GUI,Hypertext & Tablet

Seminar aus Informatik

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Overview - GUI

Part 1

Hypertext

Memex ...

Part 2

The early days

Sage ...

The rise

DOS ...

The golden Age

Windows 3.11 ...

Overview – Tablet Computing

Part 1 **60s - 70s**

Ivan Sutherland's Sketchpad

The Rand Talblet

Alan Kay's Ideas - Dynabook

Part 2 **80s - 90s**

Handwriting Recognition

- Apple Newton
- Palm

Part 3

Tablets today

Hypertext

Hypertext...

...is a **text** displayed on a computer or other electronic device with **references** (hyperlinks) to other text that the reader can **immediately access**.

...is non linear (means that it is like lexika and cannot be read from the beginning to the end like an ordinary book).

...has synasthesia aspect (means that it can be combined with text/picture/audio/picture animation).

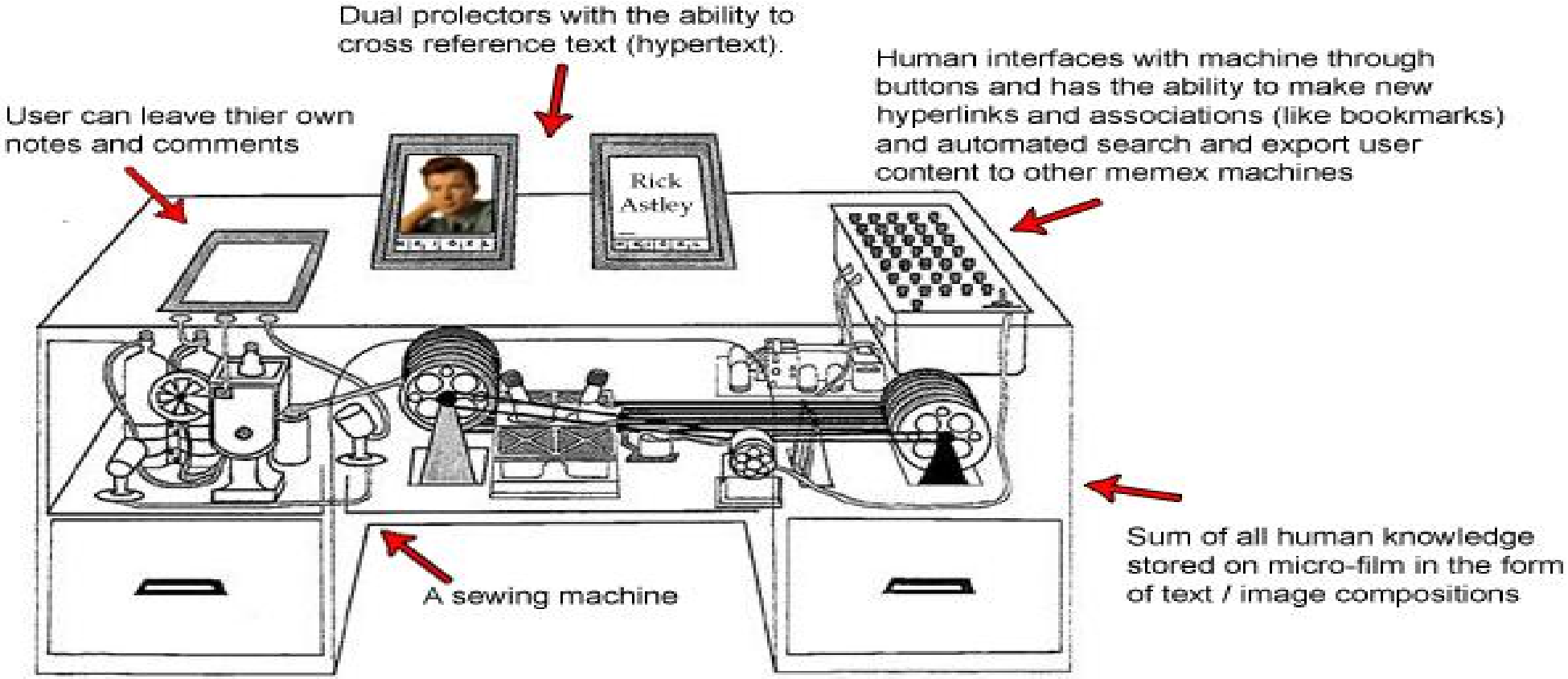
...has operational aspect (means that it can be integrated within speech working systems for analysing or generating).

...has interactivity aspect (means that User can be included through update/upgrade).

1945

Hypertext

Memory Extender, a hypothetical proto-hypertext system in which an individual would compress and store all of their books, records, and communications, "mechanized so that it may be consulted with exceeding speed and flexibility".



THE MEMEX order yours today!

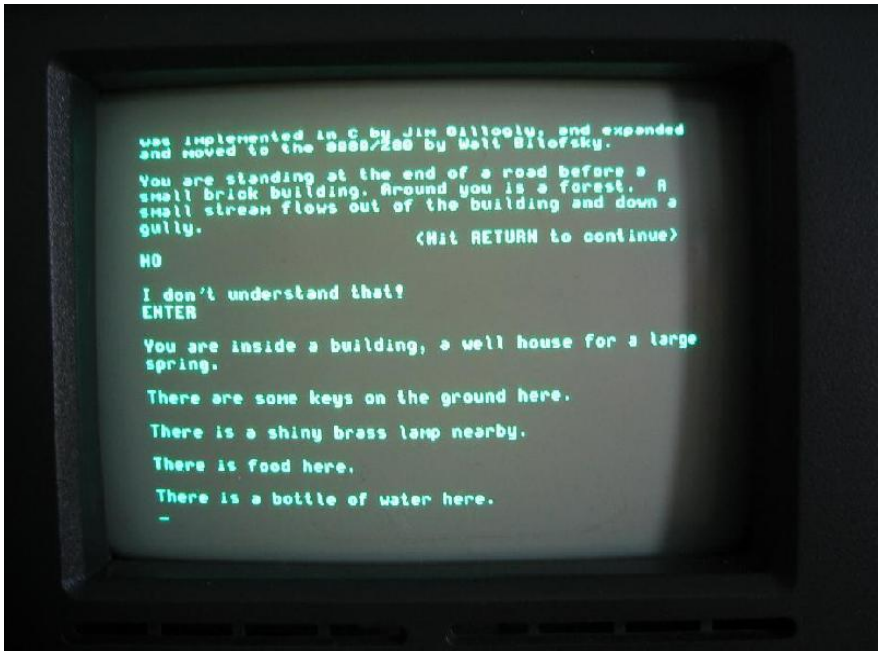
1945 → 1970

Hypertext

Ted Nilson

Formed the term *Hypertext* (1965) and *Hypermedia* (Hypertext with the main aspect to multimedia: e.g. World Wide Web).

