```
# Python 3: Fibonacci sequence
>>> def fib(n):
>>>     a, b = 0, 1
>>>     while a < n:
>>>         print(a, end=' ')
>>>         a, b = b, a+b
>>>     print()
>>>     fib(1000)
0 1 1 2 3 5 8 13
```

python for windows

Python 3.10.0 (64-bit) Setup

Install Python 3.10.0 (64-bit)

Select Install Now to install Python with default settings, or choose Customize to enable or disable features.

 **Install Now**  
C:\Users\Jian\AppData\Local\Programs\Python\Python310  
Includes IDLE, pip and documentation  
Creates shortcuts and file associations

→ **Customize installation**  
Choose location and features

☒ Install launcher for all users (recommended)  
☒ Add Python 3.10 to PATH

Cancel

Python is a programming language that lets you work quickly and integrate systems more effectively. [>>> Learn More](#)

# Platform

<https://www.anaconda.com/>



[Products](#) ▼

[Pricing](#)

[Solutions](#) ▼

[Resources](#) ▼

[Blog](#)

[Company](#) ▼

[Get Started](#)



Individual Edition

## Your data science toolkit

With over 25 million users worldwide, the open-source Individual Edition (Distribution) is the easiest way to perform Python/R data science and machine learning on a single machine. Developed for solo practitioners, it is the toolkit that equips you to work with thousands of open-source packages and libraries.

### Anaconda Individual Edition

[Download](#) 

For Windows

Python 3.8 • 64-Bit Graphical Installer • 477 MB

Get Additional Installers



# Platform

<https://www.anaconda.com/>



## Open Source

Anaconda Individual Edition is the world's most popular Python distribution platform with over 25 million users worldwide. You can trust in our long-term commitment to supporting the Anaconda open-source ecosystem, the platform of choice for Python data science.



## Conda Packages

Search our cloud-based repository to find and install over 7,500 data science and machine learning packages. With the conda-install command, you can start using thousands of open-source Conda, R, Python and many other packages.



## Manage Environments

Individual Edition is an open source, flexible solution that provides the utilities to build, distribute, install, update, and manage software in a cross-platform manner. Conda makes it easy to manage multiple data environments that can be maintained and run separately without interference from each other.



# Platform

<https://www.anaconda.com/>



## Build machine learning models

Build and train machine learning models using the best Python packages built by the open-source community, including scikit-learn, TensorFlow, and PyTorch.

Get Started

# Platform

<https://www.jetbrains.com/pycharm/>

JET  
BRAINS

Developer Tools

Team Tools

Learning Tools

Solutions

Store



PyCharm

Coming in 2021.3

[What's New](#)

[Features](#)

[Learn](#)

[Buy](#)

[Download](#)

PC **PyCharm**

The Python **IDE**  
for Professional Developers

DOWNLOAD

Full-fledged Professional or Free Community

# Platform

<https://www.jetbrains.com/edu-products/download/#section=pycharm-edu>

Education

Products for Learning Tools for Teaching

## Get Your Educational Tool

[Java](#) [Kotlin](#) [Python](#) [Scala](#) [JavaScript](#) [C/C++](#) [Rust](#) [Go](#)



Version: 2021.2.3  
Build: 212.5457.63  
28 October 2021

[Release notes](#) ↗

[System requirements](#)

[Installation Instructions](#)

[Other versions](#)

PyCharm Edu is free & open source.

Licensed under Apache License, Version 2.0.

Download

.exe ▼

or

Install EduTools Plugin

PyCharm Edu

If you have already installed PyCharm  
Professional or Community



**Learn Python with JetBrains Academy** ↗

Learn programming by creating working applications,  
read the [JetBrains Academy guide](#) ↗ for more details.

# First Python Program

```
print("Hello World!")
```

# First Python Program

```
print("Hello World!")  
print("*" * 10)  
print('o----')  
print(' |||')  
print(5 * 10)  
print('I'm Jian Zhang')  
print("I'm Jian Zhang")
```

# Input()

```
name = input('What is your name? ')
```

# Input()

```
name = input('What is your name? ')\nprint('Hi ' + name)
```

```
name = input('What is your name? ')\nage = input('What is your age? ')\nprint(name + ' is ' + age + ' years old.')
```

# Primitive Types

```
students_count = 1000
rating = 4.99
is_published = False
course_name = "Python Programming"
print(students_count)
print(rating)
print(course_name)
print(len(course_name))
print(course_name[0])
print(course_name[-2])
print(course_name[0:5])
```



# Primitive Types

```
students_count = 1000
rating = 4.99
is_published = False
course_name = "Python Programming"
print(type(students_count))
print(type(rating))
print(type(is_published))
print(type(course_name))
print(id(rating))
print(id(students_count ))
```

# Formatted String

```
first_name = "Jian"  
last_name = "Zhang"  
full_name = first_name + " " + last_name  
print(full_name)  
full_name_formatted = f"{first_name} {last_name}"  
print(full_name_formatted)
```

# Escape Character

```
course_full_name = "Python Programing with \"Mosh\""  
print(course_full_name)  
course_full_name = "Python Programing with 'Mosh'"  
print(course_full_name)  
course_full_name = "Python Programing with \\Mosh\\"  
print(course_full_name)  
course_full_name = "Python Programing with \nMosh"  
print(course_full_name)
```

# String Methods

```
course_name_python = " python programming for beginners "  
print(course_name_python.upper())  
print(course_name_python.lower())  
print(course_name_python.title())  
print(course_name_python.find("gram"))  
print(course_name_python.replace("p", "P"))  
print("pro" in course_name_python)  
print("abc" in course_name_python)
```

# Numbers

```
x = 3
y = 3.1
z = 3 + 2j
print(10 + 3)
print(10 - 3)
print(10 * 3)
print(10 / 3)
print(10 // 3)
print(10 % 3)
print(10 ** 3)
x = x + 3
print(x)
y += 3
print(y)
print(z)
```

# Numbers

```
import math

print(round(2.9595, 2))
print(abs(-5.4))
print(math.ceil(8.2))
print(math.floor(4.9))

average = 2.9
print(f"{average:.2f}")
```

# Type Conversion

```
x = input("x: ")  
print(type(x))
```

```
y = int(x) + 5  
print(f"x: {x} ; y: {y}")
```

```
print(bool(""))  
print(bool(0))  
print(bool(None))  
print(bool(2))
```

# Quiz

What are the primitive types in Python?

```
fruit = "Apple"  
print(fruit[1])
```

```
fruit = "Apple"  
print(fruit[1:-1])
```

```
print(10 % 3)
```

```
print(bool("False"))
```



# Homework

- ▶ Install Anaconda or PyCharm and execute all the codes mentioned before.



**Questions?**