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What the Digerati Know

Other people can teach you computer applications or you can figure them out for yourself

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Learning New Tools

How do we learn to use new tools?

- ●Reading the owner's manual -- chain saw
- Be taught in their use -- car, bicycle
- Figure them out ourselves -- CD player

- Software designers wanting you to learn their tool ASAP, try for 'intuitive'
  - Consistent Interfaces -- build on experience
  - Suggestive icons -- bypass terminology
  - Metaphors -- exploit analogous reasoning

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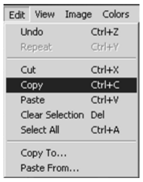
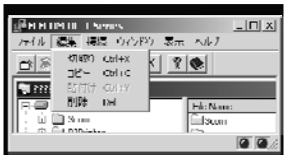
Standard Functionality

Most applications have File and Edit





Impress your friends with your knowledge of Japanese

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What does 'New' Mean?

'New' means create a 'blank instance'

To understand 'blank instance' know that information has properties as well as content which are all stored in a table with a place for everything

Document: Date created, date modified, creator, fonts, content, diagrams, pictures, tables, ...

A 'blank instance' is simply the structure without any of the content

Examples? Blank check register

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"Click Around"

Software designers use standard ideas to make applications intuitive

- To learn a new application, check it out by clicking around
  - ∗ Take a minute to ...
    - Look under all menus to see operations
    - Follow the "..." for menu operations
    - Try to recognize what the icons mean

Clicking around is exploration

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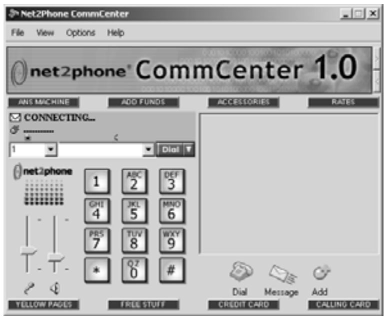
A New Application

Find:
consistent
interface
icons
metaphor



"Blazing Away"

Learn an application fast by trying it

- Beginning with a new instance, assertively try menu items
  - ∗ *Expect to fail* and make a mess
  - ∗ Exit the application, and if you are asked "Save?" reply "No"
  - ∗ Try repeatedly until becoming familiar

If you are trying to achieve some goal, keep your eyes on the prize

To Learn A New Tool

Software systems build on a consistent interface, standard metaphors, etc.

- ∗ Expect to teach yourself applications
- ∗ Do so by familiarizing yourself with the features … "Clicking Around"
- ∗ Assertively try out the features, "Blaze Away," watching what they do
  - Be efficient -- stay focused, don't type a lot when you expect to exit

If all else fails …

Differences & Similarities

Different vendors will produce similar software for the same task

- Superficially, the GUIs use similar features
- Fundamentally, the task largely determines how the software must work … they *must* be similar

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- Implications …
  - Know one word processor, learn others fast
  - SW differences: mostly glitz, convenience
  - Don't accept lousy … switch to other SW

Mac or PC???

Arguments about which is better, Mac or PC, create only heat, no light

- ∗ They are more alike than different
- ∗ Any Fluent person can use both

Assignment 2: Find a Macintosh computer on campus, e.g. MGH or OUGL labs. Try out the Mac and see what you find familiar and what is different. Locate the browser, and check the class web page. Hand in a list *describing* in a sentence or two five features you find different, and five that are the same.
Due: Before Class Monday 12 January 2004

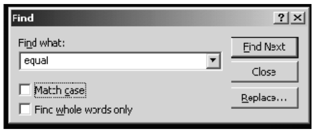
Another Implication

If SW is similar at its core, computations can be taught without learning a specific vendor's SW ...

Another Implication

If SW is similar at its core, computations can be taught without learning a specific vendor's SW ... consider text searching and replacement

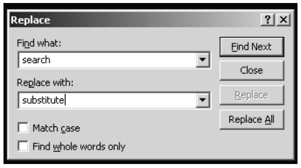
```
Article 1. All human beings are born free and equal ...
↕↕↕↕↕↕↕↕↕↕↕↕↕↕↕↕↕
eeeeeeeeeeeeequal
```



Find what: equal

Replacement

Two strings are required: search string and substitution string



Find what: search

Replace with: substitute

- Adopt a notation: **search ✘ substitute**

Notation Example

Illustrating the use of the notation

- Using the replacement **Clinton ✘ Bush**

  The sentence

  "At the White House President Clinton said …"

  Becomes

  "At the White House President Bush said …"

- It's easy to express substitutions

Gore ✘ Cheney / Albright ✘ Powell / Socks ✘ Buddy

To show deletion use epsilon, ε, as in: word ✘ ε

Placeholder Technique

A common problem ... copying text off web often trashes the line breaks

```
Roses are red

Violets are blue

Searching is fun

But doesn't rhyme
```

Intended

```
Roses are
red

Violets are
blue

Searching is
fun

But doesn't
rhyme
```

Trashed by extra line breaks

Placeholder Technique

Formatting is performed by special (non printing) characters ...

```
Roses are red↲
↲
Violets are blue↲
↲
Searching is fun↲
↲
But doesn't rhyme↲
```

Intended

```
Roses are ↲
red↲
↲
Violets are ↲
blue↲
↲
Searching is ↲
fun↲
↲
But doesn't ↲
rhyme ↲
```

Trashed by extra line breaks

Placeholder Technique

Roses are ↵red↵↵Violets are ↵blue↵↵…

- Deleting the single ↵ deletes them all!

```
Roses are ↵
red↵
↵
Violets are ↵
blue↵
↵
Searching is ↵
fun↵
↵
But doesn’t ↵
rhyme ↵
```

⟶

```
Roses are redViolets
 are blueSearching is
 funBut doesn’t rhyme
```

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Thinking of the Input

Roses are ↵red↵↵Violets are ↵blue↵↵…

- Placeholder technique …

Step 1. Substitute a placeholder for the longer string

↵↵ × #

Yielding

Roses are ↵red#Violets are ↵blue#…

Step 2. Next, delete the shorter string

↵ × ε

Yielding

Roses are red#Violets are blue#…

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Placeholder Replaced

Step 3. Finally, replace the placeholder with the original long string

× ↵↵

Yielding

Roses are red↵↵Violets are blue↵↵…

The intended result!

- Summarizing the placeholder

longstring × *placeholder*

shortstring × *ε*

placeholder × *longstring*

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Summarizing

Humans must learn to use tools

- Software designers want you to learn easily
- SW uses consistent interface, metaphors, …

∗ Teach yourself applications by “Clicking Around,” and “Blaze Away”

∗ SW for a task must share core features

∗ Learn app.s independently of vendor

Placeholder technique is effective for fixing text

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