Announcements

- Midterms and final exam
  - None in this course
  - We have weekly quizzes instead

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Announcements

- How WebQs work
  - Go to clicker questions....

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Announcements

- How are you graded on participation?
  - Online discussion board—GoPost
  - Lecture clicker questions
  - Lab participation

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Announcements

- Weekly GoPosts
  - Posting "I agree" or "Okay" does not count.
  - Your contribution must have some value.
  - Write a rough draft and polish it before you post. You can also edit what you have already posted.
  - It is okay to write "I'm not sure about this [topic]." or "I still don't understand about [such and such]. Can someone explain?"

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Terms of Endearment

Using the right word speeds learning and helps getting help

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Le Mot Juste

Learning *le mot juste*, the right word for something, aids us in two ways:

- Helps *learning* ... our brains anchor concepts to words & phrases
- Helps *us get help* ... asking “tech support” for help requires us to describe the problem precisely
Terms

Familiar terms?
- screen saver
- monitor
- pixel
- RGB
- motherboard
- [micro]processor
- [RAM] memory

Definitions

Where can you find IT definitions?
- Glossary in back of book
- Online flash cards
- Web-o-pedia
- Computer User Dictionary
- Smart Computing Dictionary

Sequential access is

- Good because __________
  - Forces user to view in sequence
  - Showing someone how to do a task
- Bad because __________
  - Forces user to view in sequence
  - For reviewing a particular step

Random access is

- Good because __________
  - User can start anywhere
    - For reviewing a particular step
- Bad because __________
  - User can start anywhere
    - Showing someone how to do a task

Software/Hardware

Hardware refers to physical devices
Software refers to programs, the instructions directing a computer

- The main difference is:
  - Hardware cannot be changed
  - Software can be modified
  - The same hardware (computer) runs different software (applications)
  - Buying a computer…
**Acronyms are Mnemonics**

A **mnemonic** is any memory aid
- In IT we try to avoid remembering or memorizing, but sometimes we must ... mnemonics can help

Camels often sit down carefully. Possibly their joints creak. Perhaps, early aging might prevent premature rusting.

**Cambridge: Ordovician Silurian Devonian Carboniferous Permian Triassic Jurassic Cretaceous Paleocene Eocene Oligocene Miocene Pliocene Pleistocene Recent**

**Operationally Attuned**

Noticing how devices operate simplifies their use
**Observation:** Computers give feedback when they are working

So, if you think you're waiting for the computer but there is no feedback, it's waiting for you

One of the most effective habits new users can adopt is to be operationally attuned.

**The Speed of Change**

Consider running a mile ...  
- How fast can anyone run a mile?  
  - In 1999 Hakim El Guerrouj ran it in 3:43.13  
  - Compare with Roger Bannister  
    - In 1954 Bannister ran a mile in 3:59.4  
    - In 45 years the mile run got 7% faster

**Bannister's rate = 15.04 mph**  
**El Guerrouj's rate = 16.27 mph**

**A Speed Comparison**

- Compared to normal people ...  
  - How fast can you run a mile?  
    - Healthy people in their twenties ... ~7:30  
    - That is, El Guerrouj is twice as fast as us  
    - As a rate, 7:30 is 8 mph  
    - El Guerrouj is about a factor-of-2 faster than normal people ...
One More Factor

How fast do computers run?
- Univac I ran 100,000 adds/sec in 1954
- My IBM runs about 500,000,000 adds
  • A factor-of-5,000 improvement
- ASCI Red ran 2,100,000,000 adds in 1999
  • A factor-of-21 Million improvement

Can we comprehend such speeds or factors of improvement??

Factors Precisely

A factor of improvement is different than a percent improvement …
- factor = new_rate/old_rate
- percent = 100 x (new_rate-old_rate)/old_rate

Expressing an improvement by its factor is easier, especially for large changes
- El Guerrouj’s 7% improvement over Bannister is a 1.07 factor of improvement

Indy 500: 1911 Harroun 74.59mph; 2002 Castroneves 166.5mph

Analytical Approach

One reason to notice the factors of improvement is to recognize scale
- The time for the mile run has improved
- Maximum adds per second has improved
- But the difference in scale is dramatic
- A factor-of-1.07 for the mile run
- A factor-of-21,000,000 for additions

Getting information is easy with IT, but we need analysis to understand its significance.

Summary

It is essential to learn the vocabulary of a new field
- Words of tangible aspects of IT have definitions in glossaries
- Words for the intangible are key
  • Abstract
  • Generalize
  • Operationally Attuned
- Being analytical is key to understanding

Read Ch 2 in Fluency for next lecture