Webficition/Interactive fiction

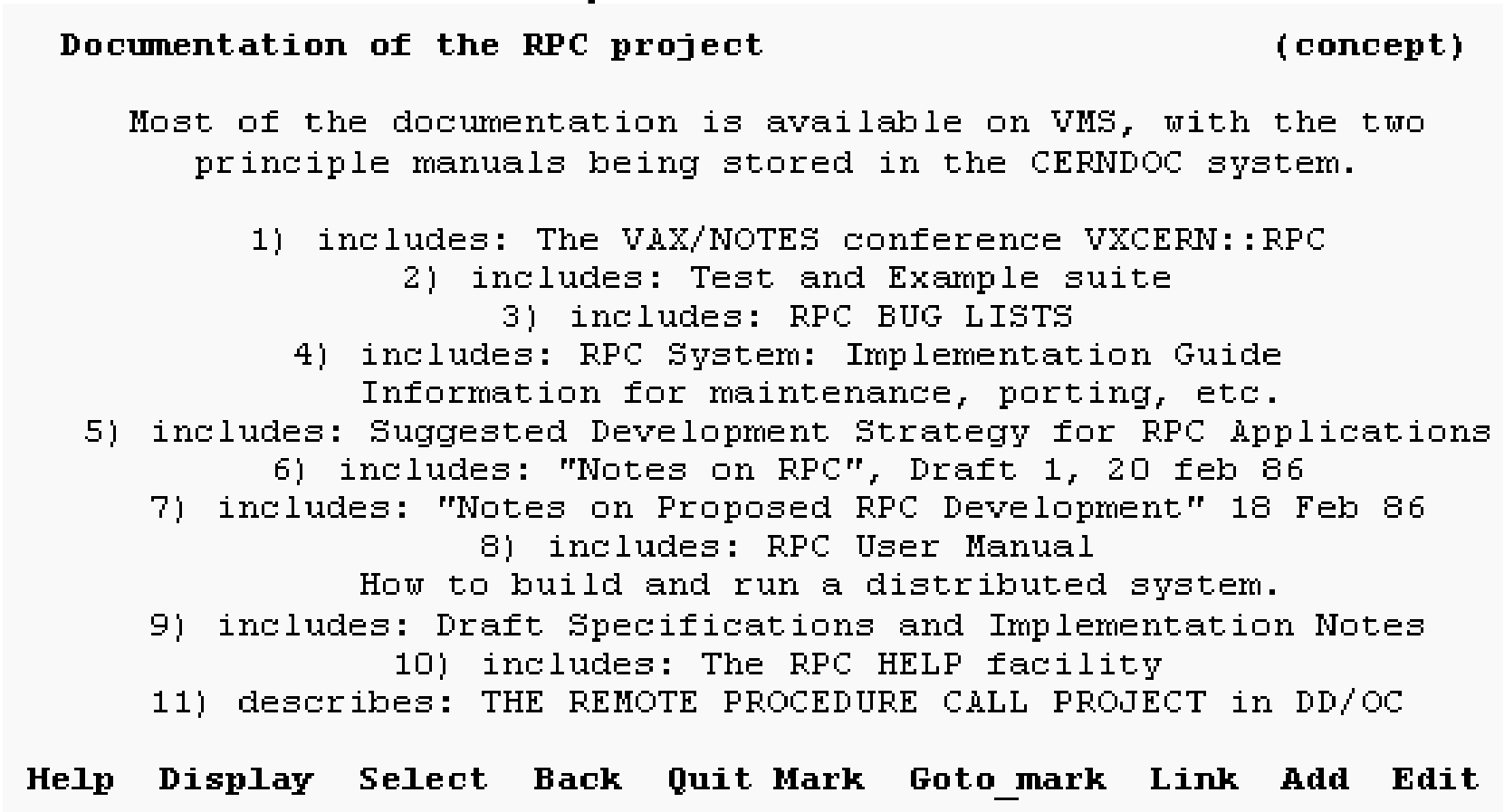


1945 → 1970 → 1990

Hypertext

Tim Berners Lee

ENQUIRE, a simple Hypertext programm which was seen as the predecessor to the WWW.



GUI

Is an interface, that allows users to interact with computer/electronic devices with images/pictures...

WIMP (Window,Icon,Menu,Pointing Device), a paradigma that is used for several types of GUI.

GUI Structural Elements
Window, Menu, Icon, Controlls...

GUI Interaction Elements
Cursor/Pointer, Selection, Adjustment handle

1950

The early days

Project SAGE (Semi-Automatic Ground Environment)

Initiated at beginning of COLD War.

Idea behind is to link **radar** to **computers** via **human operators**, thus enabling rapid calculation of the situation and performing counteractive measures.

GUI part of this project consisted of **radar display control** unit, that represents a geographical area. With **Buttons/Switches** the Operator can request specific information displayed (speed,altitude...) and can direct action. A **Light Gun** can be used to select radar tracks for display on an **external summary board**.

1950

The early days

1950

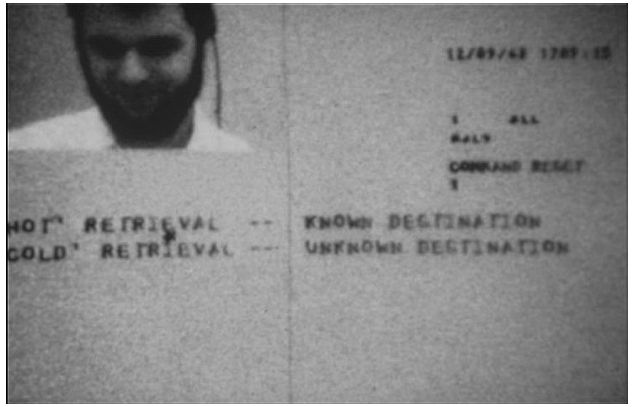
The early days

NLS Computer System

Computer System using **hypertext** links, button **mouse**, raster scan video monitor in order to cross-reference research papers for sharing among geographically distributed researchers.

Some of the NLS features are the usage of multiple windows, cross-file editing, document version control, shared screen telefone conferencing...

