LA TROBE UNIVERSITY

# Introduction of Interface

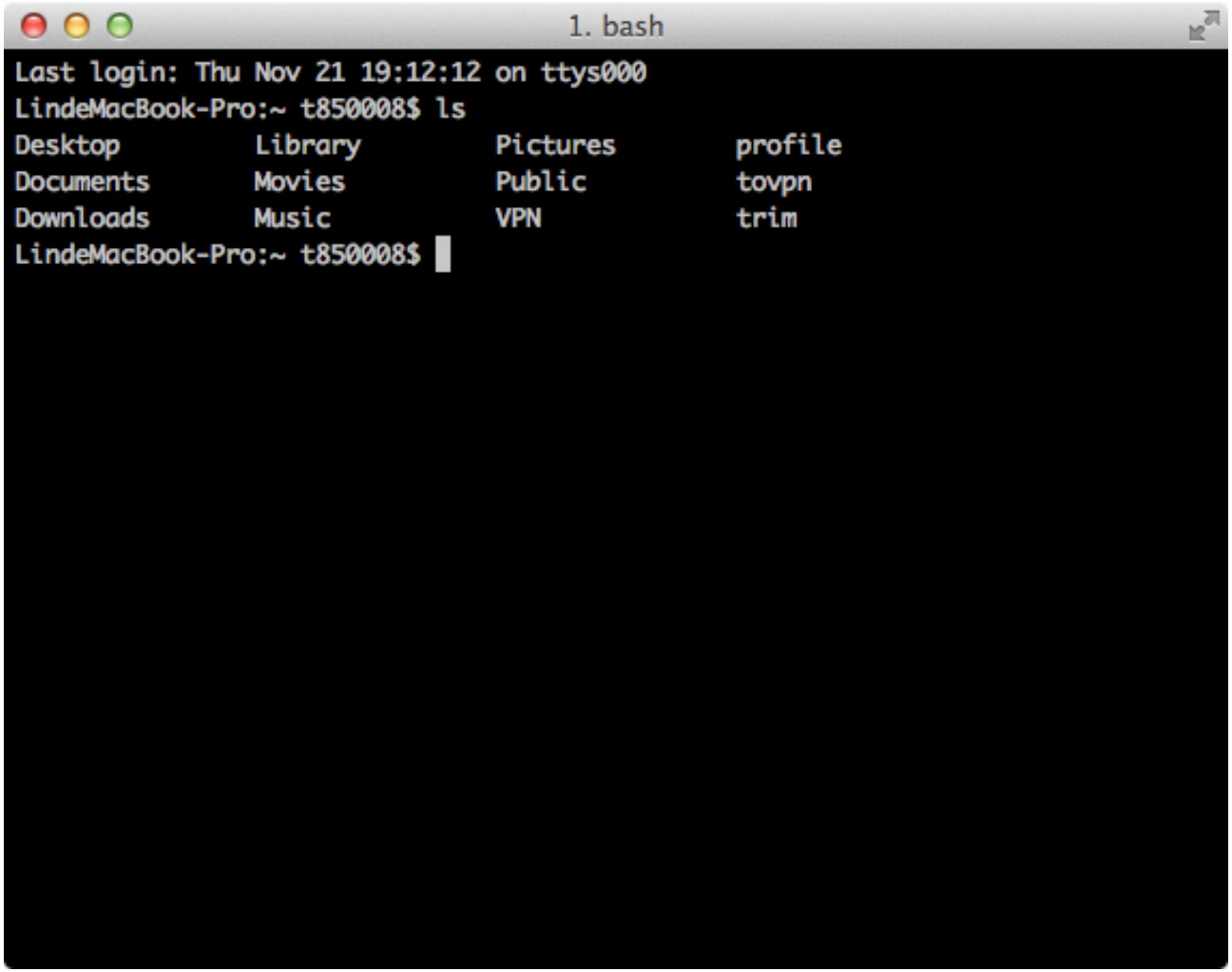
Larina Wang

School of Engineering and Mathematical Science
Department of CSIT

# Interface


Recycle Bin
Most used
Get Started
Maps
People
Calculator
Alarms & Clock
Snipping Tool
Recently added
paint.net
0 – 9
3D Builder
3D Scan
A
Adobe Photoshop Express
Alarms & Clock
American Express
Audible
Autodesk Pixlr
B
Life at a glance
Mail
Find the cat
Where the Ninja Cats are...
5:00 PM - 5:30 PM
Wednesday 20
Store
Photos
Groove Music
Drone manufacturers work to combat growing terro...
Cortana
News
Harriet Tubman replacing Andrew Jackson on $2...
USA TODAY
Microsoft Edge
@Bluejays Life-size bobblehead anyone?
Twitter
Wed
Thu
Fri
80°
55°
72°
54°
63°
50°
Bellevue
Draft trades illustrate scarcity of talent at...
Sports
Pemex says fire at facility in Coatzacoalcos, Mexico, is no...
Breaking...
Office
Play and explore
Xbox (beta)
Microsoft Solitaire Collection
Minecraft
Movies & TV
SODA
Other cool apps
Wunderlist
Wireless Displ...
Remote Deskt...
Photoshop Ex...
Give all the feedbacks!
Feedback Hub
Ask me anything
Windows 10 Pro Insider Preview
Id 14328.rs1_release.160418-1609
4:55 PM
4/20/2016

