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

Software Failure
Review Scratch program

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

```python
print "hello CompSci 101 students!"
```

Run hello.py

```python
print "hello CompSci 101 students!"
```

Python data reading code

```python
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)
```

Woa!!!
Am I supposed to understand all that code right now!!!!

No!!!
We will learn all that over The next month!
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" by Copyright owned by SD&M (www.sdm.de) - Request for picture sent by email to Fred Brooks by uploader (Mark Pellegrino: user:Raul654) Fred sent this photo back, along with contact information for Carola Lambr at SD&M who gave copyright permission. Licensed under CC BY-SA 3.0 via Wikimedia

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…
Your goal is to …

• Get all assignments completed and turned in on time.

AND…

• Understand the code you turn in.
• Be able to explain the code you turn in.

Algorithm

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

What does Nate Silver do?

http://53eightht/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

Google “algorithm”