Was invented by Douglas Engelbert



1950

The early days

1960

Sketchpad

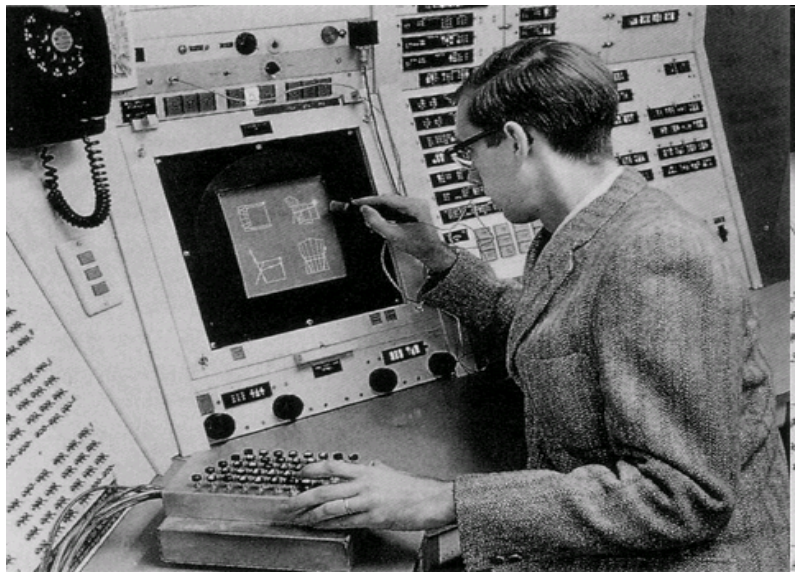
Ivan Sutherland

The Sketchpad System

The Light Pen

Lincoln TX-2 Computer

Example´s

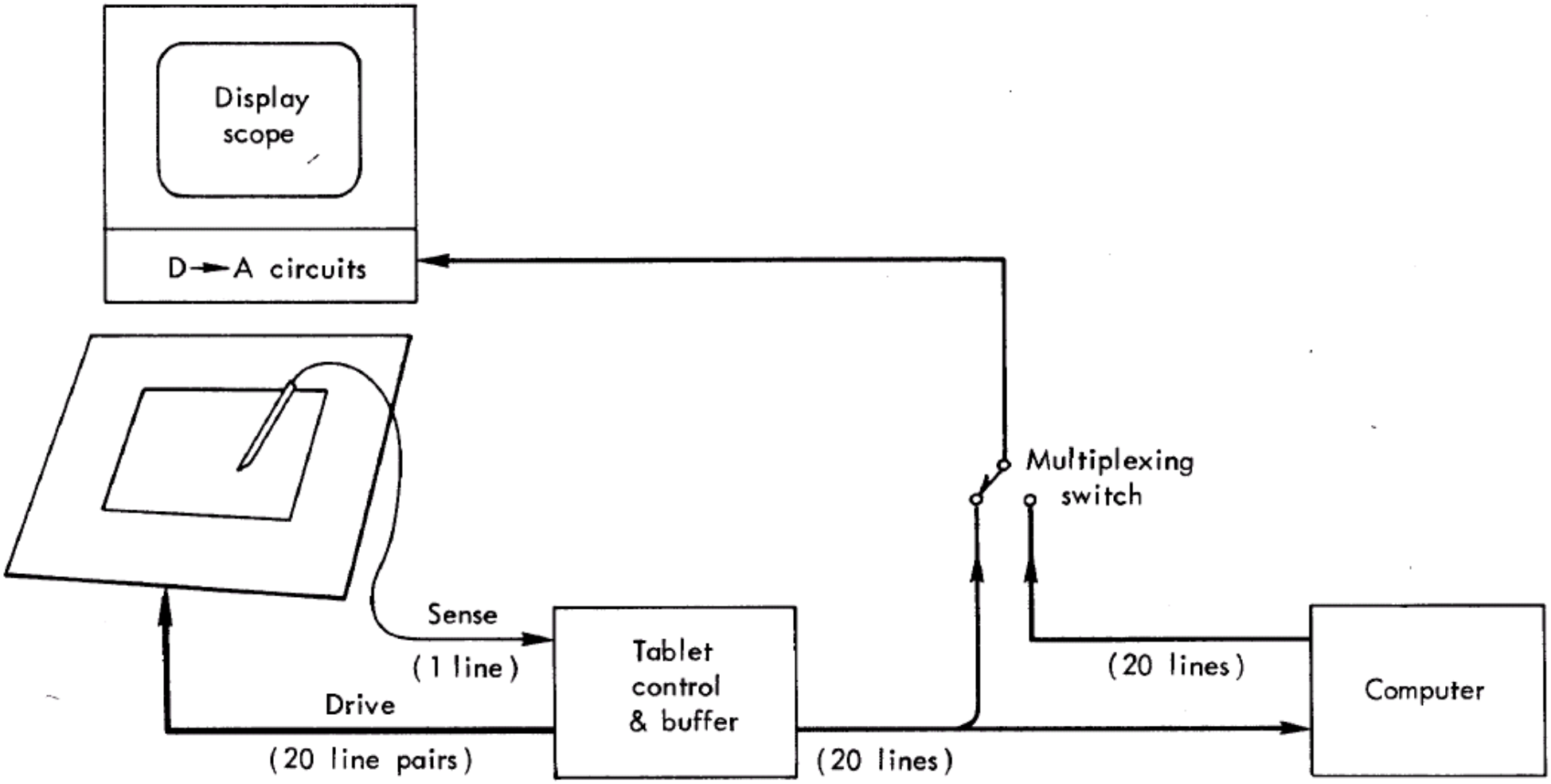


1960 → 1970

RAND Tablet

1960 → 1970

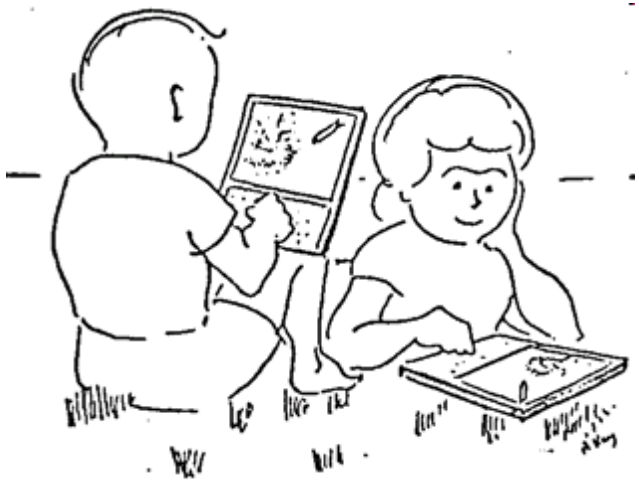
RAND Tablet

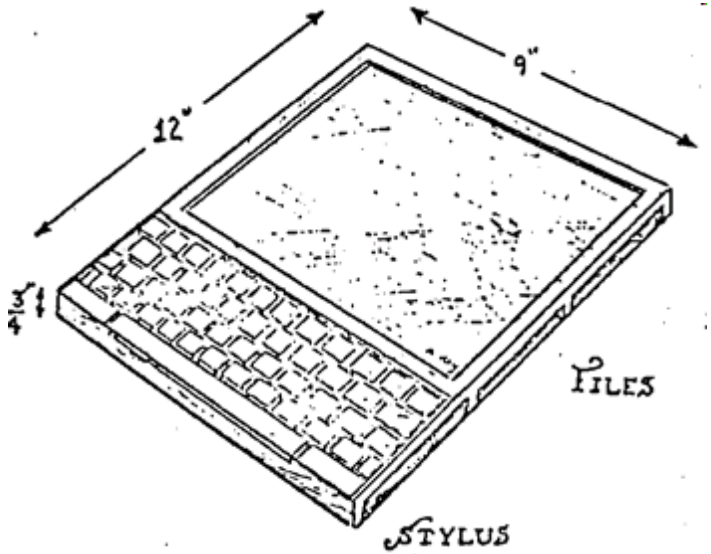


1960 1970

Dynabook

A Personal Computer for Children of All Ages





1960 → 1970

Tablets in Movies

Star Trek
1966

2001 - Space Odyssey
1968

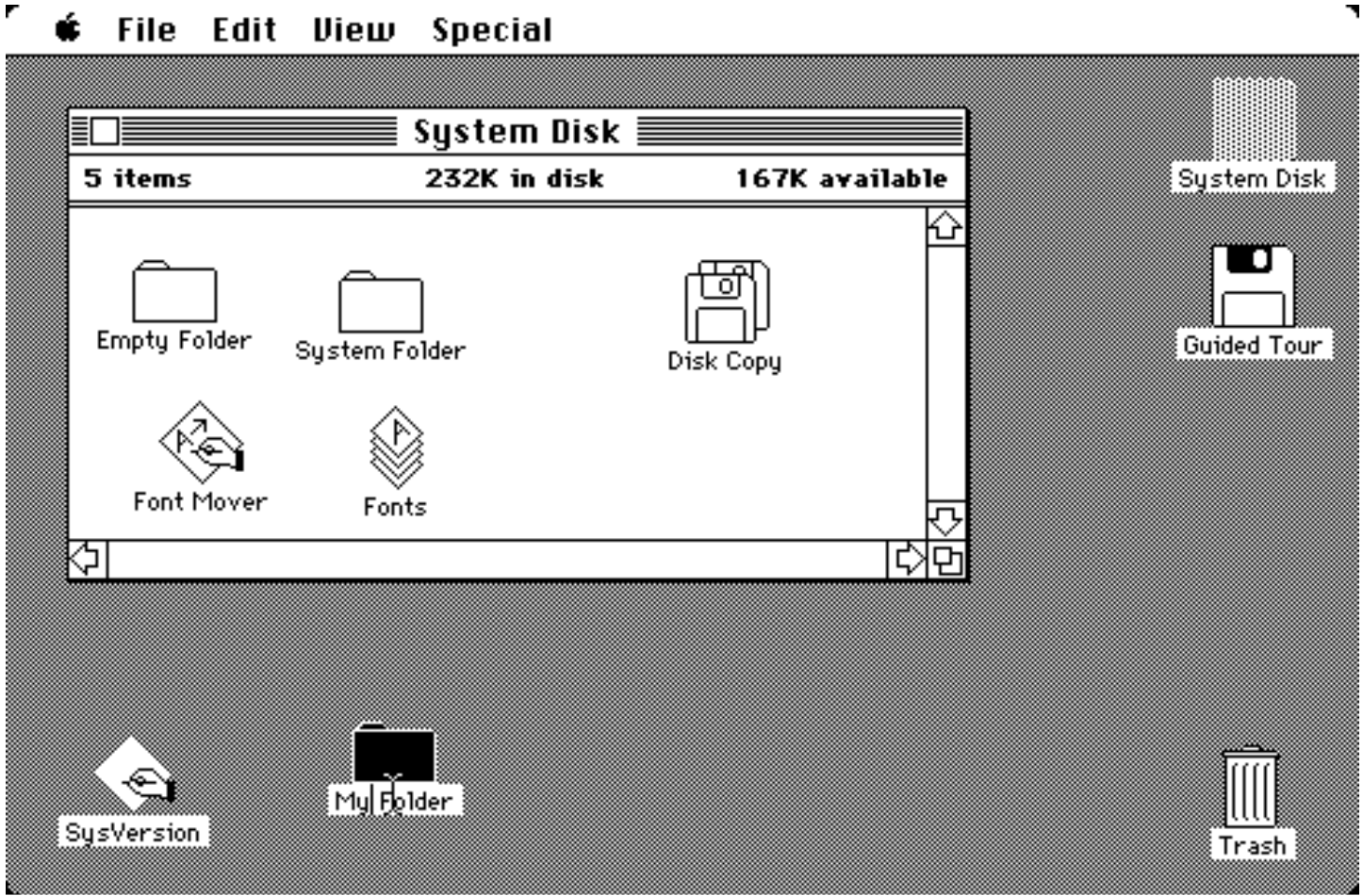
1984

The rise

MAC OS

A **graphical user interface** based Operating system introduced within the "original" Macintosh Computer.

