

# Module-1 Section 1.2

Characteristics of Graphics Interface



# Contents

- Definition of Graphical Interface
- Basic User Interface Styles
- Homework:
  - List out Advantages and Disadvantages of Graphical Interface



# Definition

- A user interface : Collection of techniques and mechanisms to interact with something
- A graphical interface: The primary interaction mechanism is *a pointing device of some kind*
  - *Electronic equivalent to human hand*
- Action: People performed operations on objects
  - Pointing, Selecting, Manipulation
- Basic user interface styles (**5 Types**):
  1. Command
  2. WIMP (Windows, Icons, Menu, Pointer)
  3. Menu
  4. Forms
  5. Natural Language
  6. Any other type...



SENSORIAL EDUCATION:

MY FIVE SENSES



# 1. Command Interface

- Text based application for viewing handling and manipulating files
- 1960 – Only way to interact with Computer
- Other Names
  - cmd
  - CLI
  - Prompt
  - Console
  - Terminal
- Still used by **software developers and system administrators** to configure computers, install software and access the features that are not available in graphical interface
- Exercise in Windows Command Prompt:
  - help
  - echo I am studying UI design > test.txt
  - type test.txt
  - whoami
  - ~~shutdown /s~~

Command (Windows)	Command (Mac OS / Linux)	Description	Example
exit	exit	close the window	<b>exit</b>
cd	cd	change directory	<b>cd test</b>
cd	pwd	show the current directory	<b>cd</b> (Windows) or <b>pwd</b> (Mac OS / Linux)
dir	ls	list directories/files	<b>dir</b>
copy	cp	copy file	<b>copy c:\test\test.txt c:\windows\test.txt</b>
move	mv	move file	<b>move c:\test\test.txt c:\windows\test.txt</b>
mkdir	mkdir	create a new directory	<b>mkdir testdirectory</b>
rmdir (or del)	rm	delete a file	<b>del c:\test\test.txt</b>
rmdir /S	rm -r	delete a directory	<b>rm -r testdirectory</b>
[CMD] /?	man [CMD]	get help for a command	<b>cd /?</b> (Windows) or <b>man cd</b> (Mac OS / Linux)





# 2. WIMP Interface

- Windows – Icons – Menus – Pointer
- 1973 – Xerox Parc Lab (Inventor and Incubator of many elements of modern computing)
  - Laser Printer
  - Computer generated bitmap graphics
  - GUI with a mouse
  - WYSIWYG text editor
  - Ethernet
  - OOP – Smalltalk
  - Prototype based programming – Self
  - Model View Controller (MVC)
  - AspectJ (extension for Java)

**1973**

XEROX ALTO, first computer with a graphical user interface  
*based on the desktop metaphor and driven by a mouse*  
*not for the market, but for the Xerox Parc research*

"pictures rather than text commands"

