
INTERFACES
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WHAT ARE INTERFACES?:

- Interfaces refer to the ways humans interact with technology, including both physical and cognitive aspects.
- They aim to bridge the gap between human thought and machine capabilities.
- It can also mean the point where two systems, subjects, organizations, etc. meet and interact, enabling them to communicate and exchange info.

EXAMPLES OF AN INTERFACE:

WHY ARE THESE INTERFACES?:

USB: - USB's are interfaces that hardware developers use to connect various types of devices. These devices include scanners, printers, digital cameras, etc. They are a very common type of interface.	Steering Wheel: - This is an interface because as you turn the steering wheel, it turns the front tires. The driver interacts with the direction of the vehicle.	Tiny House: - A tiny house is an interface because it offers a different approach to housing and consumption. It represents a smaller, more minimalist way of living and interacting with the world.

WHAT MAKES A GOOD INTERFACE

- Clarity and Simplicity
- Consistency
- Efficiency and Speed
- Minimal Cognitive Load
- Feedback and Responsiveness
- Intuitiveness
- Accessibility
- Flexibility
- Error Prevention & Recovery
- Aesthetics and Appeal

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EXAMPLES OF GOOD INTERFACES

QR Codes

Spotify

Google Search

WHY THESE ARE GOOD INTERFACES

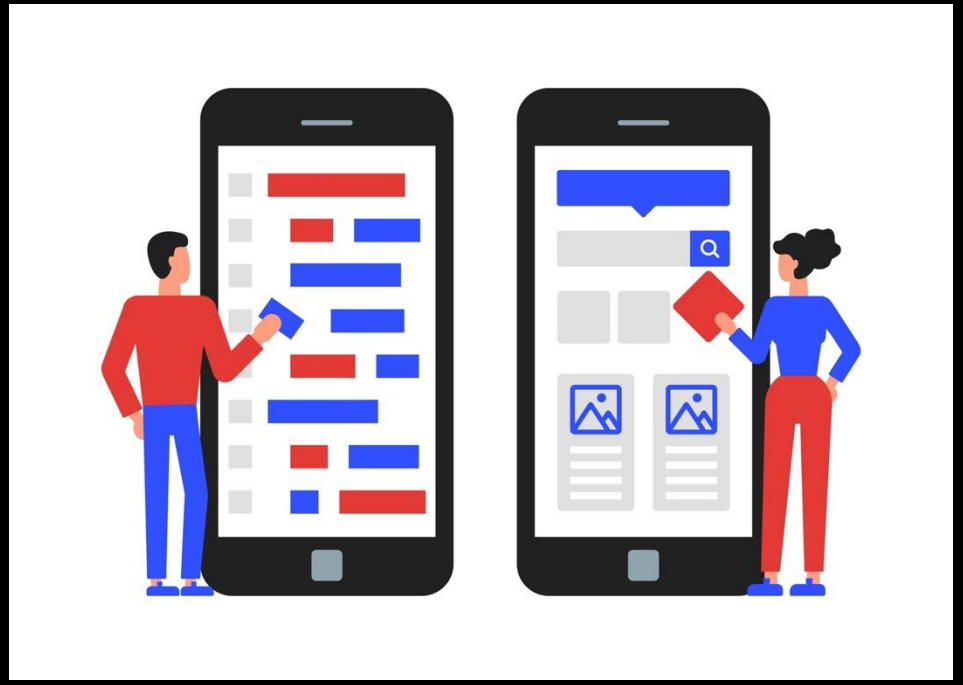
QR codes are good interfaces because they provide a quick, easy, and versatile way to bridge the physical and digital worlds, offering a seamless transition for users to access information or take actions with little effort.

Spotify's interface is considered good due to its simple, intuitive design, personalized recommendations, and engaging features, which make discovering and enjoying music easy and enjoyable.

Google Search's interface is considered good because of its simplicity, speed, and focus on delivering many relevant results, making it easy and efficient for users to find information.

GOOD VS. BAD INTERFACES

- A good interface makes things easy to understand and use by matching how people think and process information, reducing effort and improving learning.
- A bad interface is confusing, inefficient, and hard to learn. It doesn’t align with how people think or process information, leading to frustration and wasted time.



BRAIN-COMPUTER INTERFACES

- A BCI is a system that facilitates direct communication between the brain and an external device. This allows for control of technology through neural activity.
- They represent a cutting-edge trend in Cog SCI by showcasing the intersection of neuroscience and technology.
- https://youtu.be/BRuQaletom8?si=fpv-wip7exD2jLAP
- BCI's can help individuals with severe disabilities regain communication and control over their environment by interpreting brain signals and translating them into actions.
- Future applications of BCI's can include improved treatments for neurological disorders, enhanced gaming experiences, and new ways to interact with virtual environments.