Used **desktop metaphor** (influenced by Xerox Parc´s work)

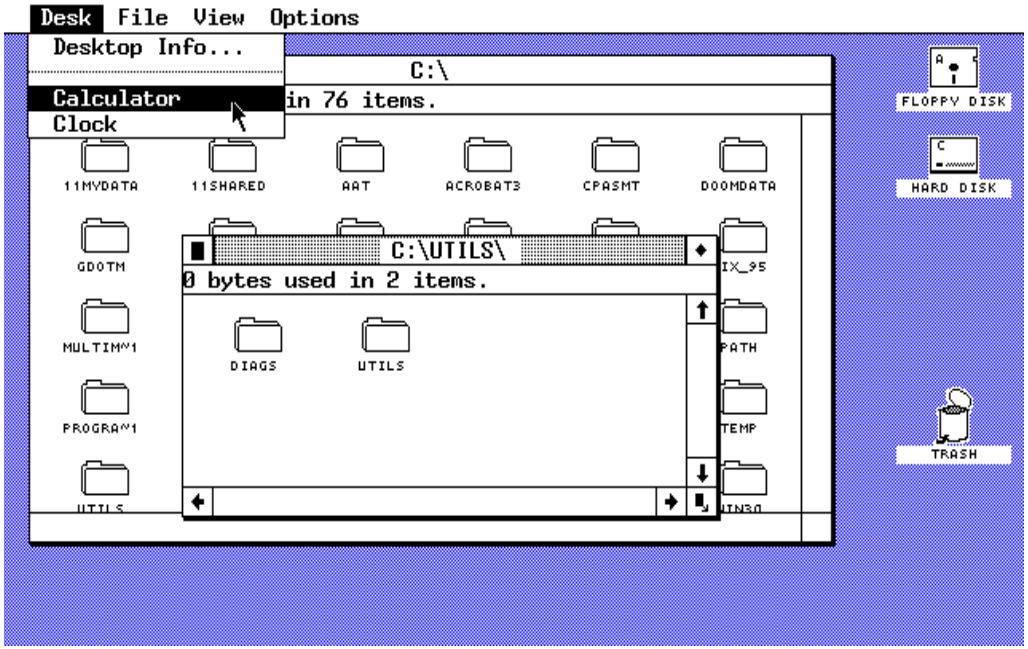


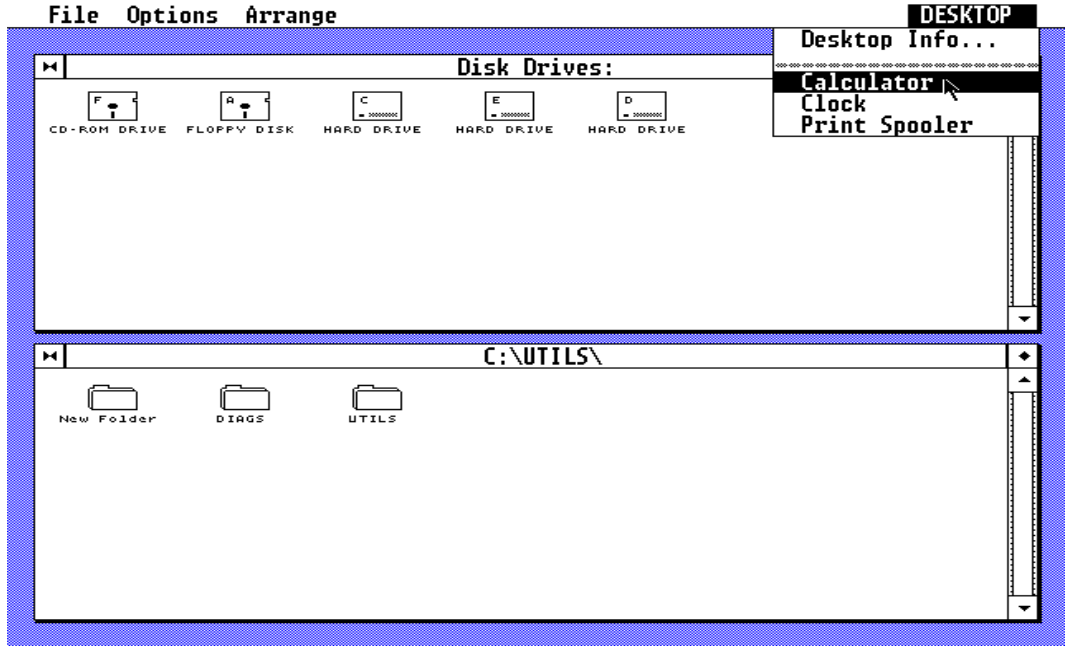
1985

The rise

GEM

Another GUI OS, that was used mostly on Atari ST Systems. Uses similar desktop methaphor and a file manager (Desktop) like MAC OS that resulted in a **license conflict** between Apple and Digital Research.



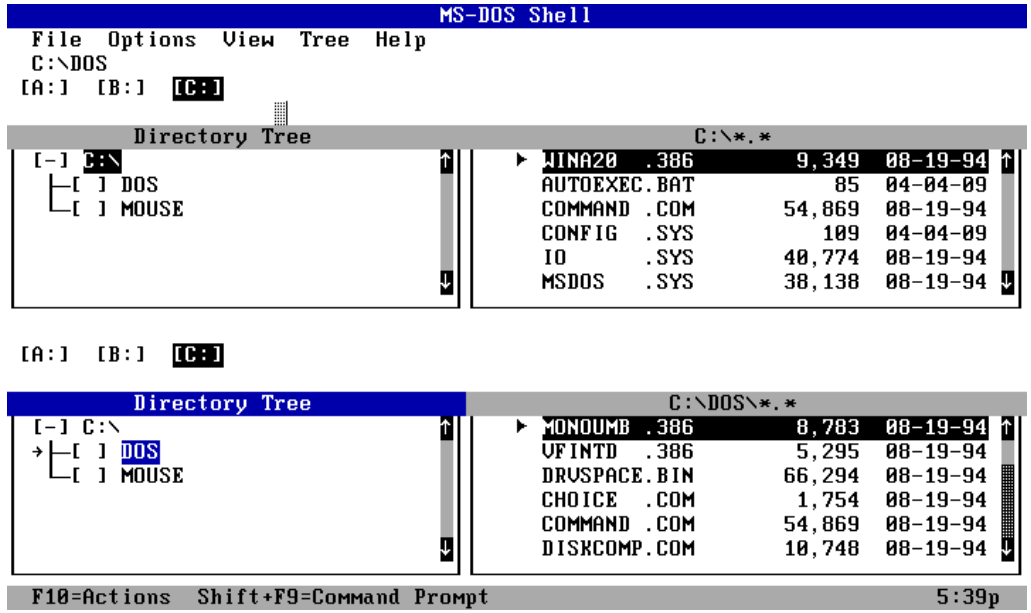


1981

The rise

DOS, Windows 1.x, 2.x

DOS as the first OS from Microsoft for the x86 Architecture Systems. It used a **Command Line Interface**, but included (in later version) typical file managers (Dos-shell) and utility programms like Norton Utilites, Deluxe Paint, Acrobat Reader and DESQuiev (for multi-tasking) in a GUI-like mode.

