CS1110 Spring 2018 Announcements

Check course page for announcements!
http://www.cs.cornell.edu/courses/cs1110/2018sp

ENGRG 1010. AEW workshops still space
– can enroll through Student Center
- 1-credit S/U course
- 2-hour weekly workshop
- work on related problem sets

Full? Or need a different time?
https://tinyurl.com/aew-request

2

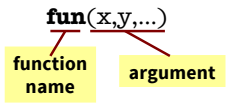
Things to Do Before Next Class

- Read Sections 3.4-3.11
- If you haven't already:
  - install Anaconda Python & Komodo on your machine
  - **play** around with python a bit!

3

Function Calls

- Python supports expressions with math-like functions
  - A function in an expression is a **function call**
  - Will explain the meaning of this later
- Function expressions have the form:



- Some math functions built into Python:
  - `round(2.34)`
  - `max(a+3,24)`

Arguments can be any expression

4

Modules

- "Libraries" of functions and variables
- To access a module, use the `import` command:
  `import` *<module name>*
- Can then access functions like this:
  <module name>.*<function name>*(*<arguments>*)
- **Example**:

```
>>> import math
>>> math.cos(2.0)
-0.4161468365471424
```

7

Module Variables

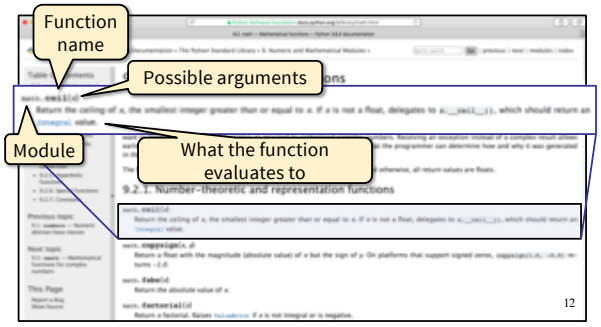
- Modules can have variables, too
- Can access them like this:
  <module name>.*<variable name>*
- **Example**:

```
>>> import math
>>> math.pi
3.141592653589793
```

9

A Closer Reading of the Python Documentation

https://docs.python.org/3/library/math.html



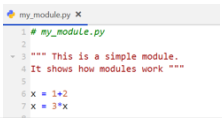
12

Interactive Shell vs. Modules

Python Interactive Shell

- Type python at command line
- Type commands after >>>
- Python executes as you type

Module



- Written in text editor
- Loaded through import
- Python executes statements when import is called

Section 2.4 in your textbook discusses a few differences

my_module.py

Module Text

```
# my_module.py
"""This is a simple module.
It shows how modules work"""

x = 1+2
x = 3*x
```

Single line comment (not executed)

Docstring (note the Triple Quotes) Acts as a multi-line comment Useful for *code documentation*

Commands Executed on import

You Must import

```
C:\> python
>>> import my_module
>>> my_module.x
9
```

```
C:\> python
>>> my_module.x
Traceback (most recent call last):
  File "<stdin>", line 1, in <module>
NameError: name 'my_module' is not defined
```


Dangers of Importing Everything

```
>>> e = 12345
>>> from math import *
>>> e
2.718281828459045
```

e was overwritten!

Modules vs. Scripts

Module	Script
• Provides functions, variables	• Behaves like an application
• import it into Python shell	• Run it from command line

Files look the same. Difference is how you use them.

Next Time: Defining Functions

- Today we created a module with a *variable*
- Have not discussed how to make a *function*
- **Example**:

```
>>> import math
>>> math.cos(2.0)
-0.4161468365471424
```

we want to make functions like this