# Interface

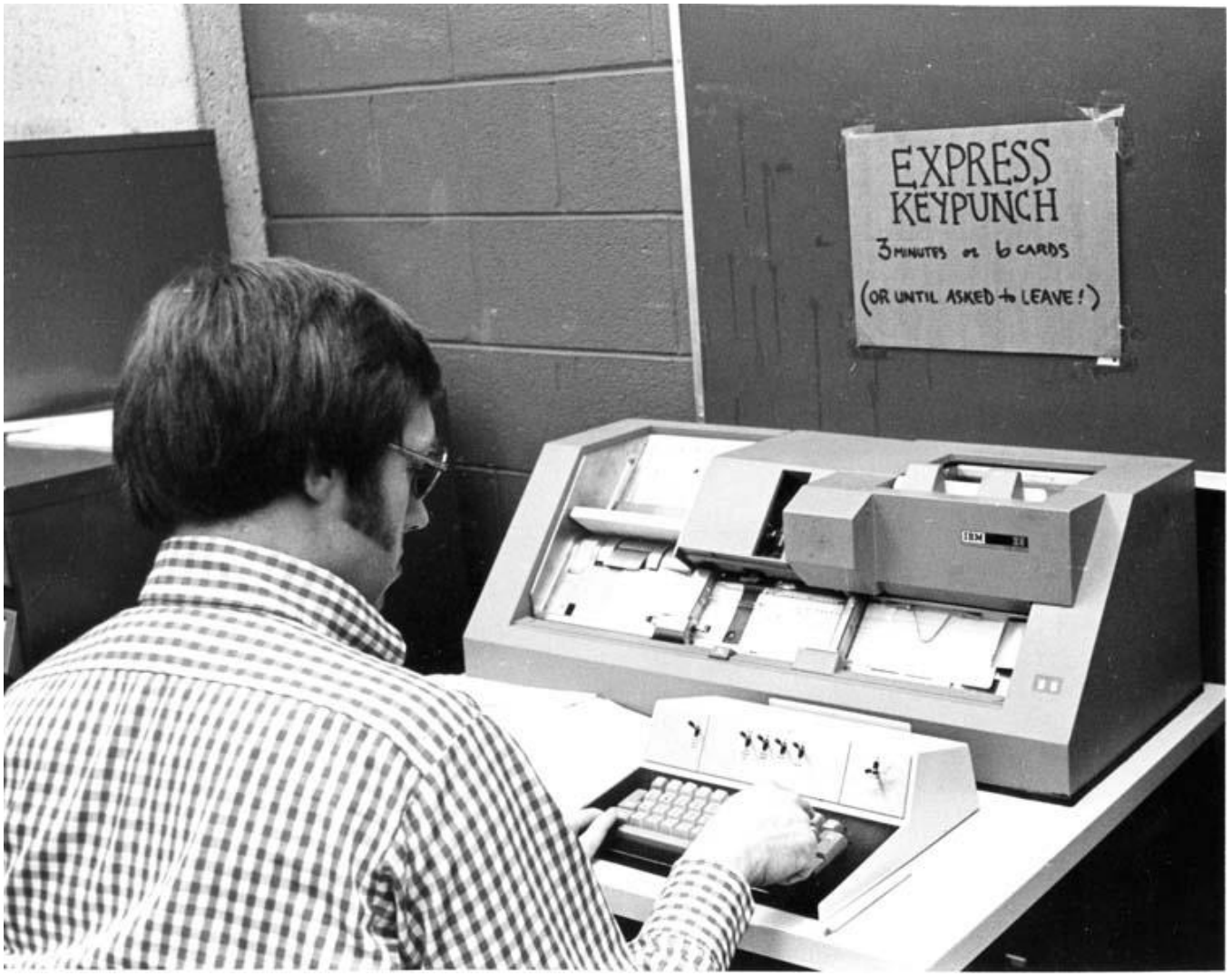

1. bash
Last login: Thu Nov 21 19:12:12 on ttys000
LindeMacBook-Pro:~ t850008$ ls
Desktop Library Pictures profile
Documents Movies Public tovpn
Downloads Music VPN trim
LindeMacBook-Pro:~ t850008$

# A bit of History

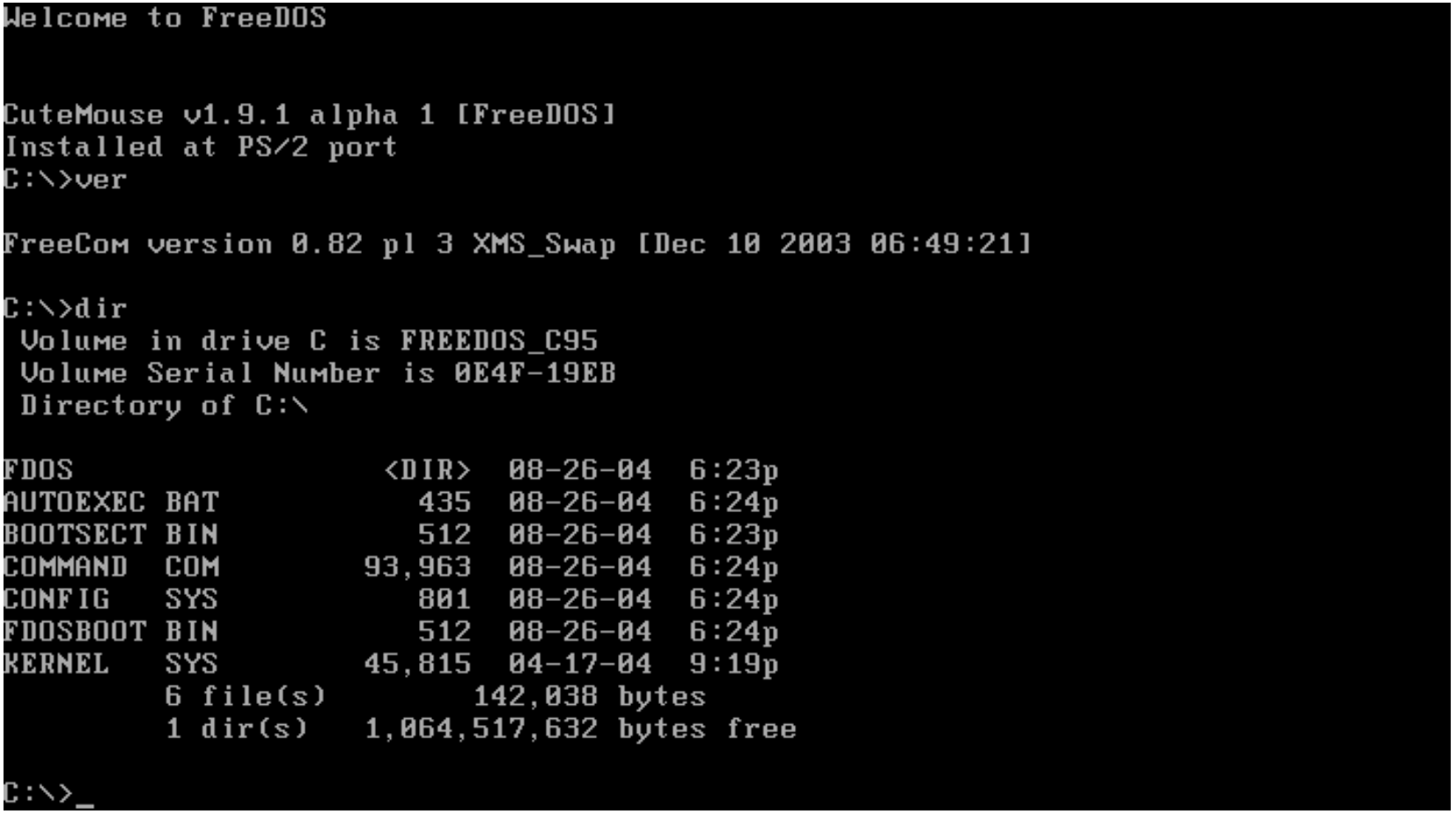
The history of interface from past to present could approximately be divided into four parts.