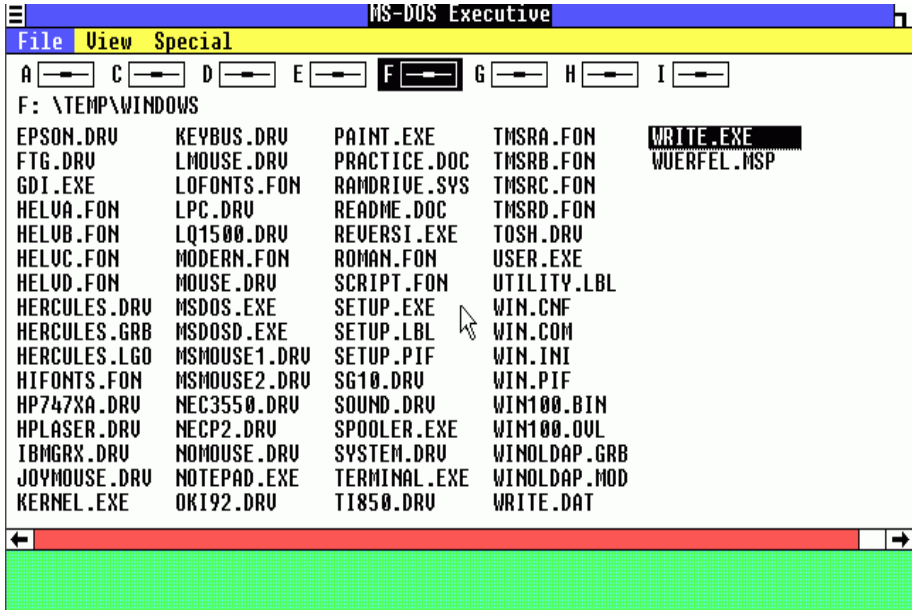


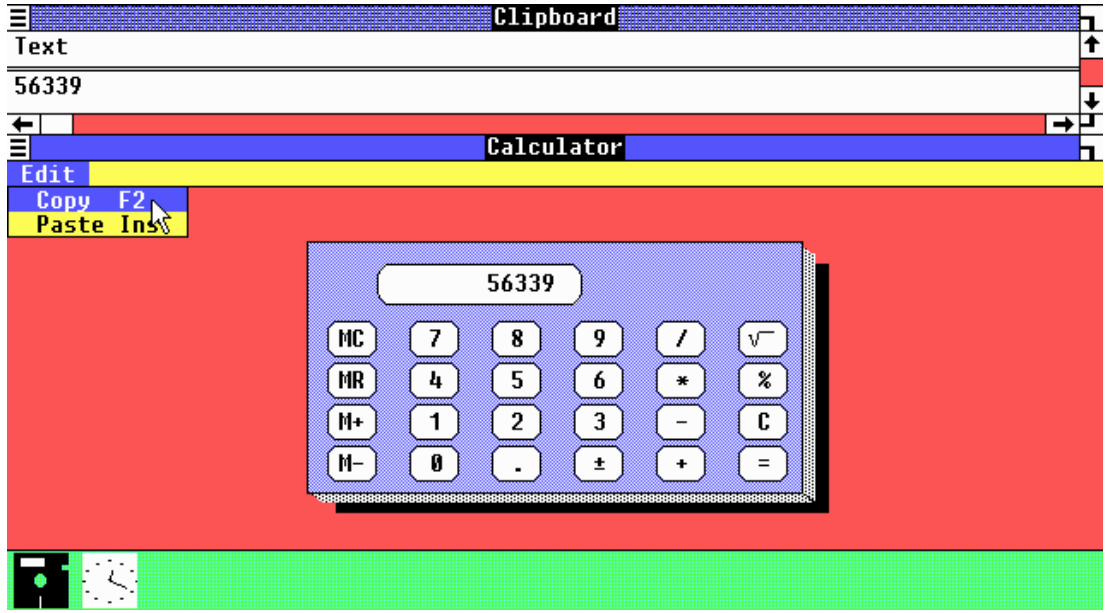
1981 → 1985

The rise

DOS, Windows 1.x, 2.x

Was released 1985 as an **update** to DOS. Main Window was a **file-manager**, where all applications could be startet. Capability of **cooperative multitasking**.





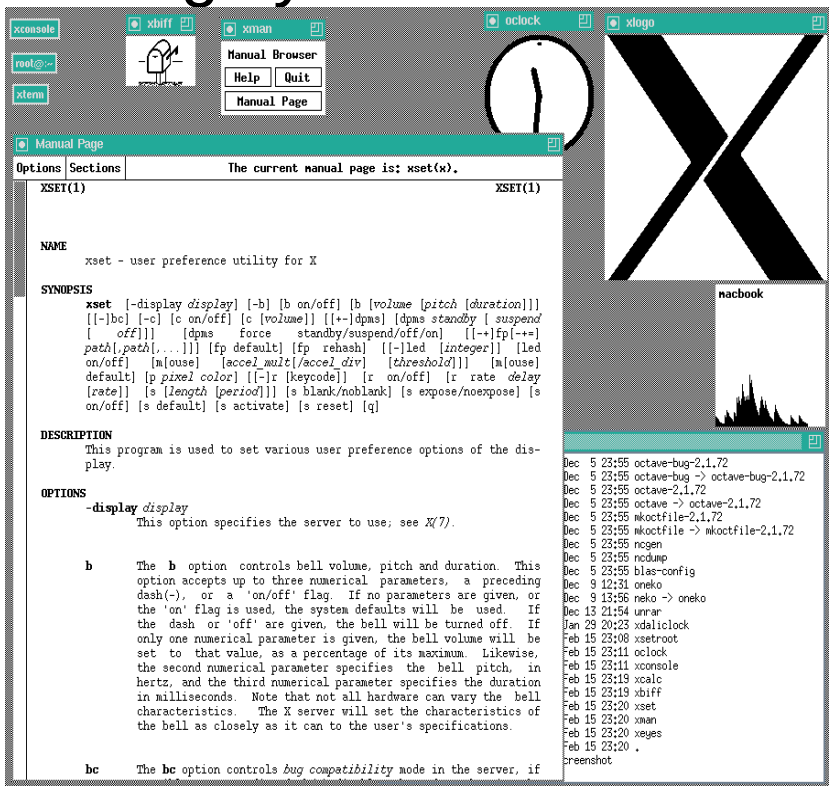
Windows 2.x was released 1987 and became more succesfull due to the included **Excel** software than Windows 1.x.

1981 → 1987

The rise

X-Window System (X11)

Enable users graphic terminals to access **remote graphics workstations** without regard to the workstation's operating system or the hardware.



Other GUIs

Amiga Workbench (Amiga), GeOs (Commodore 64)

1981 → 1987

The rise

Conclusion

Modern GUIs are based on **characteristics & principles** developed by **Apple** (e.g. Pull down menu, desktop metaphor...) at this time. Also **Human Interface Guidelines** were developed in order to force programmers to follow this Guidelines while inventing a new application.

Microsoft became succesfully first through **DOS**, since most of the **Hardware** at this time was less capable of displaying proper GUI-OS and also because of the contracts with IBM.

Mouse became more important.