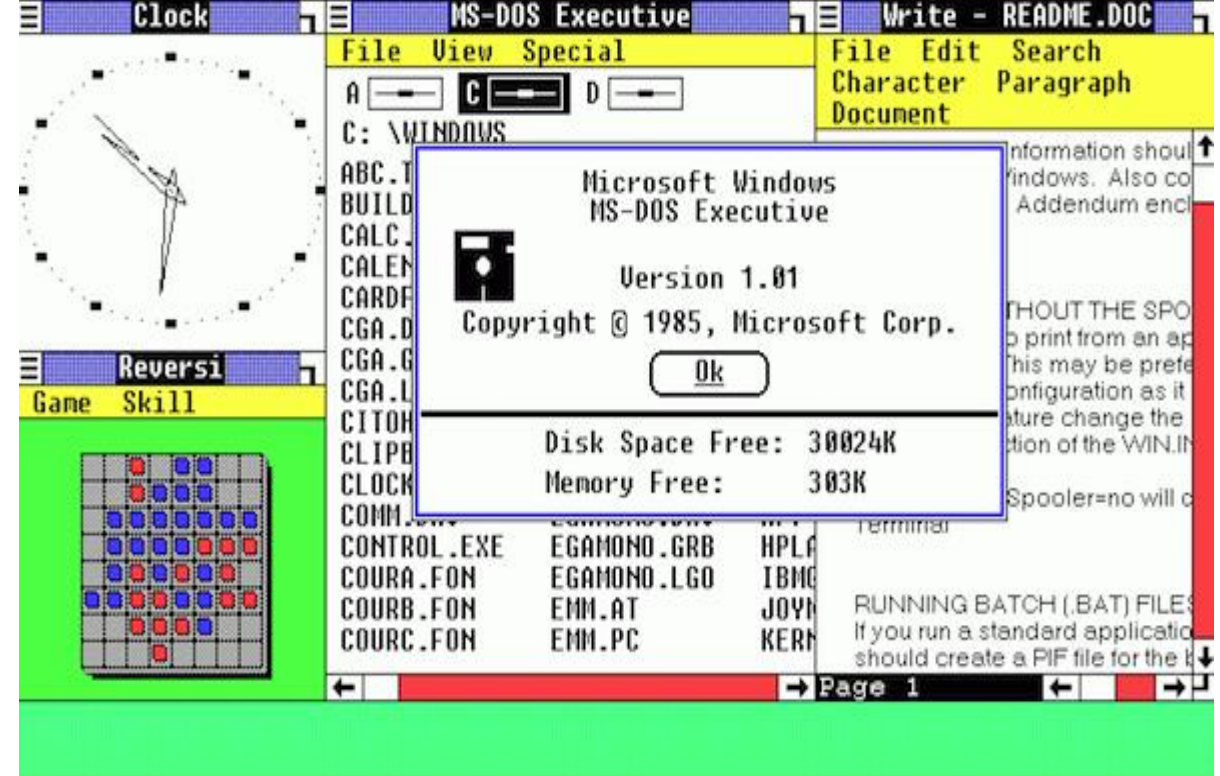
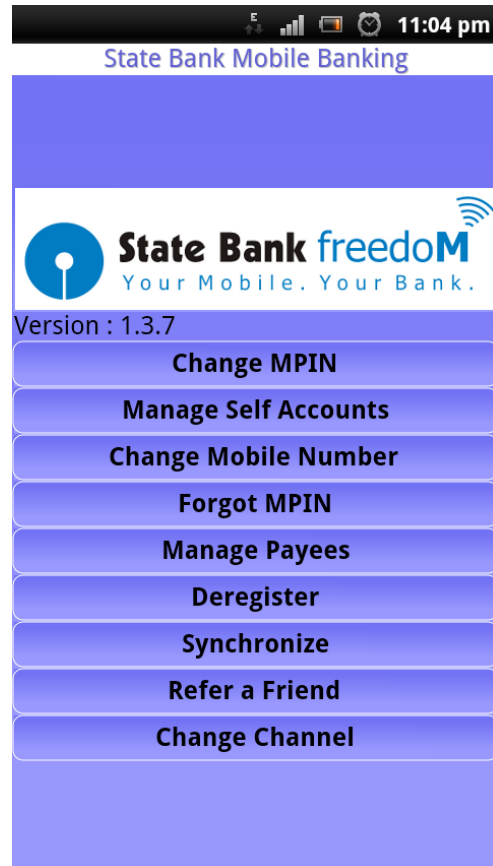
**WIMP**

- W**indows = fenêtres superposées
- I**cons = icônes cliquables
- M**enus = menus déroulants
- P**ointing device = souris



# 3.Menu based Interface

- Menu : Commands organized into logical groups
- Sub Menu: Further related list of sub functions
- Text based application for viewing handling and manipulating files



# 4. Form based Interface

- CRUD: Create – Retrieve – Update – Delete
- Query by Example:
  - Users who don't know **SQL** can easily work with database records which are similar to the Information entered.
  - Example: Online application, Bank, Hospital,...
- Google Patent (2005-2026)
  - Form based user interface for Controlling and messaging

<https://patents.google.com/patent/US20060177013>

System File Edit Database Record Program Window Browse

CUSTOMER

Cust\_id 000000  
Company DataTech Inc.  
Contact N. Baker  
Address1 480 Ullage St.  
Address2 Suite 102  
City Bowling Green  
State OH  
Zip 43402  
Taxrate 5.00  
Comments Memo

Cust\_id 000001  
Company L.H.H.F. of America  
Contact Shelby T. Chapman, President  
Address1 3222 Dodds Avenue  
Address2 Suite 3

CHANGE

ManageView

VIEW MY LEAVE

Date of submission

Employee Name

Employee Designation

Department

Type of leave

Supervisor In-Charge

Start Date

End Date

Total Days

My Comment

Search by :  Search Listing View My MC View HR comment View Supervisor comment View Office MGR comment

