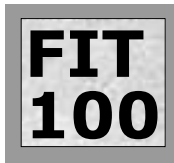


Being FIT -- A Summary of FIT100



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 ...

- Topics
- Networks ...
 - Digitalati ...
 - Computers ...
 - Algorithms ...
 - Programming ...
 - Logical Reasoning ...
 - Abtracting
 - Databases ...
 - Deep Ideas ...
 - Self-reliance ...

- Exposure to Skills ...
- Pine
 - Netscape and IE
 - FTP
 - Word
 - Excel
 - Access
 - Search engines
 - VB6.0

- ❖ 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

Topics

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What the Digitalati 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

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Go boldly where you have never gone before

- ❖ 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 exacting

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Algorithmic Thinking

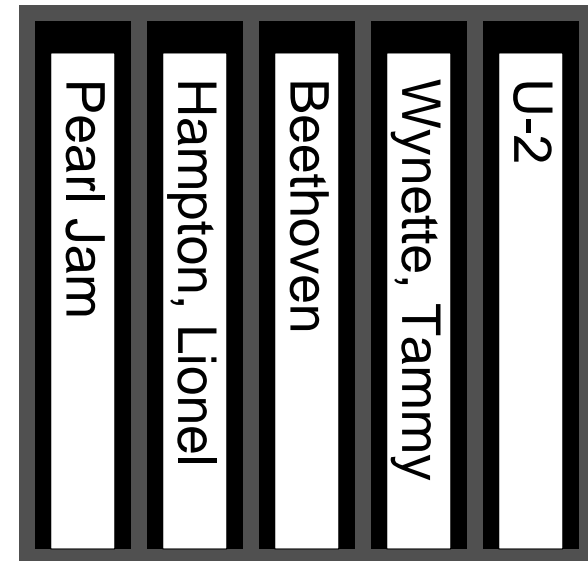
- ❖ Five basic properties of algorithms
 - ❑ Input Specified ... like procedure formals
 - ❑ Output Specified ... like procedure results
 - ❑ Effectiveness
 - ❑ Definiteness
 - ❑ Finiteness ... iterations stop

} Assured by language
- ❖ Alphabetize CD's example
- ❖ Importance of language in being precise
- ❖ Difference between algorithms and programs

Topics
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<u>A</u> lgorithms ...
<u>P</u> rogramming ...
Logical <u>R</u> easoning ...
<u>A</u> btracting
<u>D</u> atabases ...
Deep <u>I</u> deas ...
<u>S</u> elf-reliance ...

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
```



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

These are a sufficient set of concepts to solve any problem by computer, though there is much more to learn about programming

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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 Work program
 - ❑ Body Mass Index program
- ❖ Programming exercises
 - ❑ Zodiac problems
 - ❑ Graphic art program
 - ❑ Raindrop program modifications

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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

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- ❖ 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

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

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Deep Ideas In Human Thought

- ❖ Can computers think
- ❖ Who owns your information
- ❖ Interpretation of instructions
- ❖ Digital representation of information
- ❖ Problems unsolvable by computer
- ❖ Using the intractability of factoring as a means of privacy of information
- ❖ Algorithmic thinking and the encapsulation of processes

These issues have not been resolved by or anyone, but key aspects of the ideas have been introduced

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- ❖ How to find information
- ❖ Finding work-arounds to bugs or system incompatibilities
- ❖ “Going out and coming back in”
- ❖ Extensive 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!

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