WEB APPLICATIONS AS APPLICATION LAYERS

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LET'S WORK FROM THE GROUND UP

BASIC INPUT OUTPUT SYSTEM (BIOS)

- The BIOS is a piece of software that is ***hard-coded*** into a computer responsible for loading and providing a low-level interface for communicating with all hardware (both internal and external).
- This includes the fundamental components of the computer such as the hard drive (HDD), the random-access memory (RAM), and the keyboard/mouse.
- It also includes extra things that you may plug in such as webcams and gaming controllers.

HOW DO WE COMMUNICATE WITH THE BIOS?

- We don't. Low-level applications do.
- The BIOS is the lowest level in the software layers of a computer and therefore it is not meant to be interacted with by user-level applications.
- As we climb higher up in the layers, the interfaces for communicating with various devices will wrap on top of each other and provide us with easier to use interfaces.
- We will refer to interfaces closer to the system as 'low-level' and interfaces higher up as 'high-level'.

PROS & CONS OF AN HIGH-LEVEL INTERFACE

- Pro: It is ***much*** easier to manipulate and learn than the low-level interfaces.
- Con: You have significantly less control.
- For example: recovering deleted files off the HDD.
  - Not possible with a high-level interface...
  - ... because it is basically a hack on top of the way that the HDD is designed to function.

SO NOW WHAT IS THE 'OS'?

THE OS IS...

- The Operating System.
- The software on a computer that is responsible for managing all applications, memory, and peripheral devices.
- It provides an interface between the core functionality of the computer (reading from the hard disk, communicating with the