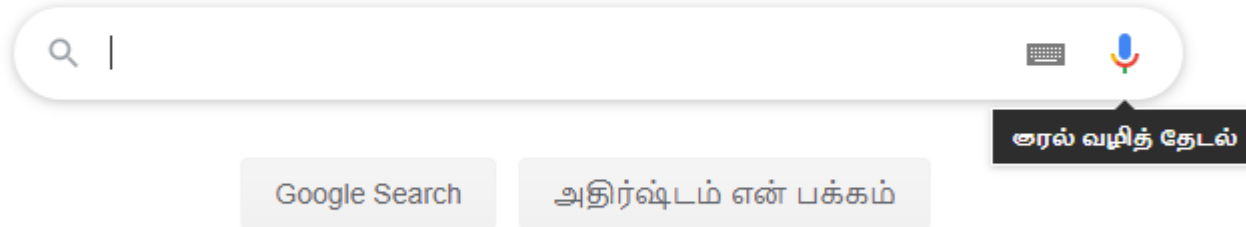
Leave Taken

	EmployeeName	Annual	Medical	Compassionate	Others
▶	Tom	0	0	0	0
*					

Back

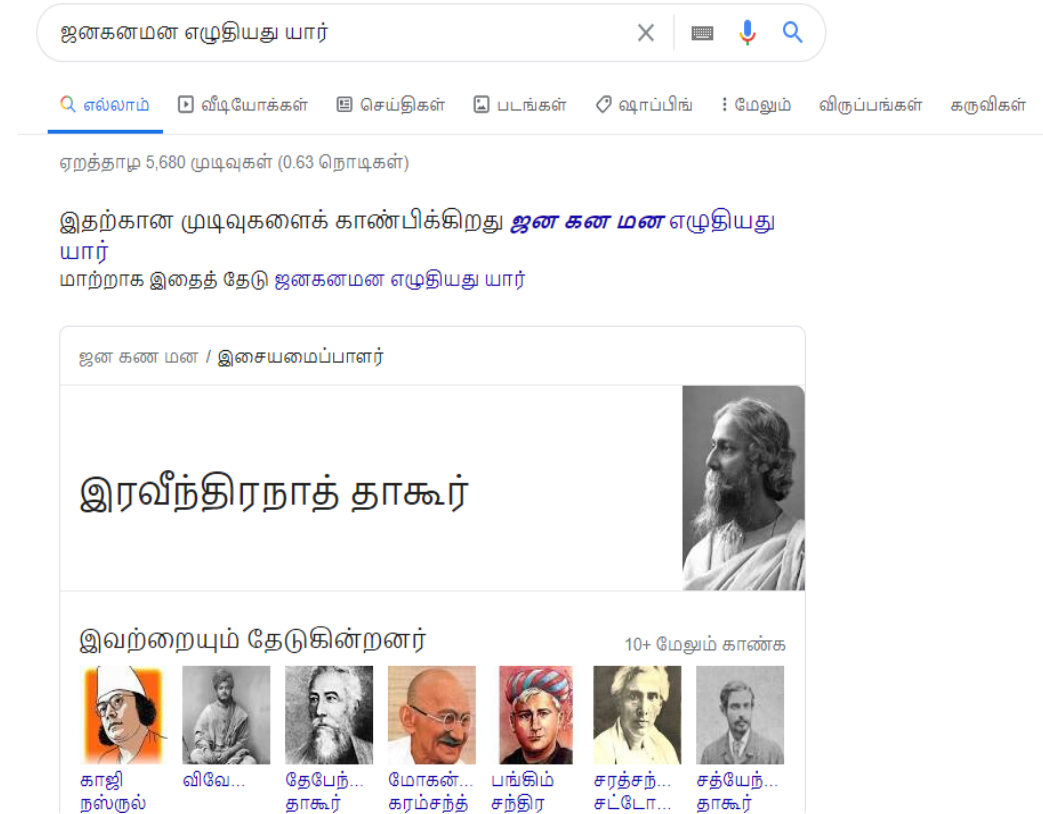
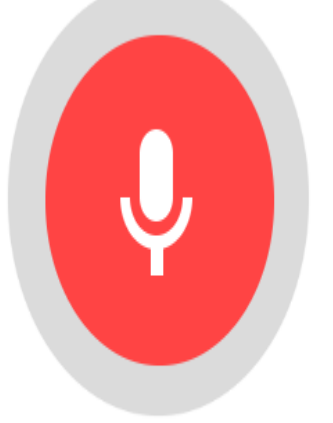
# 5. Natural Language Interface

