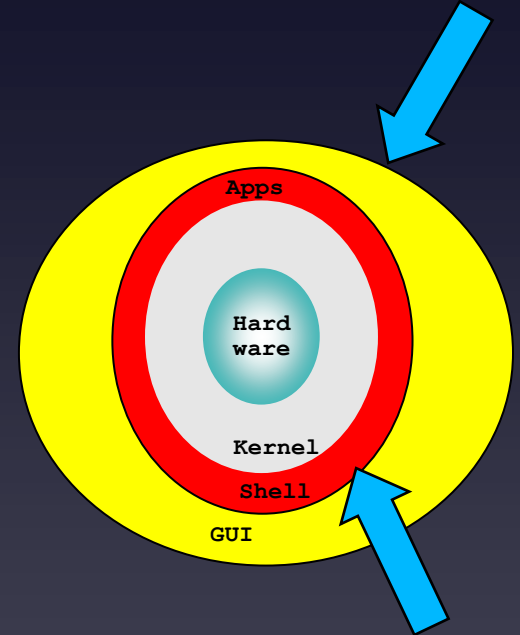# 31268 Web Systems

Week 1: Operating Systems
Part 3: GUI vs CLI

31268 Web Systems

Week 1

Operating Systems
(User Interfaces)

GUI vs Command Line

Apps

Hardware

Kernel

Shell

GUI

Computer Interfaces

- **The Command Line Interface (CLI).**

  Interact through the **keyboard** and a monitor which only prints **text**.

Computer Interfaces

- **The Command Line Interface (CLI).**

    Interact through the **keyboard** and a monitor which only prints **text**.

- **The Graphical User Interface (GUI).**

    Interact via **windows, icons, menu, pointer device**
        *called "**WIMP**" interface* ☺

Well Known CLI's

Command Line Interfaces

- **sh** 1969: predecessor of **bash**, csh
- **CPM** 1973: predecessor of **MS-DOS**
- **cmd.exe** – windows shell

wikipedia

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Well Known CLI's

Command Line Interfaces

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GUIs

1983: Apple – Lisa, Mac OS

1984: Unix - Gnome, KDE

1985: Microsoft – Windows 1.0

2001: Apple – Mac OS X &
        Microsoft Windows XP

2006: Microsoft Vista Aero

2010: Microsoft Metro

wikipedia

GUI vs CLI – which is better ?

- "Holy Wars" have been waged over which is the better interface.

- Neither of them is "better".
  → Each of them has an appropriate and important role in computing.

- Both the CLI and the GUI have their strengths and weaknesses.

Why have multiple interfaces?

- Customisation

Why have multiple interfaces?

- Customisation

- Automation

Why have multiple interfaces?

- Customisation

- Automation

- Understanding

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The Graphical User Interface

<u>Strengths</u>

- Little/no experience required

- Good for graphics e.g.
  → artwork, desktop
  publishing,

- User friendly, **intuitive**

- **Hides complexity from users.**

The Graphical User Interface

Strengths

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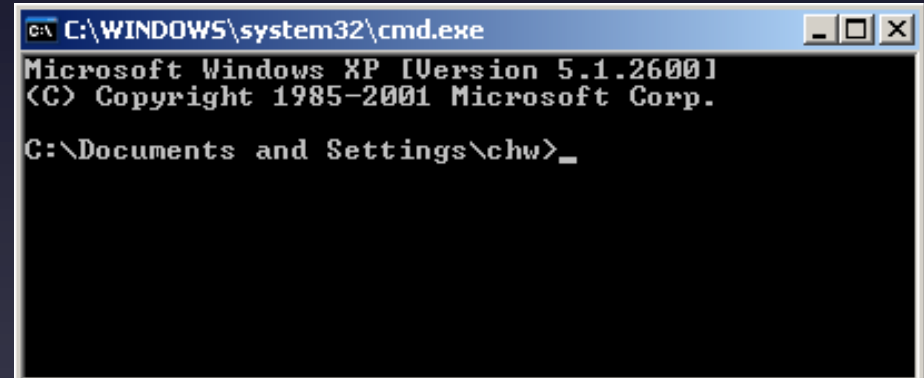
Weaknesses

- Can't do everything.
  → Using keyboard can be faster.

- Can crash the system!

- User is unsure of what the O/S is **really** doing.

- Slows computer down

- Needs better hardware

- **Hides complexity from users.**

The Command Line Interface

<u>Strengths</u>

- Greater flexibility

- Fine tuning, → parameters

- Essential for system administration

- Faster, less overhead

- Runs on simple hardware.

- Can run remotely

- Robust - Difficult to crash.

```
C:\WINDOWS\system32\cmd.exe

Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\chw>_
```

The Command Line Interface

Strengths

- Greater flexibility

- Fine tuning, → parameters

- Essential for system administration

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- Can run remotely

- Robust - Difficult to crash.

Weaknesses

- Hard to learn
  → cryptic commands & parameters

- Multiple options
  → more than 1 way to do things

- Output often cryptic or non-existent

- Inconsistent commands
  → different versions of Unix? DOS?

- No graphics

- No safety net
  → 'expert mode'

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Next module

- We will continue with the command line interface to look at scripting