CSC 111
Introduction to Computer Science

Dominique Thiebaut
Spring 2015

Dominique Thiébaut
dthiebaut@smith.edu
Today:

- Class Web Page: http://tinyurl.com/1112015
- Syllabus
- Piazza
- Moodle
- Python & Idle
- Waiver forms & Registration
Syllabus

- http://tinyurl.com/1112015
- http://cs.smith.edu
- faculty
- D. Thiebaut
- more info
Please answer the survey!
CSC111: Amount of Work

Level of Difficulty vs. Semester

D. Thiebaut, Computer Science, Smith College
CSC111: Amount of Work

Level of Difficulty vs. Semester

Your level
This week…

Level of Difficulty

Semantic

Your level
Goals for this Week

- Learn how to use **Idle**
- Write simple programs that use variables, for loops, and output information
- **Install** Python and Idle on laptop (optional)
- Learn how to **submit** Python programs to Moodle (lab+homework)
- Do **Lab #1** and start on **Homework #1**
Rule for Laptop Use in Class

• Laptops *welcome* for note-taking, accessing class Web page, and for running Python programs

• All other use is *forbidden*
Reading

• Read **Chapter 1** in John Zelle's *Python Programming*, up to Section 1.7 included
What is a Programming language?
Important Concepts…

• **Syntax and keywords**
  
  and del from not while as elif global or with assert else if pass yield break except import **print** class exec in raise continue finally is return **def** for lambda try

• **Algorithm**

• Python is an **interpreted** language
Interpreted vs. Compiled vs. YouTube
An Example Program
# A simple program taken from Zelle, Chapter 1
# D. Thiebaut

def main():
    print("This program illustrates a chaotic function")
    x = eval(input("Enter a number between 0 and 1: "))
    for i in [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]:
        x = 3.9 * x * (1 - x)
    print(x)

main()
# A simple program taken from Zelle, Chapter 1
# D. Thiebaut

def main():
    print("This program illustrates a chaotic function")
    x = eval(input("Enter a number between 0 and 1: "))
    for i in [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]:
        x = 3.9 * x * (1 - x)
    print(x)

main()
Integrated Development Environment = IDLE
Integrated Development Environment = IDLE
Integrated Development Environment = IDLE (MAC)
Integrated Development Environment = IDLE

(WINDOWS)
Registering Wait-Listed Students

- If you are already registered, you can leave!
- Priority rule for wait-listed:
  - Max number per lab section: 25 students
  - 1) EGR majors (CSC111 required)
  - 2) Follow natural order in wait-list
We stopped here last time...
Meet the CSC111 support staff:

Dave Marshall, Lab Instructor

Galen Long, Head TA
Beginning of the Semester...
Brief Review

• Python
• Language
• Syntax
• Sequence, Instructions
DEMO TIME!

# A simple program taken from Zelle, Chapter 1
# D. Thiebaut

def main():
    print( "This program illustrates a chaotic function" )
    x = eval( input( "Enter a number between 0 and 1: " ) )
    for i in [ 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 ]:
        x = 3.9 * x * ( 1 - x )
    print( x )

main()
Concepts to Cover in Demo

• Console vs. Edit window

• Variables
  • numbers: integers and floats
  • text: strings of characters

• print function
Demo Programs To Play With…

```python
age = 20
year = 2015
yearBorn = year - age

print("you are", age)
print("you were born in", yearBorn)

name = "Alex"
college = "Smith College"
print(name, "goes to", college)

for name in ["Lea Jones", "Julie Fleur", "Anu Vias"]:
    print(name)
    print("———")
```
Demo Programs To Play With… (cont’d)

```python
for name in [ "Lea Jones", "Julie Fleur", "Anu Vias" ]:
    print( name, len( name ) )
```

```python
print( "hello" * 4 )
print( "-" * 10 )
greetings = "hello"
dash = "-"
print( greetings * 4 )
print( dash * 10 )
greetings = "hello"
longGreetings = greeting * 4
print( greetings )
print( longGreetings )
```
for name in [ "Lea Jones", "Julie Fleur", "Anu Vias" ]:
    bar = len( name ) * "-"
    print( name )
    print( bar )

print( "hello" * 4 )
print( "-" * 10 )

greetings = "hello"
dash = "-"
print( greetings * 4 )
print( dash * 10 )

greetings = "hello"
longGreetings = greeting * 4
print( greetings )
print( longGreetings )
Registering Wait-Listed Students

