Intro To Python

Enes Kemal Ergin

Outlines of the Day

- Numbers in Python
- Math Operations
- Designing our own methods (Functions)

Number Types

- Examples of Integer types are: -1, 2,12345,-5678
- Examples of Float types are: 1.2, 0.2, -8.9, 2.0
- Also there are complex numbers but we don’t cover it here in this course.

Math Operations

-	Negation	-5	-5
+	Addition	11 + 3.1	14.1
-	Subtraction	5 - 19	-14
*	Multiplication	8.5 * 4	34.0
/	Division	11 / 2	5
/	Division(Float)	11.0/2.0	5.5
%	Remainder	8.5 % 3.5	1.5
**	Exponentiation	2 ** 5	32

- Hand-on activity: 4

Math module

- Python has some modules built-in and ready for you to use. math is one of them.
- You can get more info about the module from this link:
- https://docs.python.org/2/library/math.html

Functions from Python

- Python comes with many *built-in functions* that perform common operations.

  abs(-9) # returns the absolute value of the number

  9

  abs(3.3)

  3.3

- Both of them is same function but one worked one did not because there is a condition statement in the function which checks if given number is negative or not.
- We can also call functions inside other functions like

  pow(abs(-2), abs(5)) : Takes the power of numbers

  32

- Hands-on activity: 5

Defining our own Functions

- The built-in functions are useful but pretty generic.
- Often there aren't built-in functions that do what we want, such as calculate mileage or play a game of cribbage.
- Let's have a covert_to_celcius function
- Write this into your computer convert_to_celcius(212),
- What did you get? 100, or something else…

Functions (Cont'd)

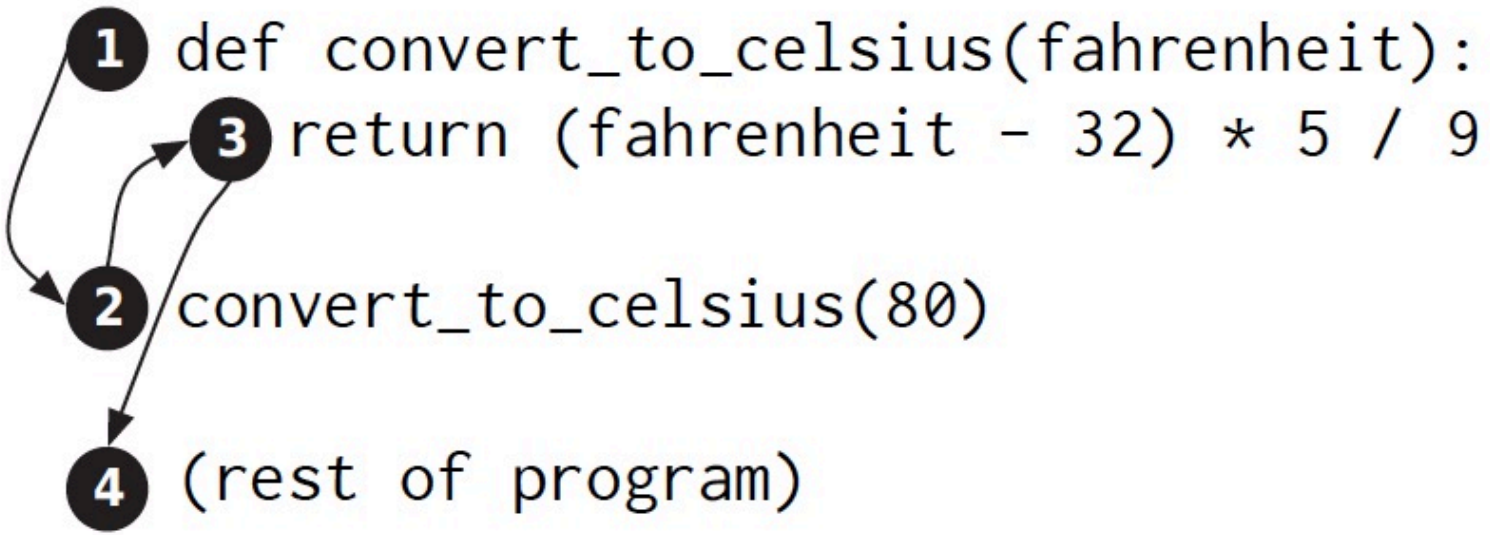
- You get an error because we did not define a function yet.

- Here is the basic syntax of functions:

```
def <<function name>>(<<parameters>>):
        <<statements>>
        return <<expression>>
```

Functions (Cont'd)

- Let's look at the convert_to_celcius() function



- Hands-on activity: 6

Question

- def square(num):
    """ (number) -> number
    Return the square of num.
    """

```
>>> square(3)
9
```

Please complete this function.

To Do

- Go to GitHub page and read the Function Design Recipe. We will follow this recipe when we create more functions later.
- Go to Github page and see the assignments for today in Week 1 Day 3
- There will be extra work page as well in the GitHub for those of you who wants to practice more.