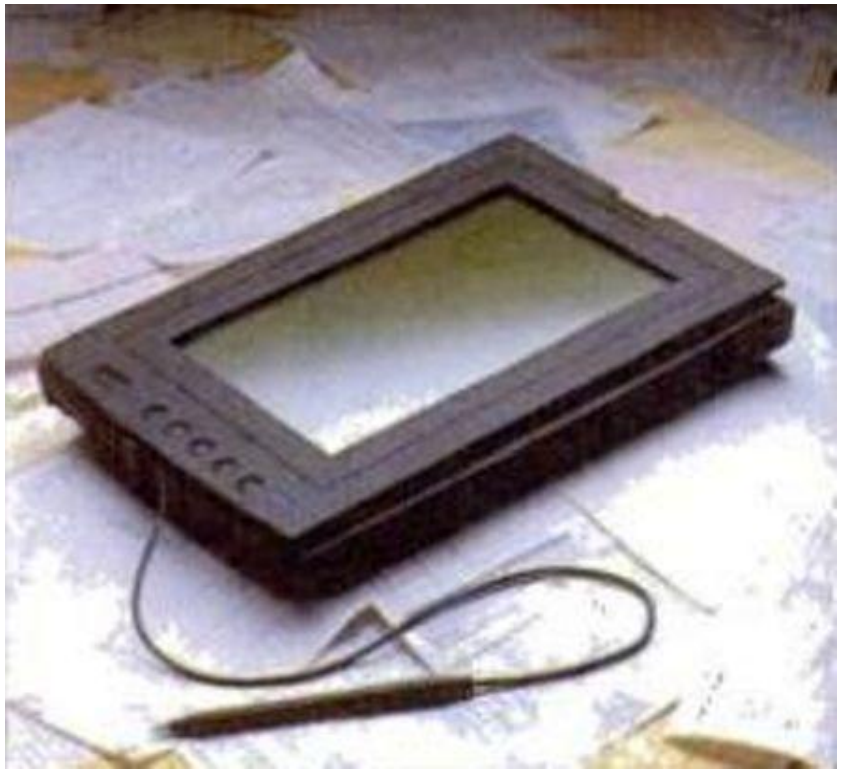
1980 → 1990

Penpad

Handwriting Recognition

1980 → 1990

Grid Pad



1990 → 2000

The rise

PDA

- Palm
- Apple Newton
- Penpad 600

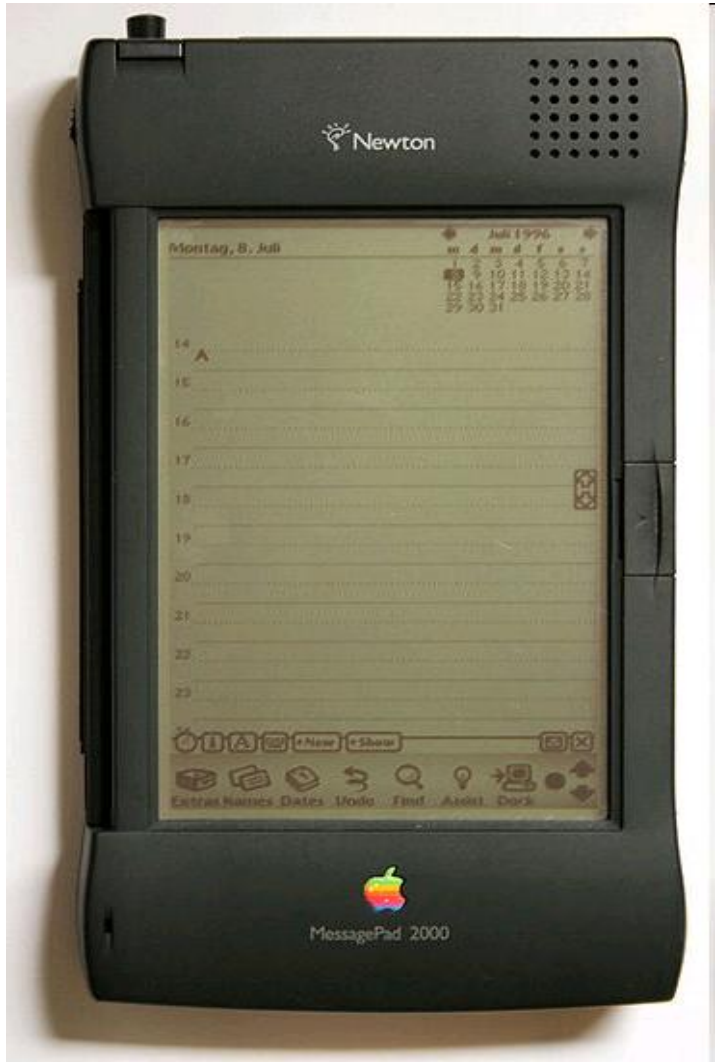
1990 → 2000

Apple Newton

1993 – 1998

Newton Message Pad

- Features
  - Pin Controlled
  - Handwriting Recognition
  - Newton Books
  - Newton OS



1990 → **2000**

Palm

The Palm Company

Palm Pilot

- **Pin Controlled**

- Palm today
  - Hewlett Packard
  - WebOS
  - Palm Pre

2000

Microsoft Tablet PC

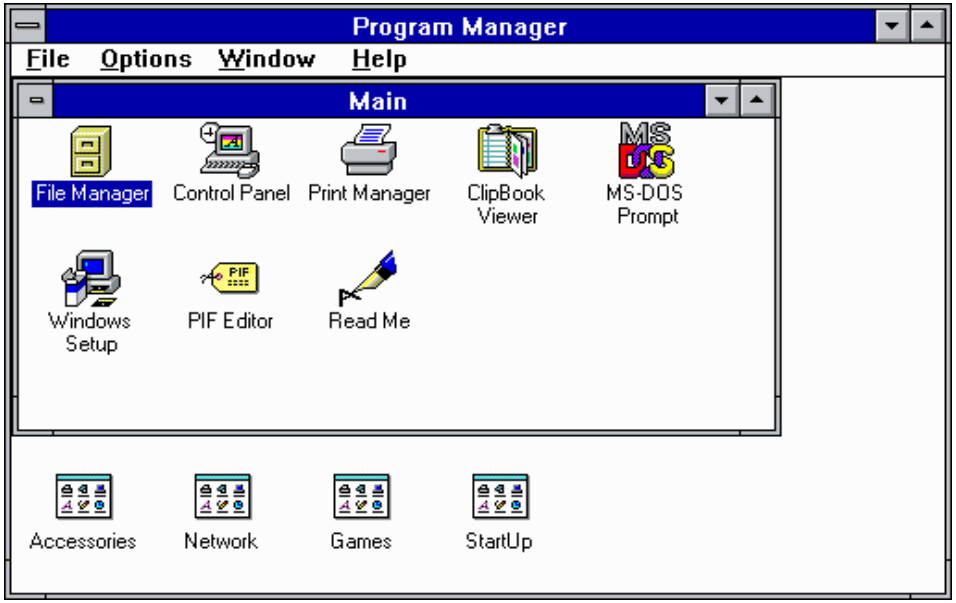
- 2002 Windows XP Tablet PC Edition
  - PEN-driven
  - Handwriting Recognition
- 2005 Touchscreens
  - Finger-driven

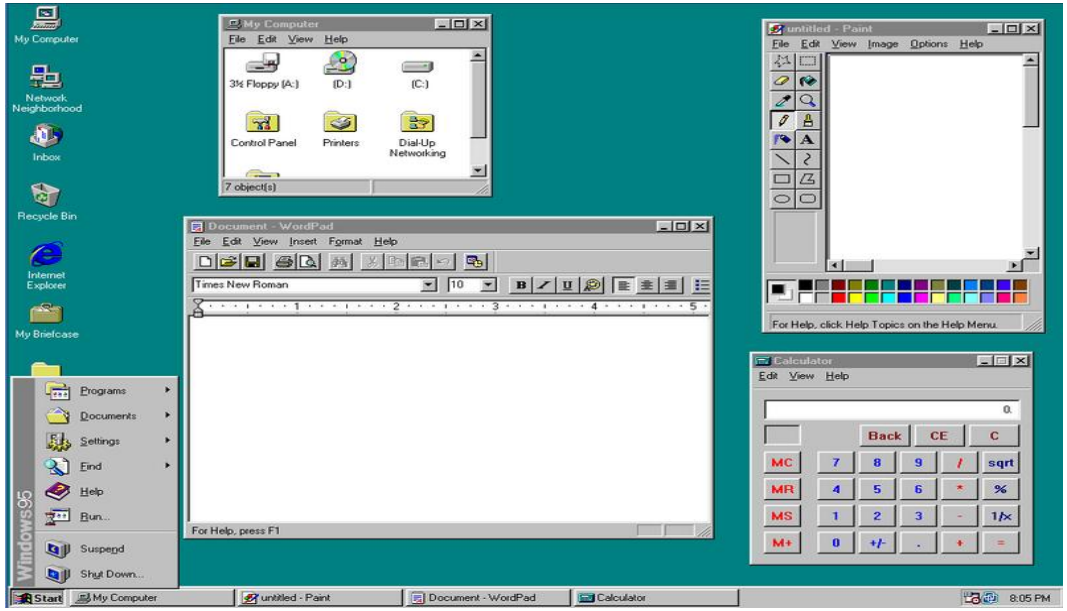
1990

The golden Age

Windows 3.x,95...

