



Learning Python

PRAVEEN NAIR

Introduction to Python

1. Invented in the Netherlands, early 90s by Guido van Rossum named after Monty Python Flying Circus series
2. Open sourced from the beginning
3. Scalable, object oriented and functional from the beginning
4. Increasingly popular
5. Strong Libraries

What is Python used for?

1. Data Analysis and Machine Learning
2. Web & Desktop Application Development
3. Automation or Scripting
4. Scientific and Numeric Applications
5. Beginner-friendly programming language
6. Game Development
7. Programming Internet of Things (IoT) devices

Installing Python...

1. Visit <https://www.python.org/downloads/>
2. Click on Download Python button
3. Run the installer (make sure to tick add path checkbox)

Installing Visual Studio Code...

1. Visit <https://code.visualstudio.com/download>
2. Click on Download button
3. Run the installer

Variables

We use variables to temporarily store data in computer's memory.

price = 10 (Integer) #type(price)

rating = 4.9 (Python represent float values as 64-bit “double-precision” values so no separate type as double)

course_name = 'Python for Beginners' (String)

is_published = True (Boolean)

Data Structures – List, Tuple, Dictionary, Set, Array (A data structure is a specialized format for organizing, processing, retrieving and storing data.)

.....

Type function, multiple assignment, variable naming rule

Printing Variables

```
name="John"
```

```
print(name)
```

Receiving Input

```
name=input("Enter your name")  
print(name)
```


Multi-line String

To define a multi-line string, we surround our string with tripe quotes.

```
msg = '''  
Dear Friend,  
How are you? Hope all is well with you.  
Thanks,  
MyName  
'''  
print(msg)
```

Concatenate Strings

```
first_name = "John "  
last_name = "Smith "  
print(first_name + last_name)
```

Formatted String Literals (f-string)

```
name=input("Enter Name ")
favorite_color=input("Enter Favorite Colour ")
msg = f'{name} likes {favorite_color}'
print(msg)
```

Type Conversion

```
birth_year = input("Enter your birth year")
```

```
age = 2022 - int(birth_year)
```

```
print(age)
```

```
-----
```

```
float()
```

```
Eval()
```

Comments

```
birth_year = input("Enter your birth year")
```

```
age = 2022 - int(birth_year)
```

```
# print(age)
```

```
Print(birth_year)
```

```
-----
```

```
How to comment multiple lines?
```

Arithmetic Operations

+

-

*

/ returns a float

// returns an int

% returns the remainder of division

** exponentiation

Comparison Operators in Python

Equals: `a == b`

Not Equals: `a != b`

Less than: `a < b`

Less than or equal to: `a <= b`

Greater than: `a > b`

Greater than or equal to: `a >= b`

Logical Operators in Python

and: `(a < b) and (a < c)`

or: `(a < b) or (a < c)`

Not: `not(a > c)`

Python Escape Characters

```
txt="This is John\'s book." # \' means '  
print(txt)
```

```
txt="This is a \n dummy text." # new line  
print(txt)
```

```
txt="Name \t City \t Age" # tabspace  
print(txt)
```