INTERFACES ASSEMBLE!!!

- Iron man's suit and associated technologies such as: Heads Up Display, and Jarvis AI, are considered interfaces!
- H.UD. : the suit features a holographic HUD that displays information, controls, and even allows for 3d manipulation of data.
- Jarvis: AI assistant, acts as a voice-controlled interface, enabling Stark to issue commands and receive information from the suit.

Check out this video of how Tony Stark suits up to kick major A**!
https://www.youtube.com/watch?v=t86sKsR4pnk

HOW DO INTERFACES MAKE OUR LIVES EASIER?

- Interfaces help us to see how easily we can access and interact with software and devices.

- ACCESS AND USE: a well-designed UI simplifies complex tasks, making them accessible to a wide range of users.

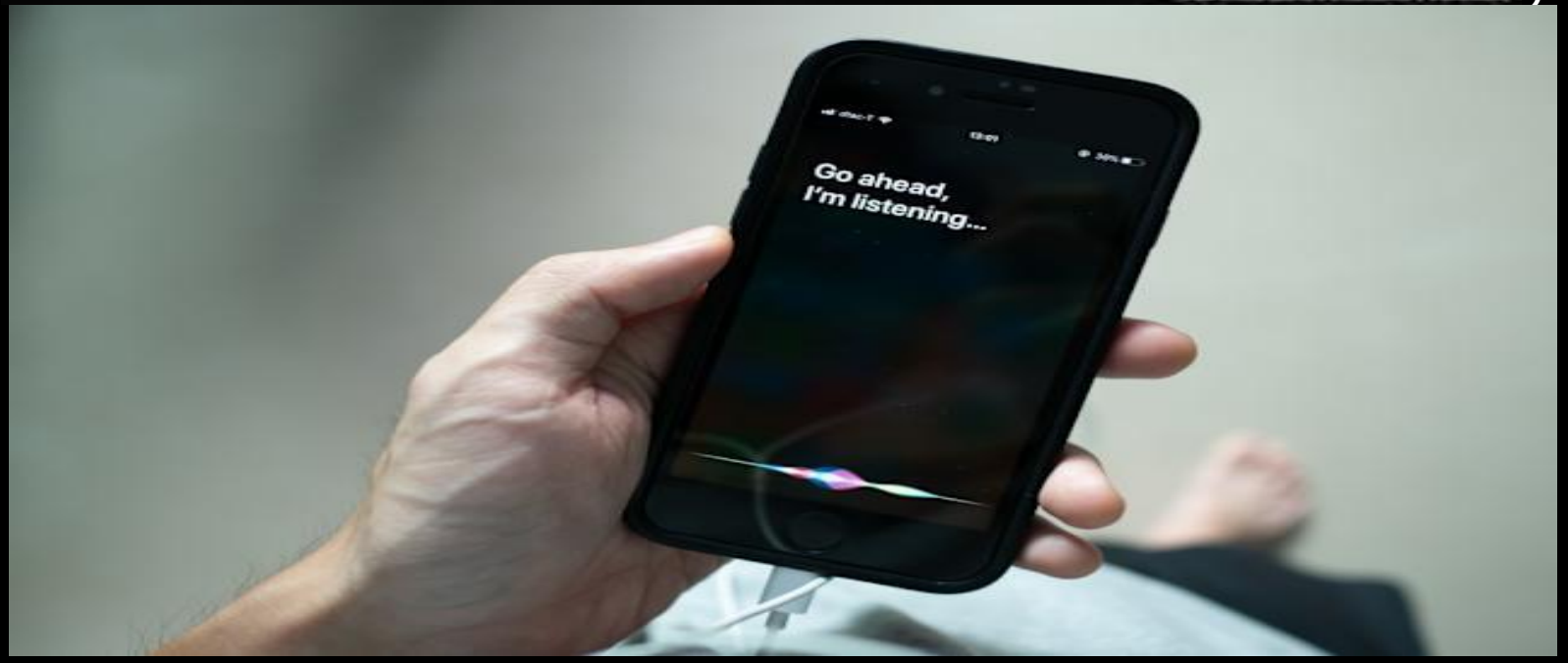
- INCLUSIVITY: a vital role in inclusivity. It ensures that people with disabilities can use applications effectively. They extend to public spaces, making them accessible to all, regardless of physical or mental abilities.

