

CompSci 101

Introduction to Computer Science

active become books career challenges
china class command duke education
experience growing gu hours journey keep
knowledge kunshan learning life live mental
miles perfect person played preserve problems
program proposes read really saying scholar skill
something ten think thought
thousand together truth
understanding walk weeks
words work world yanwu year

Sept. 9, 2014

Prof. Rodger

President Brodhead
speech graduation 2010

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1

DO NOT SIT IN THE LAST FOUR ROWS!

Come forward and sit beside someone you haven't met

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2

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

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3

Introduction

- Professor Rodger



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4

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?



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What did Prof. Astrachan teach you?



2¹⁰



- Big Thanks to Prof. Astrachan!

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```
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()
```

Turtles

- Run in eclipse
- Make square with different sizes?
- Make a rectangle?
- Where is the repetition?
- New commands:
- up(), down(), position(), goto()

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11

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.

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12

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

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

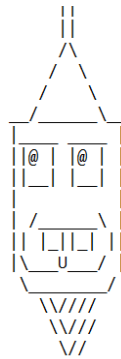
```
def duplicate2(word, num):  
    print word * num
```

```
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



CompSci 6 Fall 2011



More on Strings

- Strings are indexed starting at 0
- Example: `'word'`

w	o	r	d
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()
```

String fun
Crazy import

Loop over all characters in a String

```
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

```
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

```
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
```

Solve an APT