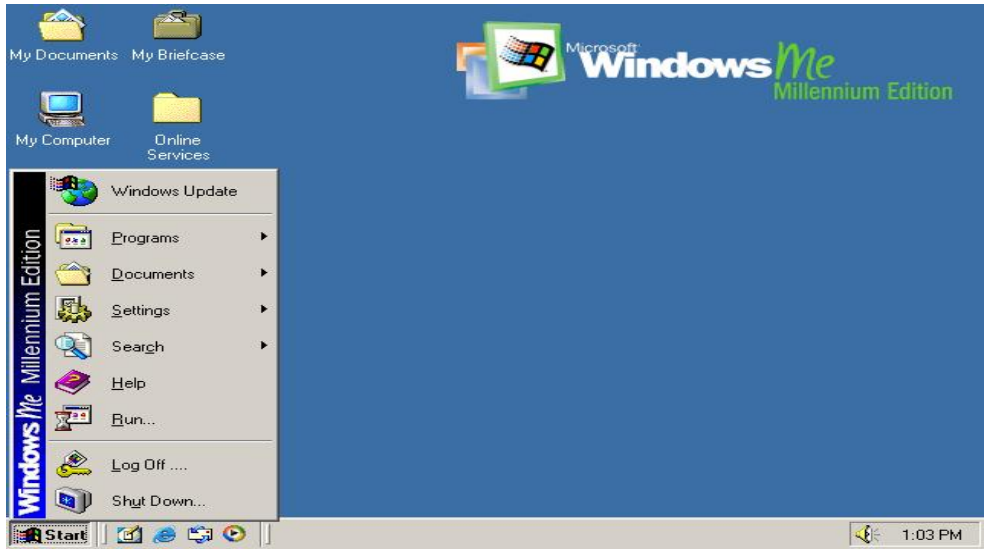
With Win 3.x MS follows the path of Apples **Desktop Metaphor**, but with more priority to new applications, especially **multimedia/network** range (Games, Internet Explorer). Furthermore the **Programm Manager** was introduced, a task oriented graphical user interface with icons arranged into groups. Win 95 came later with a cleaned up GUI using the main Start Menu and Task bar.

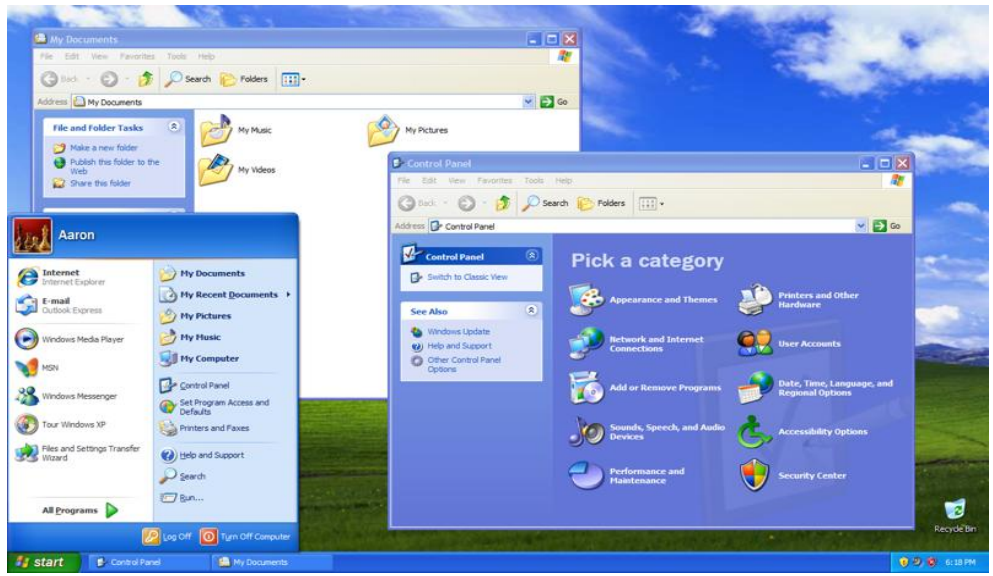




1990 → 2001

The golden Age



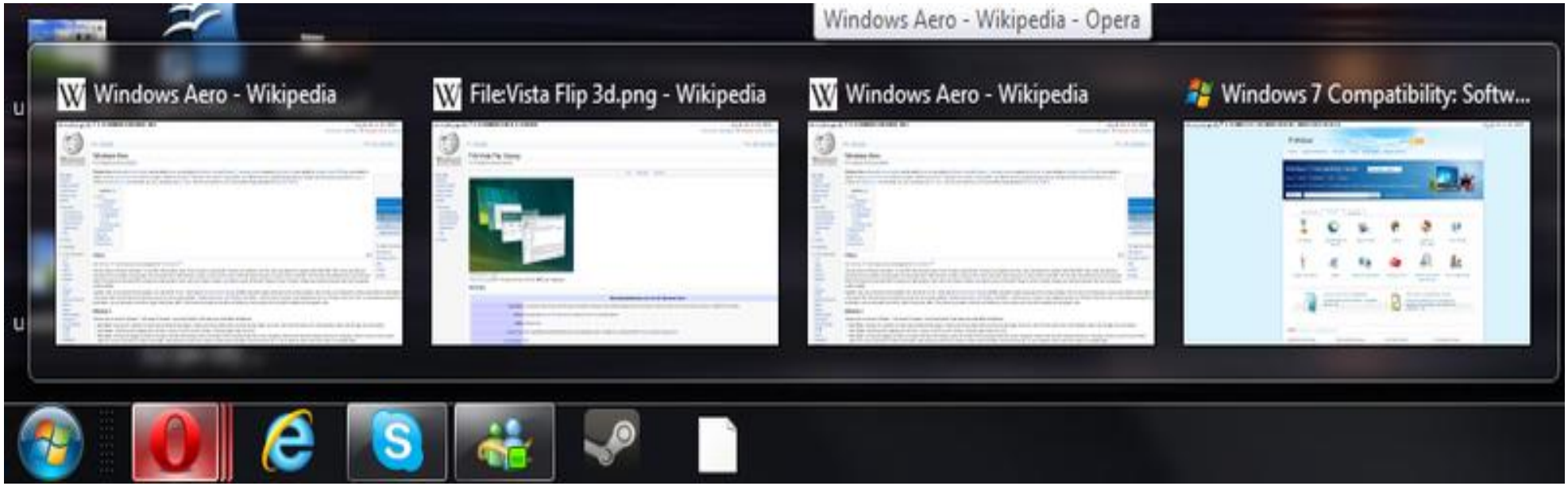


1990 → 2007

The golden Age

Windows Vista/7

Since there were introduced less recent innovations to the GUI, in Windows Vista a new Graphical User Interface called **Aero** poped up. Aero is supposed to be a more touch friendly UI including new features:
Aero Peek, Aero Shake, Aero Snap, Jump List, Flip 3D,Live Thumbnails, Sidebar ...



1990 → 2000

The golden Age

MAC OS X

At Year 2000 Apple introduced the **AQUA** Interface. Major changes included a **Dock**, which is a GUI that includes main applications in order that the user can switch fastly between them.

1990 → 2005

The golden Age

MAC OS X (Tiger 10.04)

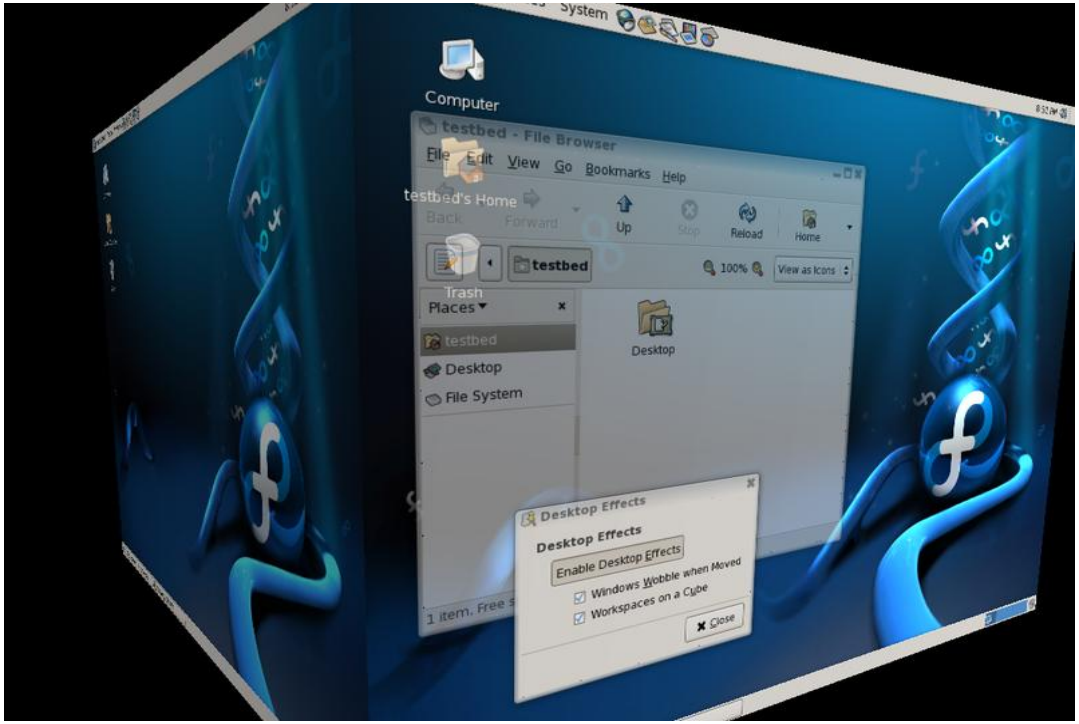
Another improvement to the GUI came with the "Tiger" Version. The so called **Dash-Board** application is a semi transparent Layer (invisible to the user) unless it is clicked at the Dock. The background is dimmed and the Dock applications (widgets) appear immedatly. User can add/delete/reorganise the widgets.