- Before 1960
- Between 1960 and 1984
- Starting from 1984
- Around 2000

# Punched card computer



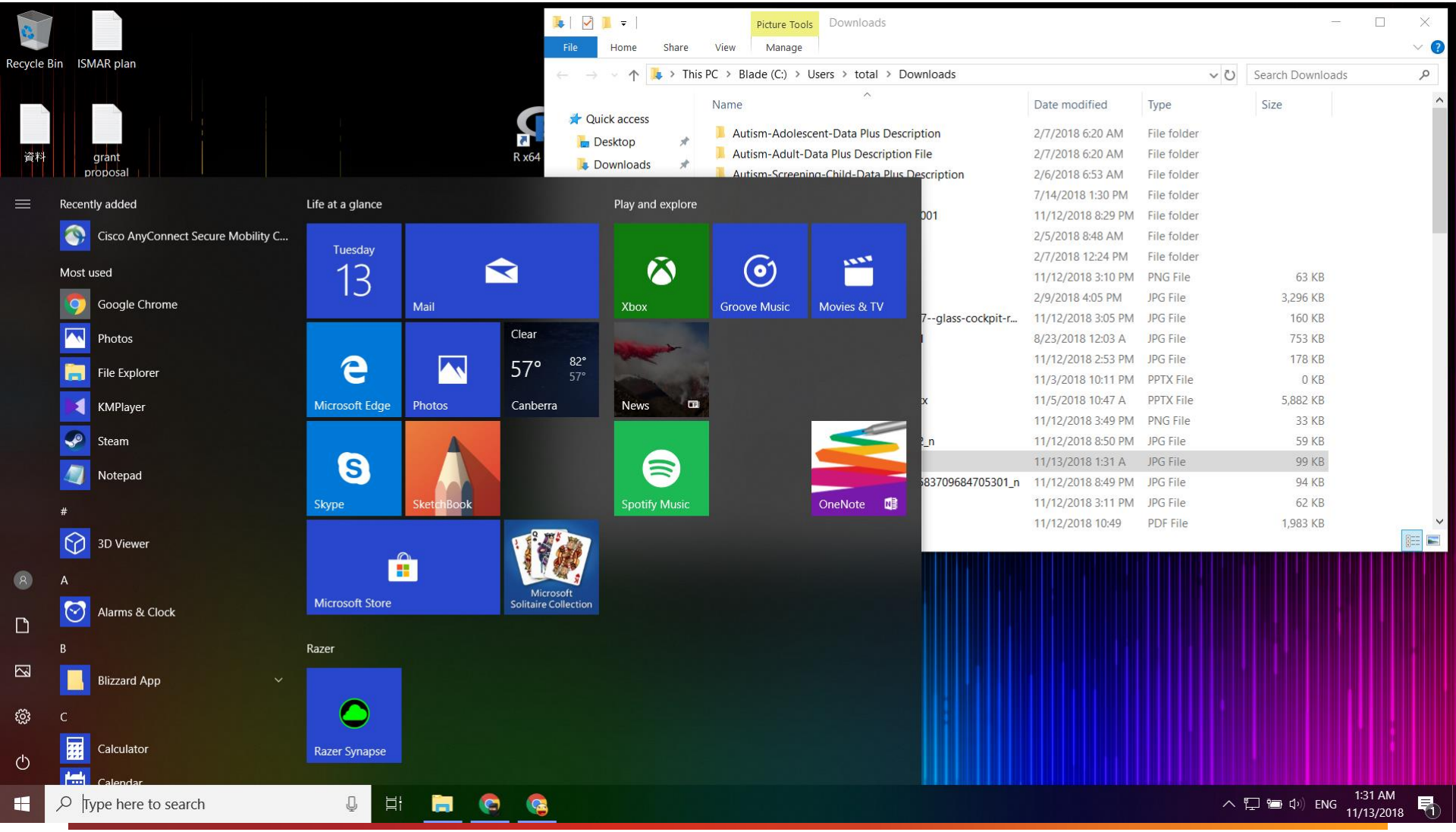
# Command-line Interface



# Command-line Interface

A command-line interface or command language interpreter (CLI), also known as command-line user interface, console user interface and character user interface (CUI), is a means of interacting with a computer program where the user (or client) issues commands to the program in the form of successive lines of text (command lines).

# WIMP Interface model



# WIMP Interface model

WIMP stands for:

W – Windows

I – Icons

M – Menus

P – Pointing device

# Post-WIMP Interface

# Post-WIMP Interface

Aims to design an interface with:

No menus.

No forms.

No toolbars.

And uses gesture and speech recognition as input.

# Ideal Interface

What do you want?

What have been done?

The solution of current interface lies between these two questions.

You will not be distracted by the interface!