- Verbs, Phrases and clauses act as UI controls for Creating, Selecting and Modifying data in software applications
- ELIZA (1964-66), MIT**
- SHRDLU (1968-70) , MIT**
- Siri – Apple
- ...
- Google.co.in



Google இதில் வழங்குகிறது: English हिन्दी বাংলা తెలుగు मराठी ગુજરાતી ಕನ್ನಡ മലയാളം ਪੰਜਾਬੀ

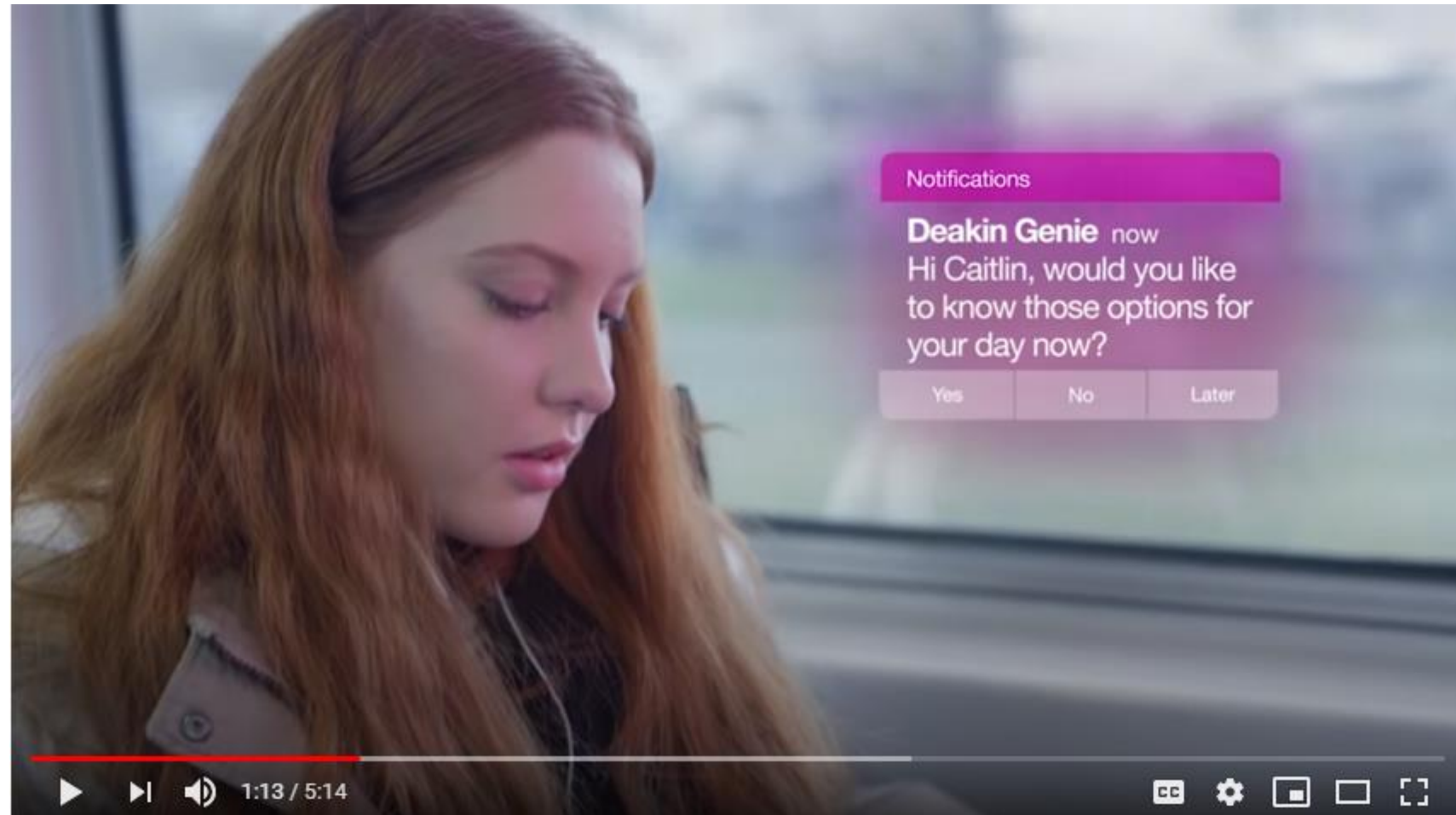
ஜனகணமன எழுதியது  
யார்





# 6. Other types of interaction style:

- Question Answering
- Query Dialog
- Point and Click
- Gesturing
- Gaze Detection
- Pen based Interaction
- More....



