Fluency – A Summary of FIT100

Being Fluent With Information Technology requires life long learning. Though FIT100 is only the starting point, we have been exposed to many topics.

The 10 Most Important Topics ...

- Networks
- Digitarati
- Computers
- Algorithms
- Programming
- Logical Reasoning
- Abstraction
- Databases
- Deep Ideas
- Self-reliance

Exposure to Skills
- Pine
- Web browsers (Netscape & IE)
- HTML
- FTP
- Word
- Access
- VB6.0
- Anti-virus software
- Secure web & telnet connections

Networks

- Internet, Local Area Network
- TCP/IP and postcard analogy
- Ethernet and conversation analogy
- IP Address, DNS
- Hierarchical domain names
- spiff.cs.washington.edu
- World Wide Web
- HTML, FTP, http://
- Physical/logical separation

What the Digitarati Know

- A human’s innate knowledge of technology
- The perfect GUI: Mac CD Player
- Consistent interfaces
- Standard metaphors
- Standard information processing operations
- Clicking Around
- Blazing Away
- Notice how extensively you used this skills with DBs

Go boldly where you have never gone before

Computer Basics

- Fetch/Execute cycle and analogy to Nenana Ice Classic
- Five components of a computer
- Memory and container analogy
- Machine instructions and the indirect reference to operands
- Instruction reference via PC
- Memory and speed terminology

Knowing how computers work it should be obvious why they are always so annoyingly literal-minded!

Algorithmic Thinking

- Five basic properties of algorithms
  - Input Specified ... like procedure formats
  - Output Specified ... like procedure results
  - Effectiveness
  - Definiteness
  - Finiteness ... iterations stop
- Alphabetize CD’s example
- Importance of language in being precise
- Difference between algorithms and programs
Alphabetize CDs

Private Sub AlphabetizeCD (slots() As String, n As Integer)
    Dim alpha As Integer, bet As Integer
    Dim temp As String
    alpha = 0
    bet = 1
    Do While alpha < n - 1
        Do While bet < n
            If slots(alpha) > slots(bet) Then
                temp = slots(alpha)
                slots(alpha) = slots(bet)
                slots(bet) = temp
            End If
            bet = bet + 1
        Loop
        alpha = alpha + 1
        bet = alpha + 1
    Loop
End Sub

Programming

❖ Names, values and variables
❖ Assignment
❖ Expressions
❖ Conditionals
❖ Procedures with parameters
❖ Iteration
❖ Indexing and arrays
❖ VB6 Integrated Development Env

Abstraction

❖ On several occasions abstraction was discussed
    ❖ Procedural abstraction
    ❖ Algorithms as more abstract programs
    ❖ Debugging and trouble shooting
    ❖ Testing solutions
    ❖ Think abstractly about processes
    ❖ How do things work
    ❖ Am I being as effective with computers as possible
    ❖ Can I apply more or better technology

Abstraction

▶ Logic Reasoning ...
▶ Abstraction ...
▶ Deep Ideas ...
▶ Self-reliance ...

Deep Ideas

❖ Can computers think?
❖ Interpretation of instructions
❖ Digital representation of information
❖ Simulation
❖ Problems unsolvable by computers
❖ Searching for information
❖ Public key encryption
❖ Algorithmic thinking
❖ Communication design

Databases

▶ Basic structure of relational DBs, including tables, tuples, fields, types
▶ Forming relationships in DBs
▶ Queries
▶ Basics of Access
    ❖ Tables, Forms, Reports
    ❖ Wizards
    ❖ Editing and revising the system

Reasoning Exercises

❖ Worked through as series of problem solving and reasoning situations
    ❖ Binary search algorithm
    ❖ CDC database design
    ❖ Weight Guesser program
    ❖ Inch Worm program
    ❖ Art program examples (boxes, squirls etc)
    ❖ Body Mass Index program
❖ Programming exercises
    ❖ Zodiac problems
    ❖ Art program
    ❖ Game of Life modifications

Build a database for your own needs ... catalog your books or CDs, address book, help out your club or organization with record keeping

Languages

Networks ...
Diğerleri ...
Computers ...
Algorithms ...
Programming ...

Abstraction ...

Databases ...
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Languages

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FIT 100 IT and Social & Ethical Issues

❖ Politics and the internet
❖ E-mail etiquette: flaming
❖ What is the relation between technology and moral values?
❖ Issues around security; viruses
❖ Stuff I wish we had time for:
  ❦ Privacy and databases
  ❦ Inequitable access to information and production of information
  ❦ Copyright and patents in the internet age (Napster anyone?)
  ❦ Software entrepreneurship
  ❦ …. 

FIT 100 You’re On Your Own

❖ How to find information
❖ Finding work-arounds to bugs or system incompatibilities
❖ Experience with contemporary systems
❖ Reasoning by analogy and example

FIT100’s goal is to initiate you on a live-long learning process, wherein you determine when you need to learn more about IT and then to do so on your own!