What happens when we turn on computer?

- The power supply sends electricity to the components of the computer, such as the motherboard, hard drive, and fans.
- The BIOS (basic input/output system) initializes and performs a power-on self-test (POST), which checks the basic hardware components to ensure they are working properly. If any issues are detected, error messages may be displayed.
- The operating system (OS), such as Windows or macOS, is loaded from the hard drive or another storage device into the computer's RAM (random access memory).
- The OS then initializes its own components and drivers and presents the login screen or desktop environment to the user.

Function of BIOS:

The **BIOS (Basic Input/Output System)** is a firmware built into a computer's motherboard that performs several essential functions:

1. **Power-On Self-Test (POST):**

   o When the computer is turned on, the BIOS checks the hardware components like RAM, CPU, and storage to ensure they are functioning correctly.

2. **Bootstrapping:**

   o It locates and loads the operating system into the computer's memory to start the computer.

3. **Hardware Initialization:**

   o The BIOS initializes and configures hardware components, such as the keyboard, mouse, display, and storage devices, so the system can use them.

4. **Providing a User Interface:**

   o The BIOS provides a setup interface (accessible during startup by pressing a key like F2 or DEL), allowing users to configure system settings like boot order, system clock, and hardware features.

5. **Facilitating Communication:**

   o It acts as a bridge between the operating system and hardware, providing low-level routines for hardware communication.

6. **Updating Firmware:**

   o BIOS can be updated to improve compatibility or fix bugs, a process known as flashing.

In essence, the BIOS is the first piece of software that runs when you start your computer, ensuring the hardware and software can work together properly.

Things that happens during POST:

The Power On Self Test happens each time you turn your computer on. It sounds complicated and that's because it kind of is. Your computer does so much when it's turned on and this is just part of that.

- It initializes the various hardware devices.
- It is an important process to ensure that all the devices operate smoothly without any conflicts. BIOSes following ACPI create tables describing the devices in the computer.
- The POST first checks the bios and then tests the CMOS RAM.
- If there is no problem with this then POST continues to check the CPU, hardware devices such as the Video Card, and the secondary storage devices such as the Hard Drive, Floppy Drives, Zip Drive, or CD/DVD Drives.
- If some errors are found then an error message is displayed on the screen or a number of beeps are heard.
- These beeps are known as POST beep codes.