Python Programming Basics

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- vanderbi.lt/codegraf

Assignment to variables

Simple object types

- string literals. Enclose in quotes. Examples:
  "lol", **'bye bye, birdie'**, **"can't"**
  special characters with backslash: **'\n'**

- number literals (no quotes). Examples:
  35
  0.999
  6.02

- boolean (no quotes):
  True or **False**

Assignment to a variable

- The equals sign (=) assigns a value to a variable
- It's like a left arrow: ⬅

```
user_name = "smithjr"
is_door_open = False
eulers_number = 2.7182818

user_name = last_login_name
sum = number_widgets + 3
```

- Variables can store many kinds of objects (not just simple ones like numbers and strings)
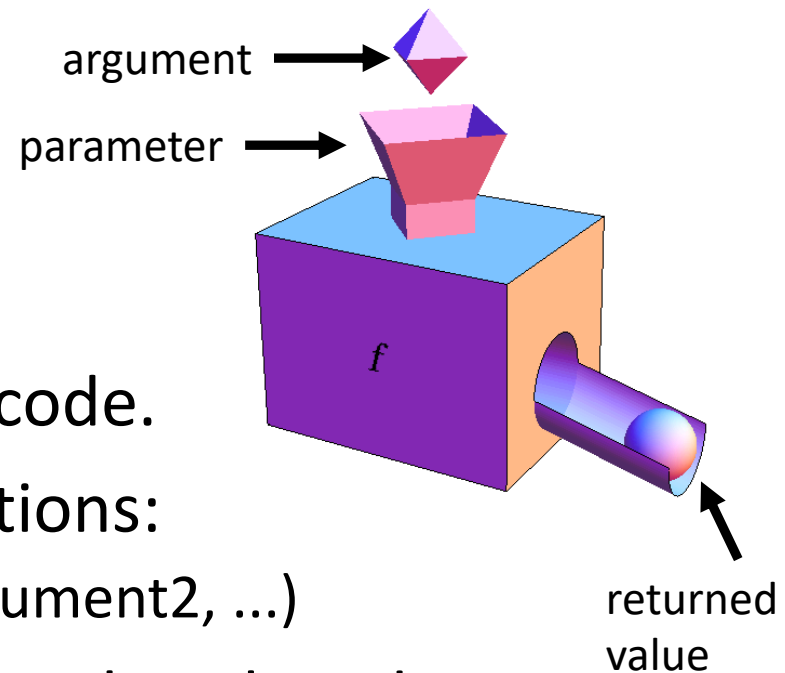
Object name recommendations

- Be descriptive (what the object is or does)
- snake_case is specified by PEP 8:
  - `ordinary_relational_processes`
- camelCase is frequently used. Examples:
  - `bookList`, `alphabetizeParticipants` (lower CC for variables, functions)
  - `DocumentDescription`, `PageHeader` (upper CC for classes)
- Don't ever put spaces in any kind of name, even if you can get away with it.

Build-in functions

Functions

argument

parameter

f

returned
value

- A function defines a block of code.

- We pass arguments into functions:
  - functionName(argument1, argument2, ...)

- It's good to name functions by what they do. Example:

  my_latte = make_latte(beans, milk, water)

- Functions can be:
  - **built-in ✓**
  - defined by you in your code
  - defined by somebody else in a module

Image: Nykamp DQ, "Function machine f." From Math Insight. http://mathinsight.org/image/function_machine_f CC BY-NC-SA

Function behavior

- Functions can have one, zero, or many arguments

- Examples:

  `input('How are you? ')` **one argument**

  `print()` **no arguments**

  `max(2, 5, 0)` **several arguments separated by commas**

- Functions can:

  - return a value (to be printed or assigned)

  `response = input('Enter your number: ')`
  `print(type('word'))`

  - return nothing (DO something rather than return something)

  `print('I am', number, 'years old.')`

Object types

Operations

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