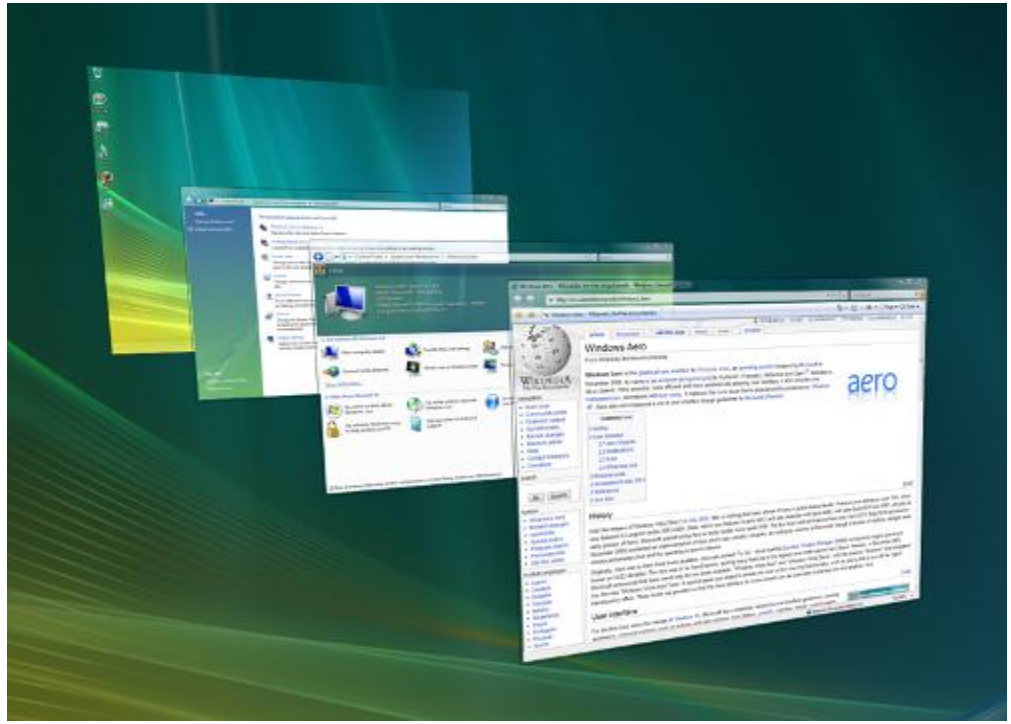
2011

The golden Age

3D User Interfaces/ Virtual Desktops

Compiz, a compositing window manager for X Window Systems allow composite desktop effects (e.g Boxing).
Windows **Flip3D**, flipping through open Windows.

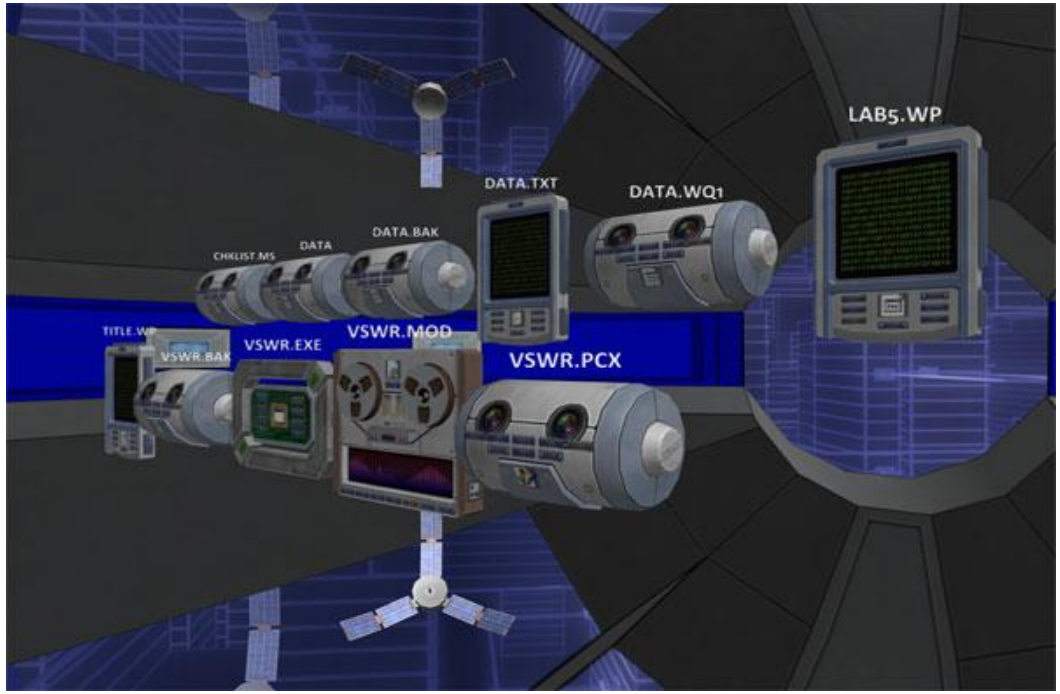


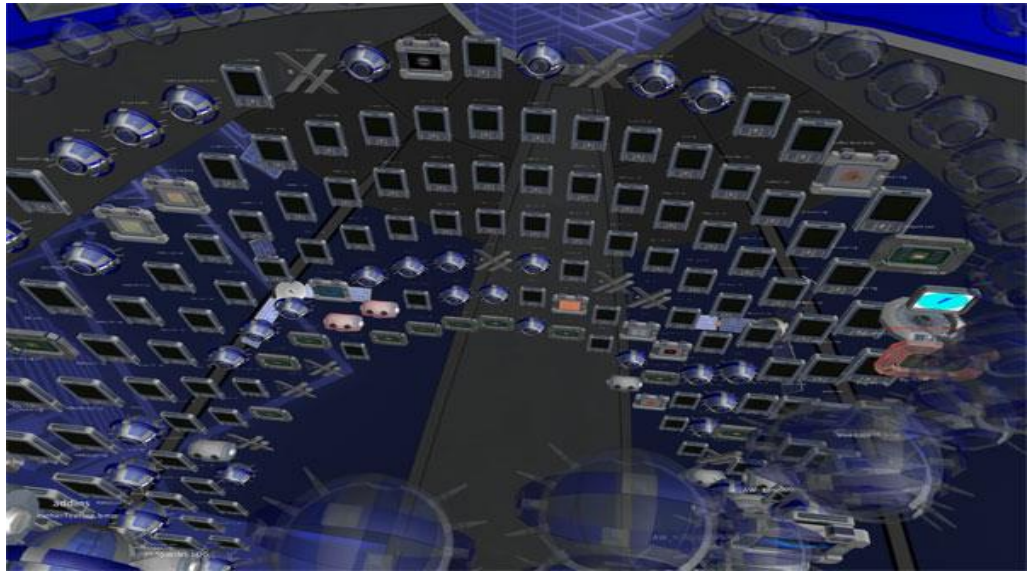


2011

The golden Age

Tactile3D





201x

Tablets today

Types of Tablets

Slate

Convertible

Hybrid

UMPC

Tablet PC – Tablet Computer

Idevices, Android, Windows Phone7, ….

Thanks for your attention!