CompSci 101
Introduction to Computer Science

Sept. 9, 2014
Prof. Rodger

President Brodhead
speech graduation 2010
DO NOT SIT IN THE LAST FOUR ROWS!

Come forward and sit beside someone you haven’t met
Announcements

• Lab 3 this week!
• Reading for next time
  – RQ4 on Sakai Due by 10am Thursday
• Assignment 2 due Thursday, Sept 11
• APT Problem Set 1 due today!
  – APT Problem set 2 out
Introduction

• Professor Rodger
How many ways can I run Python in this course?

• Eclipse
  – Complete program
  – Console
  – APT

• Online textbook
  – Beware Python 3 (‘/’ (2.7) vs ‘//' (3))

• Python Tutor
How to get Help in this class

• Piazza
• Consulting hours (Sunday-Thursday nights)
• Office hours (Prof, Tas)
• What happens if my laptop breaks and I can’t use my eclipse? Do I stop programming?
  – Clusters, Python Tutor, websubmit, borrow
• What happens if you send Prof. Rodger an email?
  • 46 support people vs. 1 person, may take awhile to answer
Submitting an APT or Assignment

• Use Ambient – submit
  – MAKE sure you select files
  – Don’t Successfully submit nothing – OOPS
  – Submit History – files submitted should be listed!
  – Alternative – use web submit
  – Tuesday midnight means Tuesday 11:59pm + 1 minute
Why is this person so important to this course?

• Have you donated yet?
What do Computer Scientists look like?
What did Prof. Astrachan teach you?

- Big Thanks to Prof. Astrachan!

$2^{10}$
import turtle
wn = turtle.Screen()

def square (alex):
    alex.forward(100)
    alex.left(90)
    alex.forward(100)
    alex.left(90)
    alex.forward(100)
    alex.left(90)
    alex.forward(100)
    alex.left(90)

if __name__ == '__main__':
    timmy = turtle.Turtle()
    square(timmy)

wn.exitonclick()
Top 10 list for surviving in CompSci 101

10. Ask questions
9. Eat lots of pizza
8. Learn how to spell Rodger
7. Read the book
6. Keep working until program is correct.
Top 10 list (cont)

5. Do the reading quizzes
4. Visit your prof in her office
3. Check Piazza every day
2. Seek help (one hour rule!)
1. Start programming assignments early
Review Functions

• Online form: www.bit.ly/101fall-0909-01

```python
def duplicate(word, num):
    return word * num

def duplicate2(word, num):
    print word * num

def duplicate3(word, num):
    word * num

1. print duplicate ("Go", 3)
2. print duplicate2("Go", 5)
3. print duplicate3("Go", 2)
4. duplicate("Go", 5)
5. duplicate2("Go", 4)
6. duplicate3("Go", 2)
```
Assignment 2

• How to start?
• Where does import go?
• Student work?
Computer Science Alum

- Biology and CS
- Undergraduate Research - JFLAP
- Epic
- Now in Med School at Vanderbilt
Computer Science Duke Alums

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More on Strings

• Strings are indexed starting at 0

• Example: ‘word’

```
word
0 1 2 3
```

• Use [num] – to refer to a particular character in word

• Use [x:y] to refer to a slice of the string starting at position x and up to but not including position y. Can leave out x or y.
Examples

phrase = "Duke Blue Devils"
print phrase[0]
print phrase[-3]
print phrase[1:3]
print phrase[5:10] + phrase[:4]
print (phrase[phrase.find('ev'):] ).upper()
def mystery(word):
    answer = ""
    for ch in word:
        if ch.lower() != 'e':
            answer = answer + ch
    return answer
Loop over string

• Online form: www.bit.ly/101fall14-0909-02

```python
def mystery2(word):
    count = 0
    for ch in word:
        count = count + 1
    return count

def mystery3(word):
    answer = 0
    for ch in word:
        if ch.lower() != 'e':
            answer = answer + 1
    return answer
```
Loop over all words in a list

def mysteryList(phrase):
    for word in phrase.split():
        print word
Loop over words

- Online form: www.bit.ly/101fall14-0909-03

```python
def mystery4(phrase):
    count = 0
    for word in phrase.split():
        count = count + 1
    return count

def mystery5(phrase):
    hold = phrase.split()
    answer = hold[0]
    for word in hold[1:]:
        if word[0].lower() != 'b':
            answer = answer + " " + word
    return answer
```

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Solve an APT