# Pros of WIMP

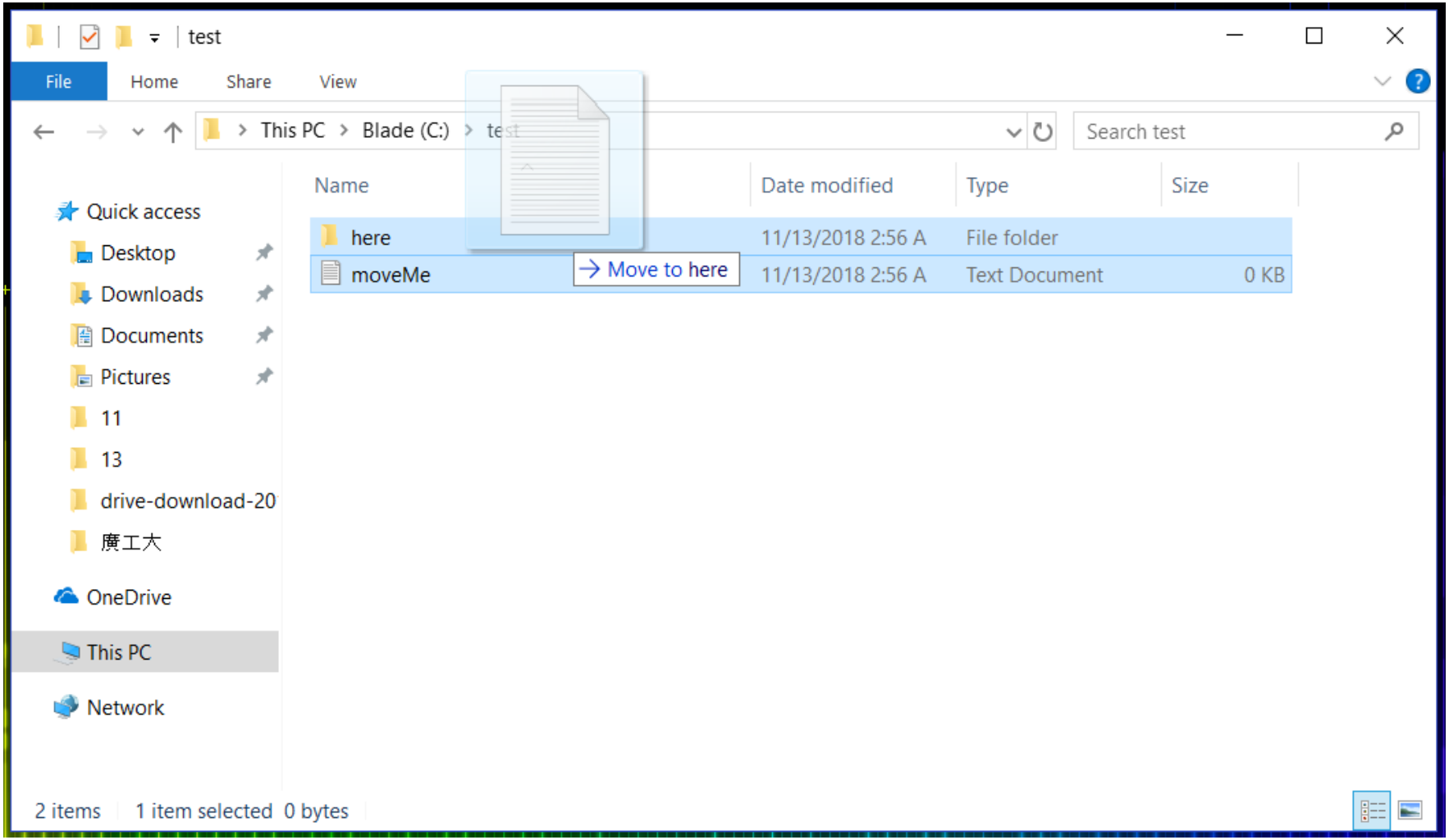
# Pros of WIMP

The most important factor of interface is: how user friendly the interface is?

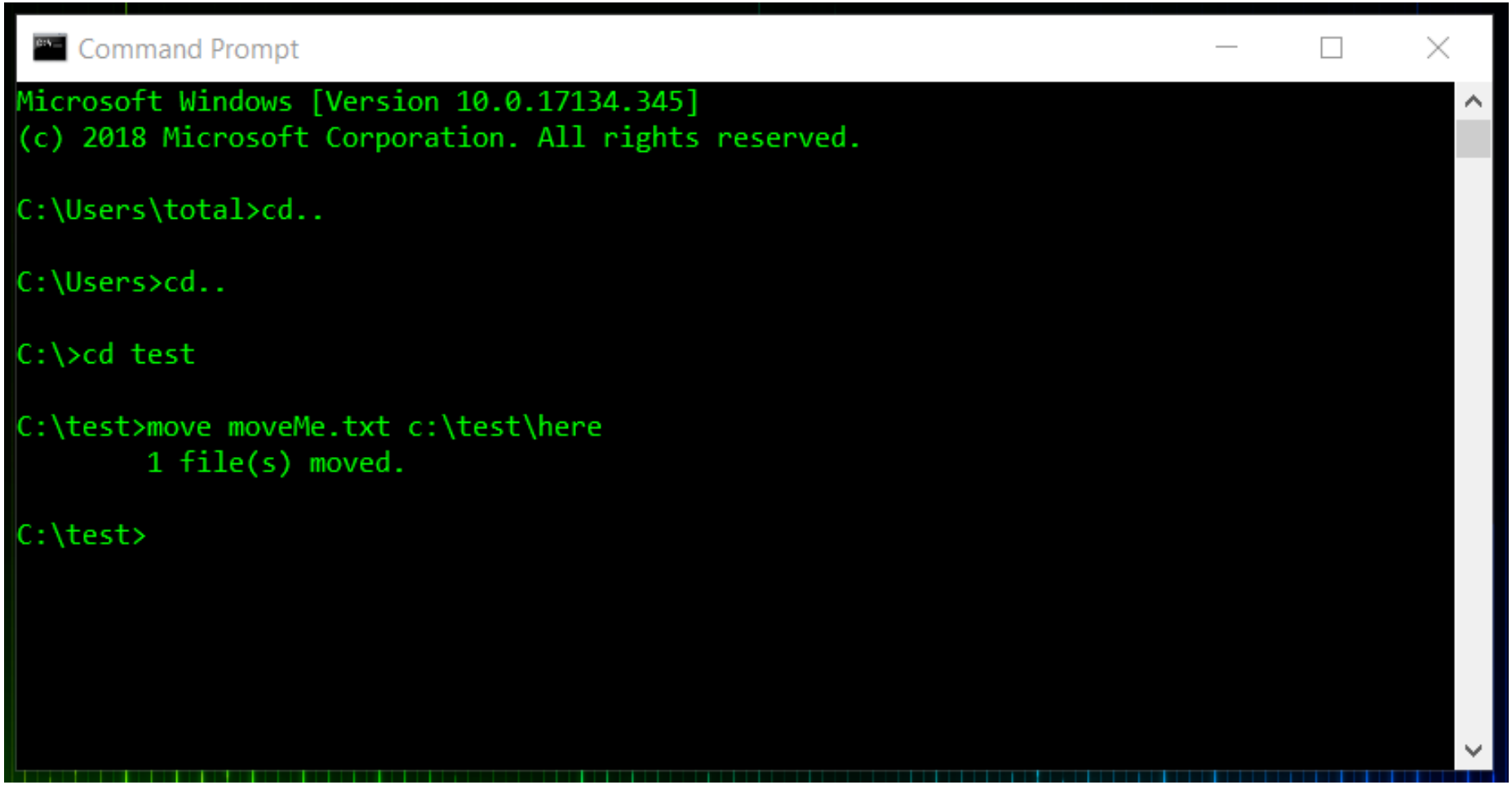
Novice: ease of use is dictated primarily by how easy to learn and remember the interface is.