- Status as of 1/28/15
  (R=registered, NS=needs signature, WL=wait-listed)

- **Lab 01**: W 1-3: 21 R + 2 WL
- **Lab 02**: Th 1-3: 24 R + 1 WL (?)
- **Lab 03**: Th 3-5: 24 R + 4 WL
- **Lab 04**: W 3-5: 16 R + 0 WL
We stopped here last time...
Registration Update

• Should be able to absorb wait-listed students

• No section transfer between Labs 1, 2, or 3, unless you find somebody to transfer the other way

• Many seats left in Section 4 (Wed 3-5)
Plan

Review of the lab

Introduction to Homework #1

def block

Demo

Something fun…
Lab 1 Q&A
def greet(person):
    print(person)
    print("How are you?"

greet("John")
greet("Emily")
greet("Lujun")
Something Fun…
Facial recognition in movies…

NCIS New Orleans "One eye and a pimple" http://youtu.be/_epXpbICzeg
Practice Python!
Beginning of the Semester
AFTER ONE SEMESTER
Variables

age
Variables

age = 23
Variables

age = 23

assignment
Variables

"Smith"

name = "Smith"

assignment
Variables

rate = 21.34

assignment
Variables & Expressions

age = 23
newValue = 10
Variables & Expressions

age = 23
newValue = 10
age = newValue
Variables & Expressions

\[
\begin{align*}
\text{age} &= 23 \\
\text{newValue} &= 10 \\
\text{age} &= \text{newValue}
\end{align*}
\]
Variables & Expressions

age = 23
newValue = 10
age = newValue
age = age + 2
Variables & Expressions

age = 23
newValue = 10
age = newValue
age = age + 2
Variables & Expressions

10 + 2

age = 23
newValue = 10
age = newValue
age = age + 2
Variables & Expressions

$10 + 2 = 12$

age = 23
newValue = 10
age = newValue
age = age + 2
Variables & Expressions

10 + 2 = 12

age = 23
newValue = 10
age = newValue
age = age + 2
Exercise

\[
a = 10 \\
b = 20 \\
c = 30 \\
\]

\[a = b \quad \# a = ?\]
Exercise

a = 10
b = 20
c = 30

a = b  # a = 20
b = a  # a = ?  b = ?
Exercise

a = 10
b = 20
c = 30

a = b  # a = 20
b = a  # a = 20, b = 20
C = c * 2  # c = ?
Exercise

\[
\begin{align*}
a &= 10 \\
b &= 20 \\
c &= 30 \\
a &= b & \quad \text{# } a &= 20 \\
b &= a & \quad \text{# } a &= 20 \quad b &= 20 \\
c &= c \times 2 & \quad \text{# } c &= 60 \\
d &= d - 10 & \quad \text{# } d &= ?
\end{align*}
\]
Exercise

```
a = 10
b = 20
c = 30

a = b   # a = 20
b = a   # a = 20    b = 20
c = c * 2  # c = 60
d = d - 10  # NameError:
            # name 'd' is not defined
```
Naming Variables

a
age
delta
name1
name2
R2D2
aVeryLongName
1tooMany
Naming Variables

- a
- age
- delta
- name1
- name2
- R2D2
- aVeryLongName
- 1to0Many
Naming Variables

this_is_good_too
but
we Prefer
thisIsGoodToo

lambda
for
Registering Wait-Listed Students

• Status as of 1/28/15
  (R=registered, NS=needs signature, WL=wait-listed)

  • **Lab 01**: W 1-3: 22 R + 3 NS + 1 WL
  • **Lab 02**: Th 1-3: 21 R + 3 NS + 3 WL
  • **Lab 03**: Th 3-5: 21 R + 4 NS + 5 WL
  • **Lab 04**: W 3-5: 11 R + 6 NS + 0 WL

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