- CHECK THIS OUT:
- https://www.youtube.com/watch?v=EnU30Lx9a2Y

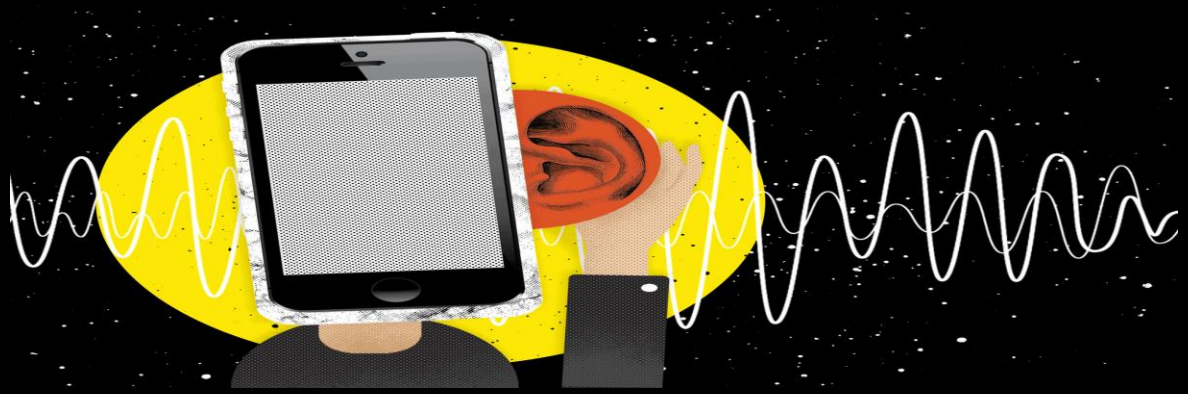
INTERFACES DO OR DON'T KNOW PERSONAL SPACE?

- Brain- Computer interfaces, depending on where they are implanted, could have access to people's most private thoughts and emotions.

- The collection of this information by companies such as advertisers would present a huge invasion of privacy.



WHAT INTERFACES YOU SHOULD KEEP AN EYE ON!



- Siri: A great piece of technology and interfaces, however her ability to always be "listening" can be a bit creepy.

- Have you ever noticed talking about a specific product, then later, on that product show up advertised on your feed?

- APPS: certain apps especially centered around social media have tactics to ease their way into your conversations, searches, and messages. To make more profit by listening and promoting.

GUI (GRAPHICAL USER INTERFACES)

- GUIs (Graphical User Interfaces) are the interfaces we use to interact with most modern electronics
- A great example of this is your Smartphone and/or Smartwatch

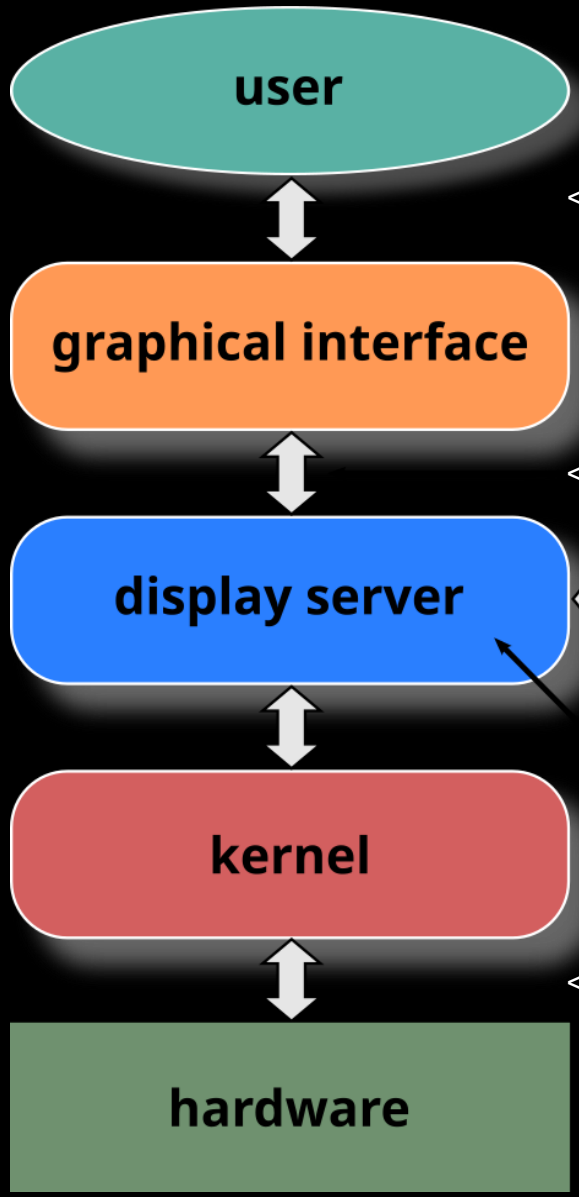
GUI (GRAPHICAL USER INTERFACES) CONT.