Power users: the concern is less with the learning curve than with the effort required to be highly productive.

# Pros of WIMP


test
File
Home
Share
View
This PC
Blade (C:)
test
Search test
Quick access
Desktop
Downloads
Documents
Pictures
11
13
drive-download-20
廣工大
OneDrive
This PC
Network
Name
Date modified
Type
Size
here
11/13/2018 2:56 A
File folder
moveMe
11/13/2018 2:56 A
Text Document
0 KB
Move to here
2 items
1 item selected 0 bytes

# Pros of WIMP


Command Prompt
Microsoft Windows [Version 10.0.17134.345]
(c) 2018 Microsoft Corporation. All rights reserved.
C:\Users\total>cd..
C:\Users>cd..
C:\>cd test
C:\test>move moveMe.txt c:\test\here
1 file(s) moved.
C:\test>

# Pros of WIMP

Although WIMP is still not the ideal interface, it have some major contributions.

They have enabled users to be comfortable with computers who in general couldn't use them with earlier interfaces: young children who cannot yet read or write and non-professional users.

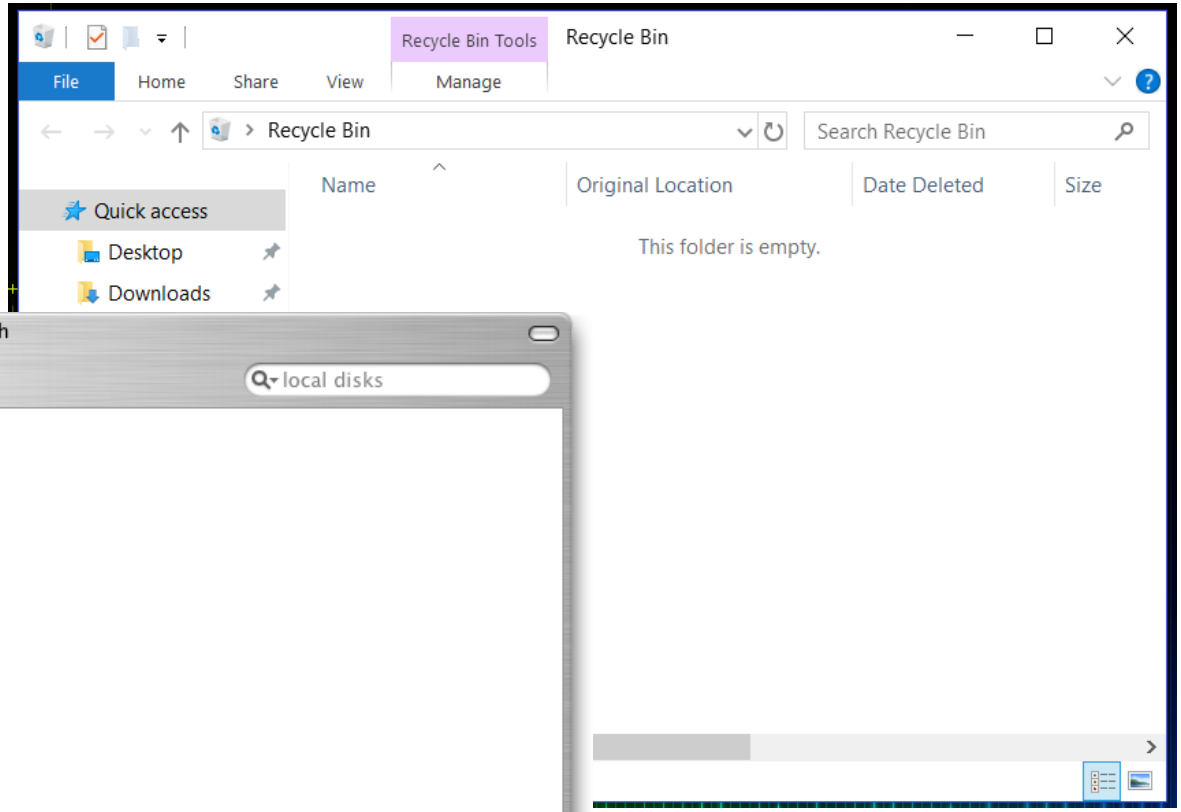
"Point and click," the hallmark of WIMP GUIs, has become part of modern culture.

