

# Python from Scratch

## Python Casting

### Lesson 6

- Python Casting
- Specify a Variable Type
- Constructor functions
- `int()`
- `float()`
- `str()`

## Python Casting

### Specify a Variable Type

There may be times when you want to specify a type on to a variable. This can be done with casting. Python is an object-orientated language, and as such it uses classes to define data types, including its primitive types.

**Casting in python is therefore done using constructor functions:**

- `int()` - constructs an integer number from an integer literal, a float literal (by removing all decimals), or a string literal (providing the string represents a whole number)
- `float()` - constructs a float number from an integer literal, a float literal or a string literal (providing the string represents a float or an integer)
- `str()` - constructs a string from a wide variety of data types, including strings, integer literals and float literals

## Example

### Integers:

```
x = int(1)    # x will be 1
y = int(2.8)  # y will be 2
z = int("3")  # z will be 3
```

## Example

### Floats:

```
x = float(1)      # x will be 1.0
y = float(2.8)    # y will be 2.8
z = float("3")    # z will be 3.0
w = float("4.2")  # w will be 4.2
```

## Example

### Strings:

```
x = str("s1") # x will be 's1'
y = str(2)    # y will be '2'
z = str(3.0)  # z will be '3.0'
```