- Before modern interfaces existed, using technology was a bit more difficult (or easier depending on your generation). Fun fact- Touchscreen computers have existed since the 80s and were not uncommon
- The 5 main components of GUI are as follows:
  1. A pointer
  2. Icons
  3. Windows
  4. Scroll Bars
  5. An Input Device (mouse, keyboard, etc.)

GUI (GRAPHICAL USER INTERFACES) CONT.

- Before the existence of GUIs, users would interact with computers via a command line prompt.
- This made computers rather inaccessible for most people.
- This changed in 1981, when Xerox introduced the first commercial product to feature a GUI

GUI (GRAPHICAL USER INTERFACE) EXPLAINED



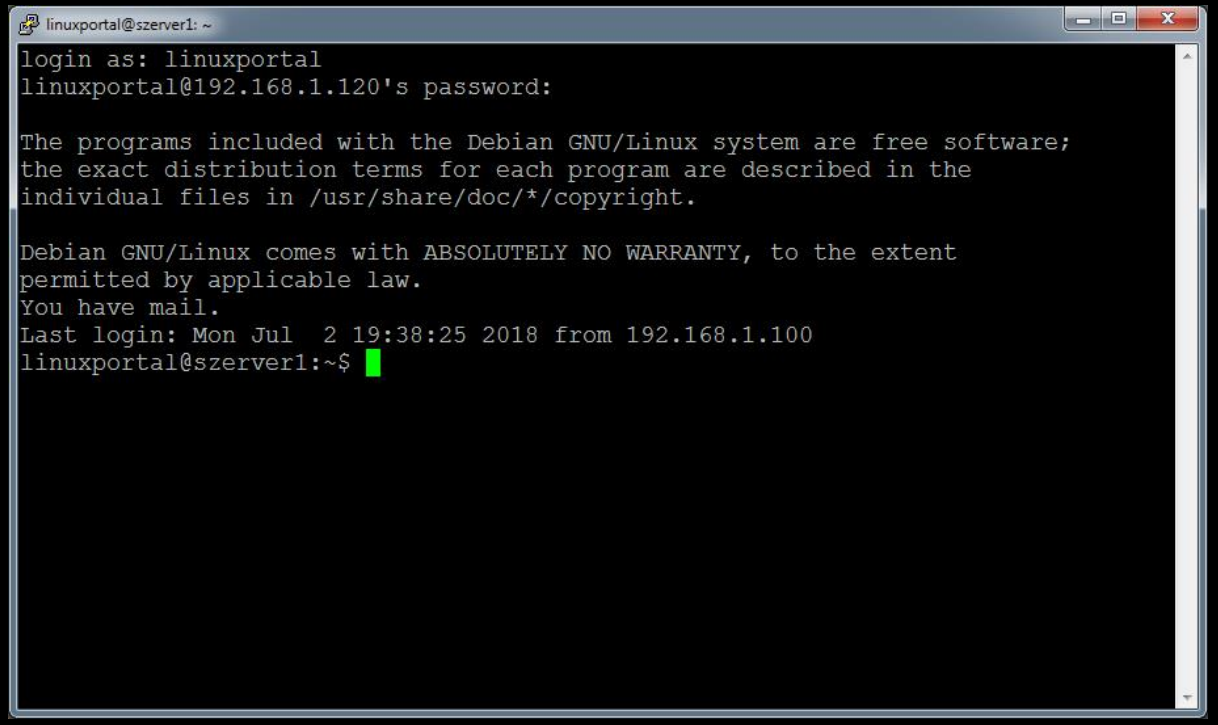
<--- Example: Touching a screen or typing on a keyboard

This is where the device interacts with other technical elements based upon the input given. An example of this would be when a <--- new window opens after clicking on the chrome icon.

This is where the software of the machine interacts with the hardware of the machine based upon an users' input. An example of this would be saving a <--- document to the memory of a device.

CLI (COMMAND LINE INTERFACE)

- As shown previously, another form of interface used within computer is a CLI
- It is a text-based interface used to interact with a computer
- It is utilized by typing commands into a control panel (or terminal)
- This is often used by programmers, but can be easily accessed and picked up by novices as well
- Here is a brief video on the topic:
- https://youtu.be/w9u0d4C95Zs?si=i00JiZ-fetNikjV1



CLI (COMMAND LINE INTERFACE)CONT.

- Compared to GUI, CLI has less limitations around what can be done within the device
- Sometimes this lack of limitations can be EXTREMELY bad (i.e. Deleting system 32 on a Windows device)
- This openness allows users more freedom than GUIs do