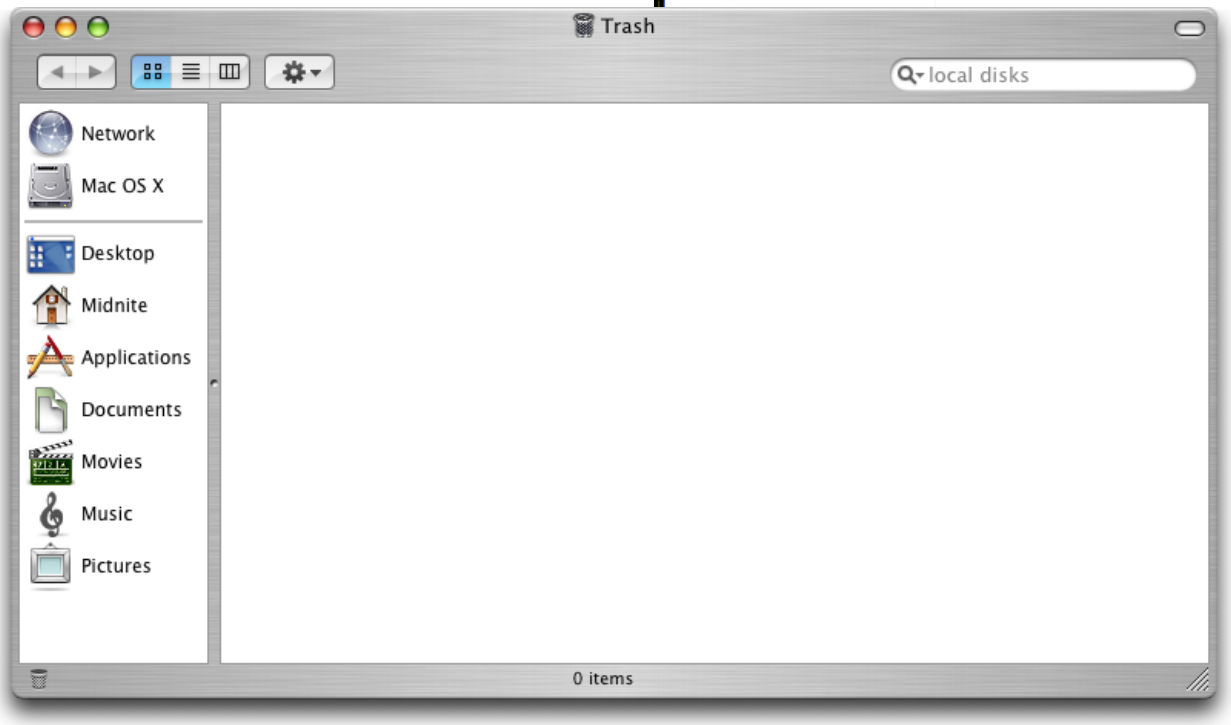
User interface design has become a specialty and user interface designers are highly sought after.

# Pros of WIMP

What WIMP GUIs have made possible is a de facto standard for the application interface that, compared to command line interfaces, gives us (relative) ease of learning, ease of use, and ease of transfer of knowledge gained from using one application to another because of consistencies in look and feel. “No one reads manuals anymore” because by and large they don’t have to.

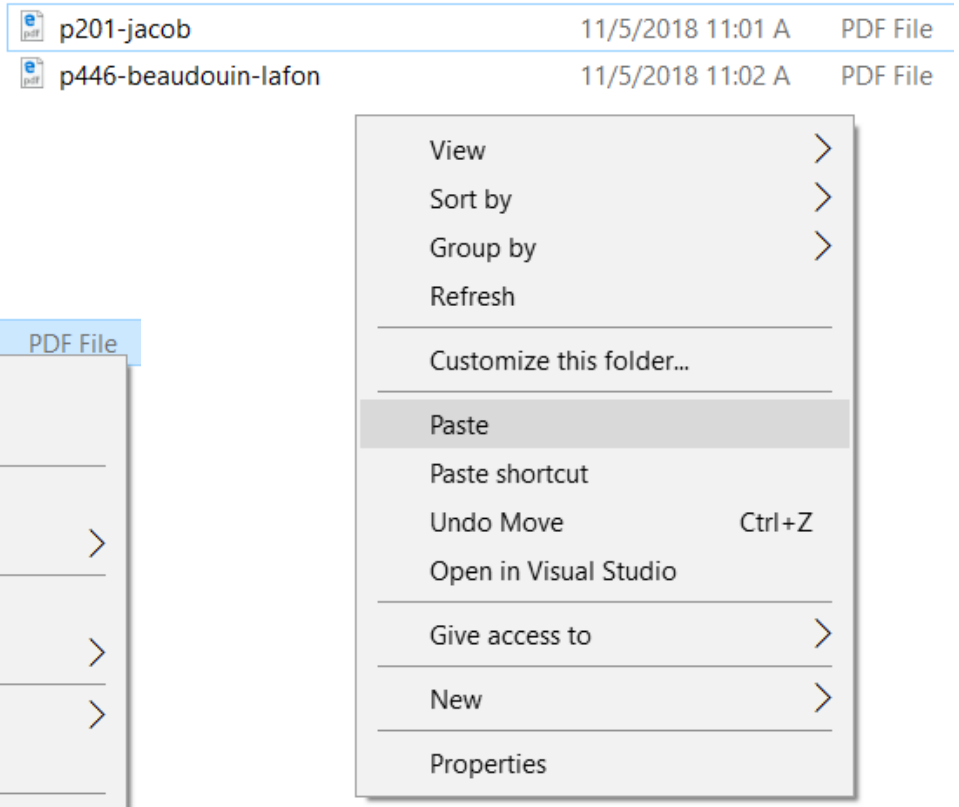
# Pros of WIMP


Recycle Bin Tools
Recycle Bin
File
Home
Share
View
Manage
Recycle Bin
Search Recycle Bin
Name
Original Location
Date Deleted
Size
Quick access
Desktop
Downloads
This folder is empty.


