

# **Python from Scratch**

## **Python Data Types**

### **Lesson 4**

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# Python Data Types

## Built-in Data Types

In programming, data type is an important concept.

Variables can store data of different types, and different types can do different things.

Python has the following data types built-in by default, in these categories:

Text Type:	<code>str</code>
Numeric Types:	<code>int</code> , <code>float</code> , <code>complex</code>
Sequence Types:	<code>list</code> , <code>tuple</code> , <code>range</code>
Mapping Type:	<code>dict</code>
Set Types:	<code>set</code> , <code>frozenset</code>
Boolean Type:	<code>bool</code>
Binary Types:	<code>bytes</code> , <code>bytearray</code> , <code>memoryview</code>
None Type:	<code>NoneType</code>

## Getting the Data Type

You can get the data type of any object by using the `type()` function:

### Example

Print the data type of the variable x:

```
x = 5
print(type(x))
```

## Setting the Data Type

In Python, the data type is set when you assign a value to a variable:

Example	Data Type
<code>x = "Hello World"</code>	str
<code>x = 20</code>	int
<code>x = 20.5</code>	float
<code>x = 1j</code>	complex
<code>x = ["apple", "banana", "cherry"]</code>	list
<code>x = ("apple", "banana", "cherry")</code>	tuple
<code>x = range(6)</code>	range
<code>x = {"name" : "John", "age" : 36}</code>	dict
<code>x = {"apple", "banana", "cherry"}</code>	set
<code>x = frozenset({"apple", "banana", "cherry"})</code>	frozenset
<code>x = True</code>	bool
<code>x = b"Hello"</code>	bytes
<code>x = bytearray(5)</code>	bytearray
<code>x = memoryview(bytes(5))</code>	memoryview
<code>x = None</code>	NoneType

## Setting the Specific Data Type

If you want to specify the data type, you can use the following constructor functions:

Example	Data Type
<code>x = str("Hello World")</code>	str
<code>x = int(20)</code>	int
<code>x = float(20.5)</code>	float
<code>x = complex(1j)</code>	complex
<code>x = list(("apple", "banana", "cherry"))</code>	list
<code>x = tuple(("apple", "banana", "cherry"))</code>	tuple
<code>x = range(6)</code>	range
<code>x = dict(name="John", age=36)</code>	dict
<code>x = set(("apple", "banana", "cherry"))</code>	set
<code>x = frozenset(("apple", "banana", "cherry"))</code>	frozenset
<code>x = bool(5)</code>	bool
<code>x = bytes(5)</code>	bytes
<code>x = bytearray(5)</code>	bytearray
<code>x = memoryview(bytes(5))</code>	memoryview

## Test Yourself With Exercises

### Exercise:

The following code example would print the data type of x, what data type would that be?

```
x = 5  
print(type(x))
```