Stands for "Graphical User Interface" and is pronounced "gooey." It is a [user interface](https://techterms.com/definition/user_interface) that includes graphical elements, such as[windows](https://techterms.com/definition/window), [icons](https://techterms.com/definition/icon) and buttons. The term was created in the 1970s to distinguish graphical interfaces from text-based ones, such as[command line interfaces](https://techterms.com/definition/command_line_interface). However, today nearly all [digital](https://techterms.com/definition/digital) interfaces are GUIs.

The first commercially available GUI, called "PARC," was developed by Xerox. It was used by the Xerox 8010 Information System, which was released in 1981. After Steve Jobs saw the [interface](https://techterms.com/definition/interface) during a tour at Xerox, he had his team at Apple develop an operating system with a similar design. Apple's GUI-based OS was included with the [Macintosh](https://techterms.com/definition/macintosh), which was released in 1984. Microsoft released their first GUI-based OS, [Windows](https://techterms.com/definition/windows) 1.0, in 1985.

For several decades, GUIs were controlled exclusively by a [mouse](https://techterms.com/definition/mouse) and a [keyboard](https://techterms.com/definition/keyboard). While these types of [input devices](https://techterms.com/definition/inputdevice) are sufficient for [desktop computers](https://techterms.com/definition/desktop_computer), they do not work as well for mobile devices, such as [smartphones](https://techterms.com/definition/smartphone) and [tablets](https://techterms.com/definition/tablet). Therefore, mobile operating systems are designed to use a [touchscreen](https://techterms.com/definition/touchscreen) interface. Many mobile devices can now be controlled by spoken commands as well.

Because there are now many types of digital devices available, GUIs must be designed for the appropriate type of [input](https://techterms.com/definition/input). For example, a desktop operating system, such as [OS X](https://techterms.com/definition/os_x), includes a [menu bar](https://techterms.com/definition/menubar) and windows with small icons that can be easily navigated using a mouse. A mobile OS, like [iOS](https://techterms.com/definition/ios), includes larger icons and supports touch commands like[swiping](https://techterms.com/definition/swipe) and pinching to zoom in or zoom out. Automotive interfaces are often designed to be controlled with knobs and buttons, and TV interfaces are built to work with a remote control. Regardless of the type of input, each of these interfaces are considered GUIs since they include graphical elements.

**NOTE:** Specialized GUIs that operate using speech recognition and motion detection are called natural user interfaces, or [NUIs](https://techterms.com/definition/nui).

A GUI (usually pronounced GOO-ee) is a graphical (rather than purely textual) user interface to a computer. As you read this, you are looking at the GUI or graphical user interface of your particular Web [browser](http://searchwindevelopment.techtarget.com/definition/browser). The term came into existence because the first interactive user interfaces to computers were not graphical; they were text-and-keyboard oriented and usually consisted of commands you had to remember and computer responses that were infamously brief. The command interface of the [DOS](http://searchsecurity.techtarget.com/definition/DOS)operating system (which you can still get to from your Windows operating system) is an example of the typical user-computer interface before GUIs arrived. An intermediate step in user interfaces between the command line interface and the GUI was the non-graphical *menu-based interface*, which let you interact by using a [mouse](http://searchexchange.techtarget.com/definition/mouse) rather than by having to type in keyboard commands.

Today's major operating systems provide a graphical user interface. Applications typically use the elements of the GUI that come with the operating system and add their own graphical user interface elements and ideas. A GUI sometimes uses one or more metaphors for objects familiar in real life, such as the [desktop](http://searchwinit.techtarget.com/definition/desktop), the view through a window, or the physical layout in a building. Elements of a GUI include such things as: windows, pull-down menus, buttons, scroll bars, iconic images, wizards, the mouse, and no doubt many things that haven't been invented yet. With the increasing use of multimedia as part of the GUI, sound, voice, motion video, and virtual reality interfaces seem likely to become part of the GUI for many applications. A system's graphical user interface along with its input devices is sometimes referred to as its "look-and-feel."

The GUI familiar to most of us today in either the Mac or the Windows operating systems and their applications originated at the Xerox Palo Alto Research Laboratory in the late 1970s. Apple used it in their first Macintosh computers. Later, Microsoft used many of the same ideas in their first version of the Windows operating system for IBM-compatible PCs.

When creating an application, many object-oriented tools exist that facilitate writing a graphical user interface. Each GUI element is defined as a [class](http://whatis.techtarget.com/definition/class) [widget](http://whatis.techtarget.com/definition/widget) from which you can create [object](http://searchsoa.techtarget.com/definition/object) instances for your application. You can code or modify prepackaged methods that an object will use to respond to user stimuli.

GUI

Updated: 10/30/2017 by Computer Hope

Short for **Graphical User Interface**, a **GUI** (pronounced as either G-U-I or gooey) allows the use of [icons](https://www.computerhope.com/jargon/i/icon.htm) or other visual indicators to interact with electronic devices, rather than using only text via the [command line](https://www.computerhope.com/jargon/c/commandi.htm). For example, all versions of Microsoft Windows utilize a GUI, whereas [MS-DOS](https://www.computerhope.com/jargon/m/msdos.htm) does not. The GUI was first developed at [Xerox PARC](https://www.computerhope.com/jargon/x/xparc.htm) by [Alan Kay](https://www.computerhope.com/people/alan_kay.htm), [Douglas Engelbart](https://www.computerhope.com/people/douglas_engelbart.htm), and a group of other researchers in [1981](https://www.computerhope.com/history/1981.htm). Later, [Apple](https://www.computerhope.com/comp/apple.htm) introduced the Lisa computer, the first commercially available computer, on January 19, [1983](https://www.computerhope.com/history/1983.htm).

