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Steps in the Booting Process:-

Booting is a process of switching on the computer and starting the operating system. Six steps of the booting process are BIOS and Setup Program, The Power-On-Self-Test (POST), The Operating system Loads, System Configuration, System Utility Loads and Users Authentication.
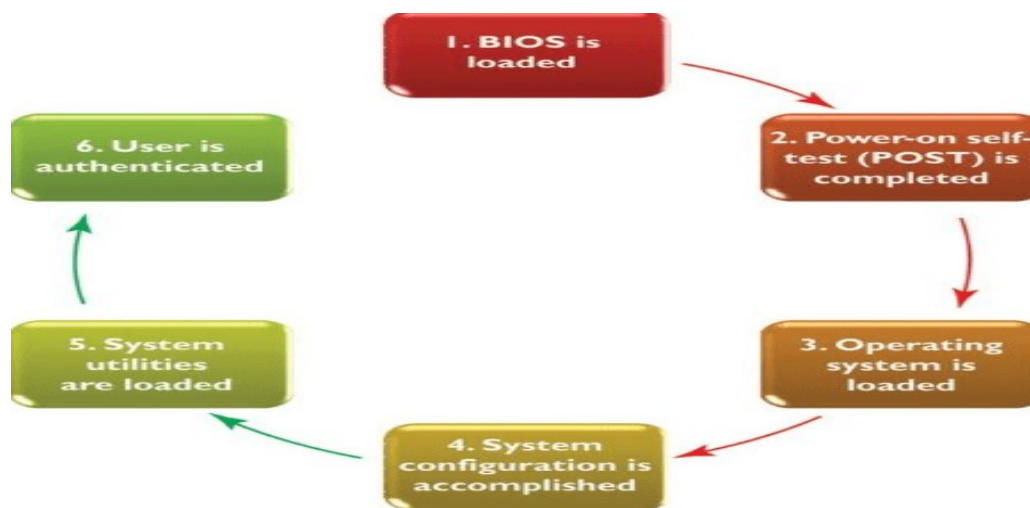
1: BIOS and Setup Program
2: The Power-On-Self-Test (POST)
3: The Operating System (OS) Loads
4: System Configuration
5: System Utility Loads
6: Users Authentication

Step 1: BIOS and Setup Program

- **ROM (read-only memory):** it is a permanent and unchanging memory also
- **BIOS (basic input/output system):** the part of the system software that includes the instructions that the computer uses to accept input and output
- **Load:** to transfer from a storage device to memory. The ROM loads BIOS into the computer's memory
- **Setup program:** a special program containing settings to control hardware. Furthermore, the program can only be accessed while the BIOS information is visible

Step 2: The Power-On-Self-Test (POST)

- **POST (Power-On Self-Test):** a series of tests conducted on the computer's main memory, input/output devices, disk drives, and the hard disk.
- BIOS conducts Power-On-Self-Test to check the input/ output system for operability.
- The computer will produce a beeping sound if any problem occurs. An error message will also appear on the monitor

Step 3: The Operating System (OS) Loads

- BIOS searches for the operating system.
- Setting in CMOS: complementary metal oxide semiconductor determines where to look for the operating system.
- In this step, the operating system's kernel is also loaded into the computer's memory.
- The operating system takes control of the computer and begins loading system configuration information.

Step 4: System Configuration

- Registry: a database to store information about peripherals and software
- Peripheral: a device connected to a computer
- Drive: a utility program that makes peripheral devices function properly
- The operating system's registry configures the system.
- In this step, drivers are also loaded into memory.

Step 5: System Utility Loads

- System utilities are loaded into memory.
- Volume control
- Antivirus software
- PC card unplugging utility

Step 6: Users Authentication

- Authentication or user login occurs
- Username
- Password
- After all this process, the user interface starts, enabling user interaction with the computer and its programs also.

Exercise:-
1- Explain Windows booting process.
2- Why POST is necessary for our system?