Trash
local disks
Network
Mac OS X
Desktop
Midnite
Applications
Documents
Movies
Music
Pictures
0 items

# Cons of WIMP

# Cons of WIMP


p201-jacob 11/5/2018 11:01 A PDF File
p446-beaudouin-lafon 11/5/2018 11:02 A PDF File
View
Sort by
Group by
Refresh
Customize this folder...
Paste
Paste shortcut
Undo Move Ctrl+Z
Open in Visual Studio
Give access to
New
Properties
p201-jacob 11/5/2018 11:01 A PDF File
p446-beaudouin-lafon
Open
Edit with Notepad++
Scan with ESET NOD32 Antivirus
Advanced options
Share
Open with
Give access to
Restore previous versions
Send to
Cut
Copy
Create shortcut
Delete
Rename
Properties

# Cons of WIMP


| Shortcut Keys | Description |
|---|---|
| **Alt+F** | File menu options in current program. |
| **Alt+E** | Edit options in current program |
| **Alt+Tab** | Switch between open programs |
| **F1** | Universal Help in almost every Windows program. |
| **F2** | Rename a selected file |
| **F5** | Refresh the current program window |
| **Ctrl+N** | Create a new or blank document in some software programs. |
| **Ctrl+O** | Open a file in current software program |
| **Ctrl+A** | Select all text. |
| **Ctrl+B** | Change selected text to be Bold |
| **Ctrl+I** | Change selected text to be in Italics |

# Cons of WIMP


15°C
16:26
MY CAR
OVERVIEW
TIRE PRESSURE
ENGINE
FUEL
TRUNK OPEN
DOOR OPEN
Front right tire
25 psi
Rear right tire
28 psi
Front left tire
28 psi
Rear left tire
29 psi
20°C
20°C

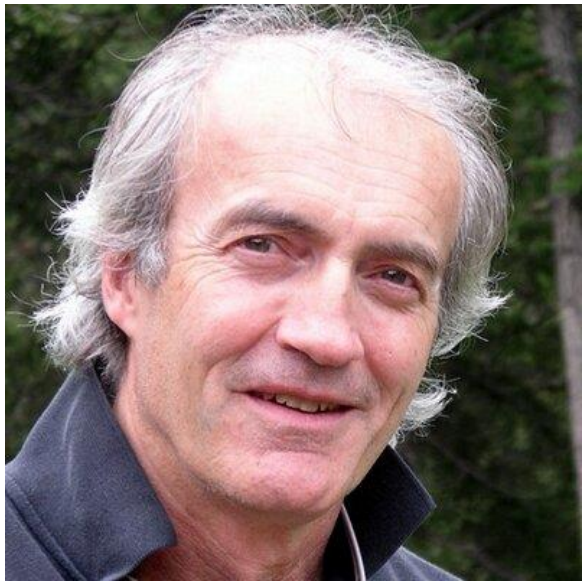
# Cons of WIMP

"Mousing" and keyboarding are not suited to all users, either because they don't find it natural or because they develop repetitive stress injuries, not to mention the special needs of users with disabilities.

# Cons of WIMP

WIMP interfaces do not take advantage of speech, hearing, and touch.

# Bill Buxton



Canadian computer scientist and designer.

Principal researcher at Microsoft Research.

Known for being one of the pioneers in human-computer interaction field.

He pointed out that WIMP GUIs based on the keyboard and the mouse are the perfect interface only for creatures with a single eye, one or more single-jointed fingers, and no other sensory organs.

