
Modules, Functions, Comparators, and Lists

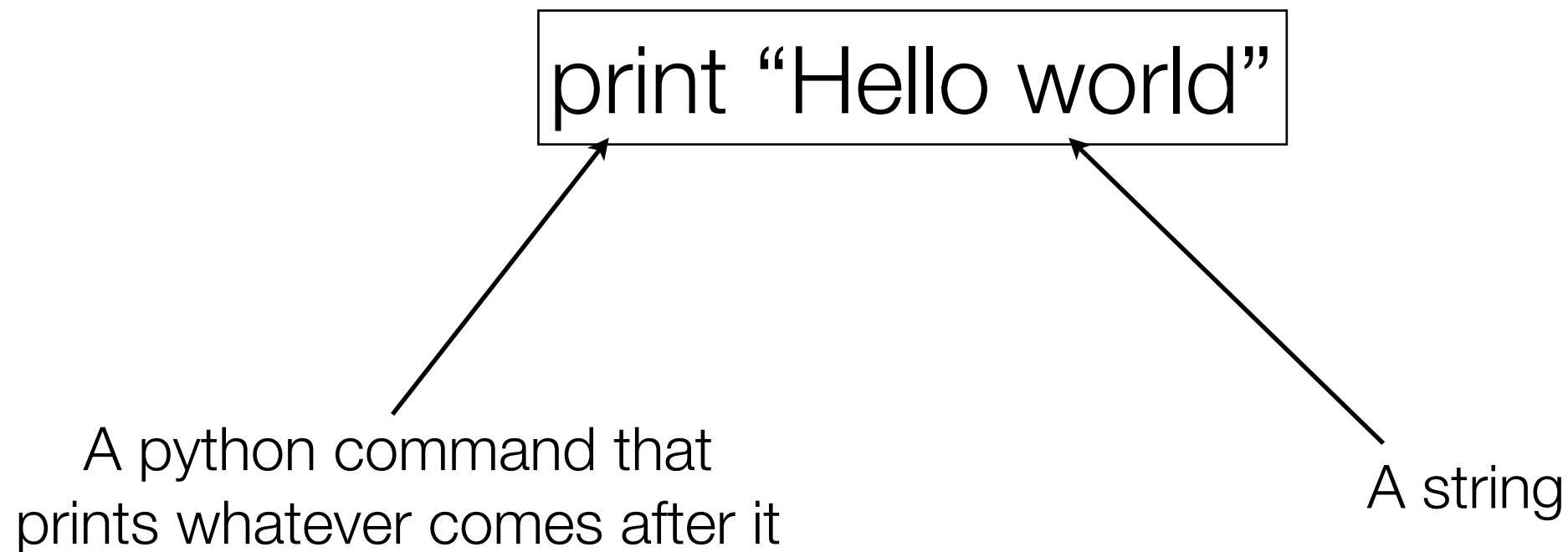
Lecture 7 - COMP 364

February 1, 2010, updated 2012

Derek Ruths

Our first python program

In a normal text file:



Then run it with by typing `python <filename>`

Modules

- Python keeps things organized in different places called “modules”
- You tell python that you want to use things in a given place by *importing* a module. Some important & useful modules
 - *sys*: system-specific information like command arguments
 - *sys.argv* are the command arguments given to your script
 - *os*: operating-system specific things
 - *os.name* is the name of your operating system
- To bring a module into your python code, type “*import <module name>*”

```
import sys
print sys.argv
```

Lists: a container

- Contain multiple objects (in order)
 - *last_names = ['Smith', 'Singer', 'Smith']*
- Can contain objects of different types
 - *x = ['hello', 2, True, 2.5]*
- Getting contents out by index: *x[0]*
- Question: *sys.argv* is a list. How would you print out the first argument given to your program?

Comparators

- Equality: $x == y$
 - Is True if x and y are equal, False otherwise
- Inequality: $x != y$
 - Is True if x and y are not equal, False otherwise
- Some other operators:
 - $x > y$
 - $x >= y$
 - $x < y$
 - $x <= y$

Comparator practice

- What are the results of these different comparisons?
 - $2 == 3$
 - `'hello' == "hello"`
 - `'x' < 'y'`
 - $2 < 2.2$
 - $2 == 2.0$
 - `True != False`

Functions

- Functions perform an action and, sometimes, return a result value. Python provides **many** functions, but we will also learn how to define our own (later).
- Functions have the format:
 - `<function name>(<argument1>,<argument2>,...,<argument N>)`

```
import os
print os.getlogin()
```

```
import os
os.chdir('..')
print os.getcwd()
```

Exercise: write a program that tests whether its first and second arguments are equal