* [GUI overview](https://www.computerhope.com/jargon/g/gui.htm#gui)
* [How does a GUI work?](https://www.computerhope.com/jargon/g/gui.htm#work)
* [What are the benefits of GUI?](https://www.computerhope.com/jargon/g/gui.htm#benefits)
* [What are examples of a GUI operating system?](https://www.computerhope.com/jargon/g/gui.htm#examples)
* [Are all operating systems GUI?](https://www.computerhope.com/jargon/g/gui.htm#os)
* [What are examples of a GUI interface?](https://www.computerhope.com/jargon/g/gui.htm#interface)
* [How does the user interact with a GUI?](https://www.computerhope.com/jargon/g/gui.htm#user)
* [Related GUI pages.](https://www.computerhope.com/jargon/g/gui.htm#related)
* [Computer operating systems information.](https://www.computerhope.com/os.htm)

GUI overview

Below is a picture of the Windows 7 [Desktop](https://www.computerhope.com/jargon/d/desktop.htm) and an example of a GUI.



**Tip:** If you need an example of a command line for comparison see our [command line](https://www.computerhope.com/jargon/c/commandi.htm) page.

How does a GUI work?

A GUI uses [windows](https://www.computerhope.com/jargon/w/windows.htm), [icons](https://www.computerhope.com/jargon/i/icon.htm), and [menus](https://www.computerhope.com/jargon/m/menu.htm) to carry out commands, such as opening, deleting, and moving files. Although many GUI [operating systems](https://www.computerhope.com/jargon/os.htm) are navigated through the use of a [mouse](https://www.computerhope.com/jargon/m/mouse.htm), the keyboard can also be utilized by using [keyboard shortcuts](https://www.computerhope.com/jargon/k/keybshor.htm) or[arrow keys](https://www.computerhope.com/jargon/a/arrowkey.htm).

What are the benefits of GUI?

Unlike a [command line operating system](https://www.computerhope.com/jargon/c/commandi.htm) or [CUI](https://www.computerhope.com/jargon/c/cui.htm), like [Unix](https://www.computerhope.com/jargon/u/unix.htm) or [MS-DOS](https://www.computerhope.com/jargon/m/msdos.htm), GUI operating systems are much easier to learn and use because commands do not need to be memorized. Additionally, users do not need to know any [programming languages](https://www.computerhope.com/jargon/p/proglang.htm). Because of their ease of use, GUI operating systems have become the dominant operating system used by today's end-users.

What are examples of a GUI operating system?

1. [Microsoft Windows](https://www.computerhope.com/jargon/w/windows.htm)
2. Apple [System 7](https://www.computerhope.com/jargon/s/system7.htm) and [macOS](https://www.computerhope.com/jargon/m/macos.htm)
3. [Chrome OS](https://www.computerhope.com/jargon/c/chromebook.htm)
4. [Linux](https://www.computerhope.com/jargon/l/linux.htm) variants like [Ubuntu](https://www.computerhope.com/jargon/u/ubuntu.htm)

Are all operating systems GUI?

No. Early command line operating systems like [MS-DOS](https://www.computerhope.com/jargon/m/msdos.htm) and even some versions of [Linux](https://www.computerhope.com/jargon/l/linux.htm) today have no GUI interface.

What are examples of a GUI interface?

1. [GNOME](https://www.computerhope.com/jargon/g/gnome.htm)
2. [KDE](https://www.computerhope.com/jargon/k/kde.htm)
3. Any Microsoft program (i.e. [Word](https://www.computerhope.com/jargon/w/word.htm), [Excel](https://www.computerhope.com/jargon/e/excel.htm), [Outlook](https://www.computerhope.com/jargon/o/outlook.htm))
4. Internet browser (i.e. [Internet Explorer](https://www.computerhope.com/jargon/m/msie.htm), [Chrome](https://www.computerhope.com/jargon/c/chrome.htm), [Firefox](https://www.computerhope.com/jargon/f/firefox.htm))

How does the user interact with a GUI?

Typically the user uses a [pointing device](https://www.computerhope.com/jargon/p/poindevi.htm) such as the [mouse](https://www.computerhope.com/jargon/m/mouse.htm) to interact and use most aspects of the GUI. However, it is also possible to interact with a GUI using a [keyboard](https://www.computerhope.com/jargon/k/keyboard.htm)or other [input device](https://www.computerhope.com/jargon/i/inputdev.htm).

Related GUI pages

* [Command line vs. GUI.](https://www.computerhope.com/issues/ch000619.htm)
* [Computer operating systems information.](https://www.computerhope.com/os.htm)

[Aero](https://www.computerhope.com/jargon/w/windaero.htm), [Front end](https://www.computerhope.com/jargon/f/frontend.htm), [Interface](https://www.computerhope.com/jargon/i/interfac.htm), [Microsoft Windows](https://www.computerhope.com/jargon/w/windows.htm), [MS-DOS](https://www.computerhope.com/jargon/m/msdos.htm), [Operating system terms](https://www.computerhope.com/jargon/os.htm),[UI](https://www.computerhope.com/jargon/u/ui.htm)