# Cons of WIMP

# Cons of WIMP

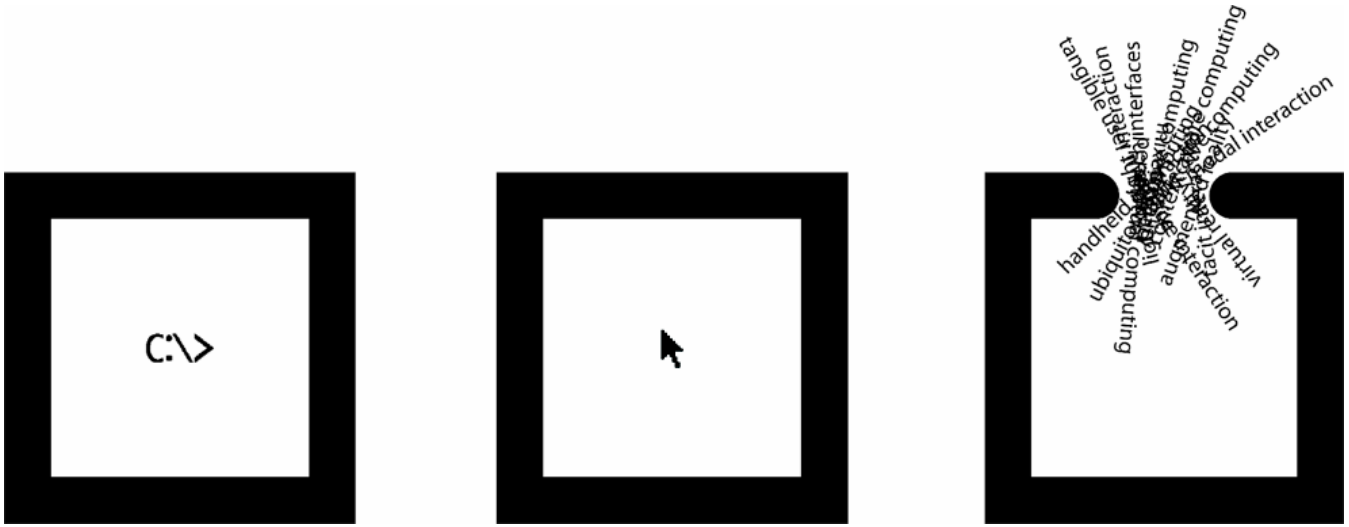
# Post-WIMP Interface


# Post-WIMP Interface

# Post-WIMP Interface

# Post-WIMP Interface

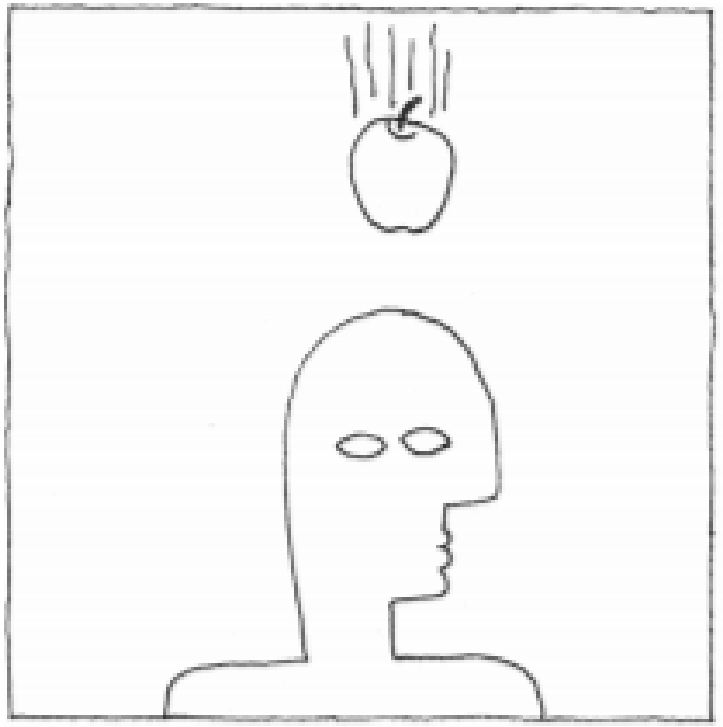
Reality-Based Interaction: A Framework for Post-WIMP Interfaces




Generations of interaction

# Reality-Based Interaction

- Naïve Physics: people have common sense knowledge about the physical world.

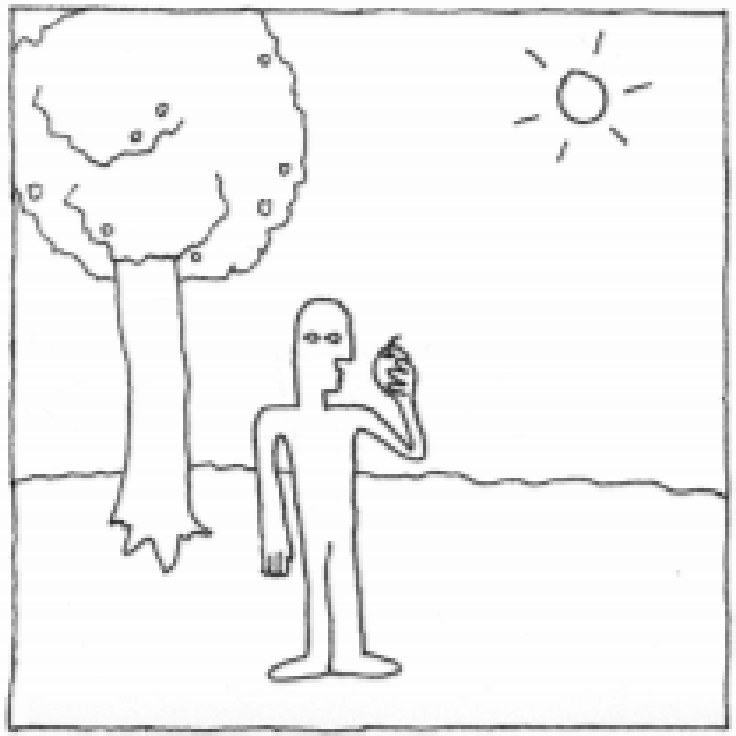


# Reality-Based Interaction

- Body Awareness & Skills: people have an awareness of their own physical bodies and possess skills for controlling and coordinating their bodies.

# Reality-Based Interaction

- Environment Awareness & Skills: people have a sense of their surroundings and possess skills for negotiating, manipulating, and navigating within their environment.



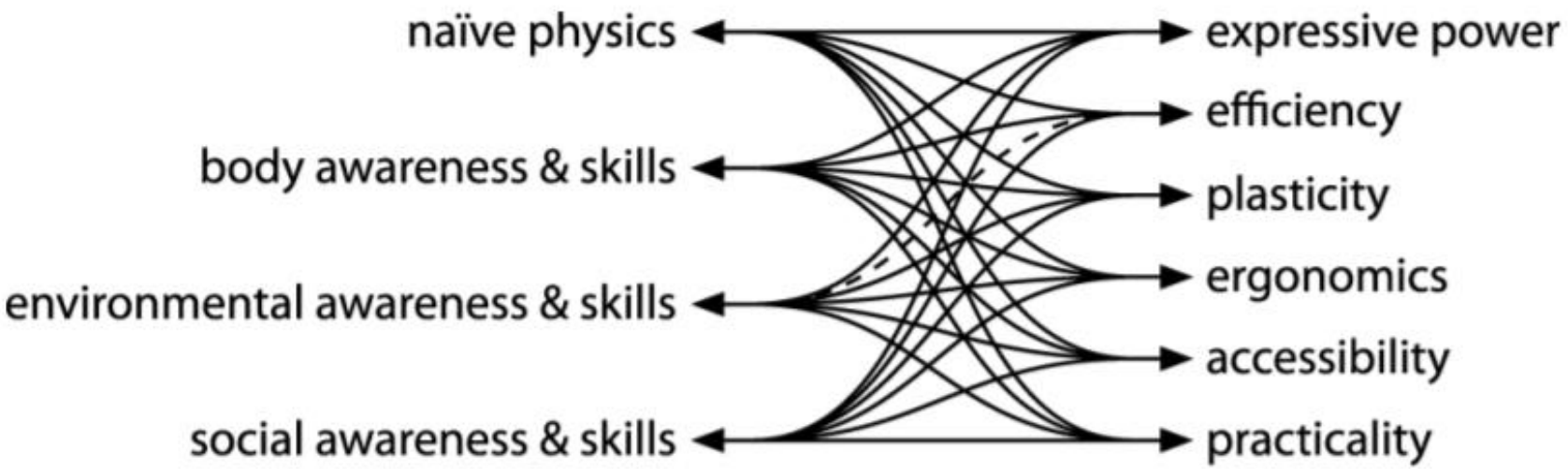
# Reality-Based Interaction

- Social Awareness & Skills: people are generally aware of others in their environment and have skills for interacting with them.

# Reality-Based Interaction

- Expressive Power: i.e., users can perform a variety of tasks within the application domain.
- Efficiency: users can perform a task rapidly.
- Versatility: users can perform many tasks from different application domains.
- Ergonomics: users can perform a task without physical injury or fatigue.
- Accessibility: users with a variety of abilities can perform a task.
- Practicality: the system is practical to develop and produce.

# Reality-Based Interaction




RBI design tradeoffs

# Thank you