



Python Basic Built-in Data Types and Variable

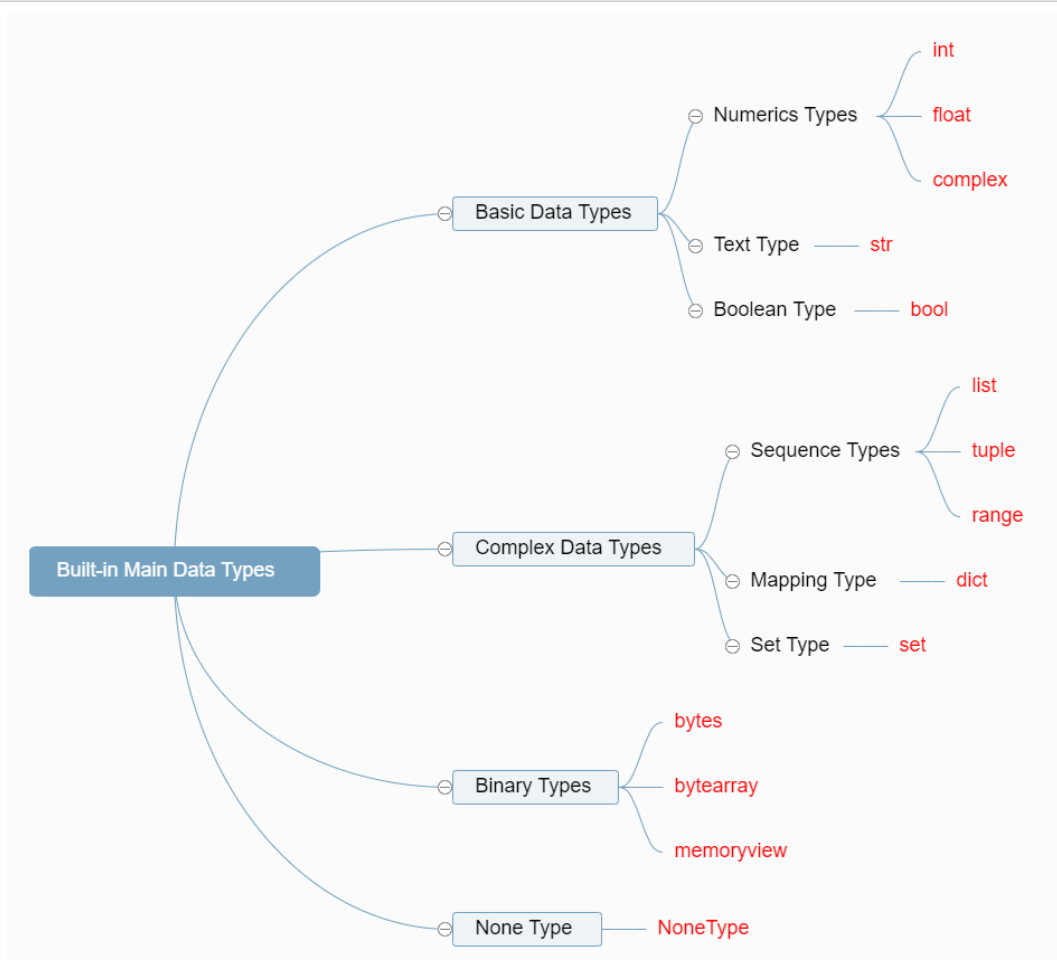
Shouke Wei, Ph.D. Professor

Email: shouke.wei@gmail.com

Objective

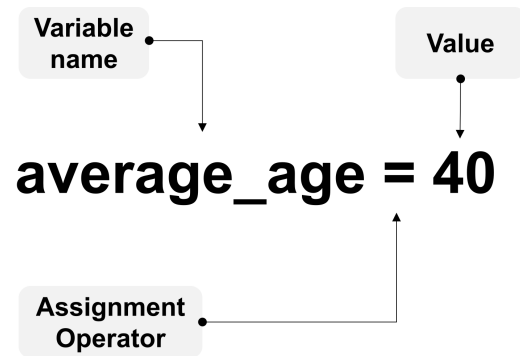
- this section will display Python Basic Built-in Data Types, Variable as well data methods

1. Basic Built-in Data Types



2. Variable

- container for storing data values



3. Examples

- Create a Student File

```
In [7]: name = 'Jack Smith'
age = 25
height = 175.5
grade = 85

A = 90
B = 80

print('Name: ',name)
print('Age: ',age)
print('Height: ',height)
print('Mean grade: ',grade)
print('Grade A: ',grade>A)
print('Grade B: ',grade>B)
```

```
Name: Jack Smith
Age: 25
Height: 175.5
Mean grade: 85
Grade A: False
Grade B: True
```

- Complex number

```
In [8]: z = 3 + 5j
print(z)
```

```
(3+5j)
```

```
In [2]: # create a complex
x = 5
y = 3

# converting x and y into complex number
z = complex(x,y);

print(z)
```

```
(5+3j)
```

```
In [3]: print (z.real)
print (z.imag)
```

```
5.0
3.0
```

4. Strings

For string, we can use single quotes, double quotes and triple quotes

```
In [4]: book = 'Jack's Python book'
```

```
File "C:\Users\Sigmund\AppData\Local\Temp\ipykernel_820\930797896.py", line 1
    book1 = 'Jack's Mathatics'
            ^
SyntaxError: invalid syntax
```

```
In [5]: book = "Jack's Python Book"
```

```
In [6]: print(book)
```

Jack's Python Book

```
In [10]: # Triple Quotes for Multi-Line Strings
```

```
triple_string1 = """We usually use triple quotes for a longer string or a document. We can also use
or double triple quotes..."""

triple_string2 = '''Triple quote string is usually used for a multiline comment and document,
which is place at beginning of a script to show the author, creation data, and what the code are...

print(triple_string1)
print(triple_string2)
```

We usually use triple quotes for a longer string or a document. We can also use single or double triple quotes...

Triple quote string is usually used for a multiline comment and document, which is place at beginning of a script to show the author, creation data, and what the code are...

```
In [13]: """
Author: Shouke Wei
Data: May 7, 2021
The following code is to show print function."""

print("Hello Python.")
```

Hello Python.

5. Methods

(1) data type

```
In [7]: name = 'Jack Smith'
grade = 85
height = 175.5
z = 3 + 5j
```

```
In [10]: print(type(name))
print(type(grade))
print(type(height))
print(type(z))
```

```
<class 'str'>
<class 'int'>
<class 'float'>
<class 'complex'>
```

(2) String Length

```
In [11]: print(len(name))
```

```
10
```

(3) Type Conversions

```
In [13]: float(grade)
```

```
Out[13]: 85.0
```

```
In [8]: int(height)
```

```
Out[8]: 175
```

```
In [9]: str(grade)
```

```
Out[9]: '85'
```

```
In [15]: bool(grade)
```

```
Out[15]: True
```