<https://www.youtube.com/watch?v=zsRPuU53E74>



# Popularity of Graphics:

- Text based screen vs graphic screen
- Text replaced by graphical images/icons which represents objects/actions.

```
Menu Utilities Compilers Options Status Help

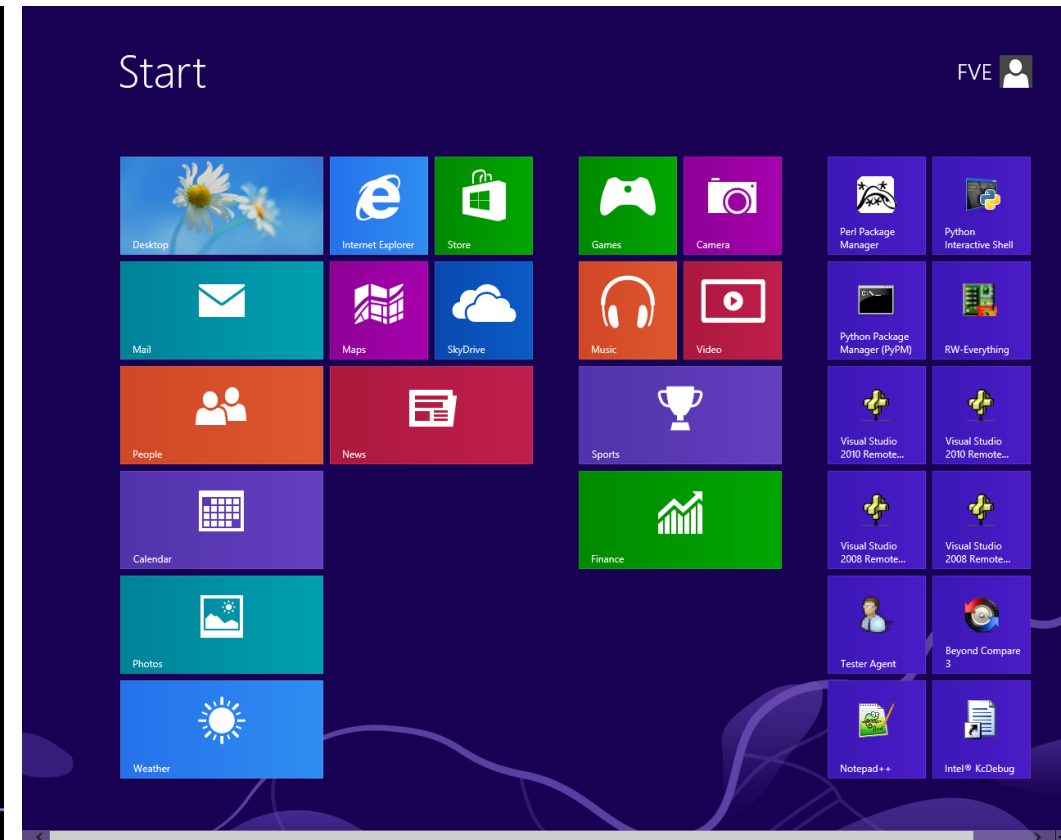
ISPSP Primary Option Menu
More: +

0 Settings      Terminal and user parameters   User ID . : TRNG200
1 View          Display source data or listings  Time. . . : 11:54
2 Edit          Create or change source data     Terminal. : 3278
3 Utilities     Perform utility functions       Screen. . : 1
4 Foreground    Interactive language processing  Language. : ENGLISH
5 Batch         Submit job for language processing Appl ID . : ISP
6 Command       Enter TSO or Workstation commands TSO logon : IKJACCNT
7 Dialog Test   Perform dialog testing          TSO prefix: TRNG200
9 IBM Products  IBM program development products System ID  : ATHENA
                                         MVS acct. : ACCT#
                                         Release . : ISPF 5.8

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Option ==>
F1=Help      F2=Split    F3=Exit     F7=Backward F8=Forward  F9=Swap
F10=Actions  F12=Cancel

MA a 22/014
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# HOME WORK:

- Identify and List out the advantages and disadvantages of Graphical Interface.

