Announcements

- Reading for next time on calendar page
  - RQ 2 due Thursday
- Assignment 1 due Tuesday
  - Have fun with Blockly
- Install your environment! Get Help!
- Lab 1 this week!

- Plan for Today:
  - Problem Solving and Python

Review Scratch program

- "Hello World"
- Scratch Program
- Colors
  - Duke blue: motion
  - Mustard: control
  - Light blue: sensing
  - Orange: data
  - Purple: looks
Python code: hello.py

```
1    '''
2    Created on Aug 31, 2016
3    @author: Susan
4    '''
5    print "hello CompSci 101 students!"
6    
```

Run hello.py

```
1    '''
2    Created on Aug 31, 2016
3    @author: Susan
4    '''
5    print "hello CompSci 101 students!"
6    
```

Python data reading code

```
f = open("kjv10.txt")
st = f.read()
total = len(st)
zc = st.count('z')
print "total # chars = ",total
print "number of z’s",zc
for ch in 'aeiou':
    print ch, st.count(ch)
```

Explaining Python code?

Duke Connection: Fred Brooks '53

• What Would FB Say?
"The most important single decision I ever made was to change the IBM 360 series from a 6-bit byte to an 8-bit byte, thereby enabling the use of lowercase letters. That change propagated everywhere."

Fred Brooks

Why is programming fun?

Fred Brooks

• First is the sheer joy of making things
• Second is the pleasure of making things that are useful
• Third is the fascination of fashioning complex puzzle-like objects of interlocking moving parts
• Fourth is the joy of always learning
• Finally, there is the delight of working in such a tractable medium. The programmer, like the poet, works only slightly removed from pure thought-stuff.

Lab 1 This Week

• Install Before attending if can
• Modify Python program
• Scratch program

Our Programming Environment

• Install 5 items
• Why Java? – not using
• Eclipse – platform for development
• Python – programming language
  – Pydev – Python IDE for Eclipse
• Canopy – python libraries
• Ambient – turnin/snarf files to/from Duke
How does one get help in CompSci 101?

- Consulting hours
  - Sunday-Thursday 7:30-11:30pm
- Office hours (prof, TAs)
- Collaborate with other students
- Piazza
  - Ask questions
  - Do not post your code and ask what is wrong!
  - Post error message and line of code for error message
  - If added class late, may need to add yourself

How to succeed in CompSci 101

- Start assignments early, they'll take longer than you think
- Read the book, we'll build on it in class
- Collaborate well, but be sure you can do work on your own!
- Be curious, work hard at beginning, think carefully

Your goal is to …

- Get all assignments completed and turned in on time.

AND…

Algorithm

- Recipe
- Sequence of steps that constitute instructions
- Step-by-step procedure for calculations

What does Nate Silver do?

http://53eig.ht/1tZy909

How do Netflix and Amazon know me?

- Compsci101 project: capable of implementation as a program, but much more basic

http://moreintelligentlife.com/content/features/anonymous/slaves-algorithm