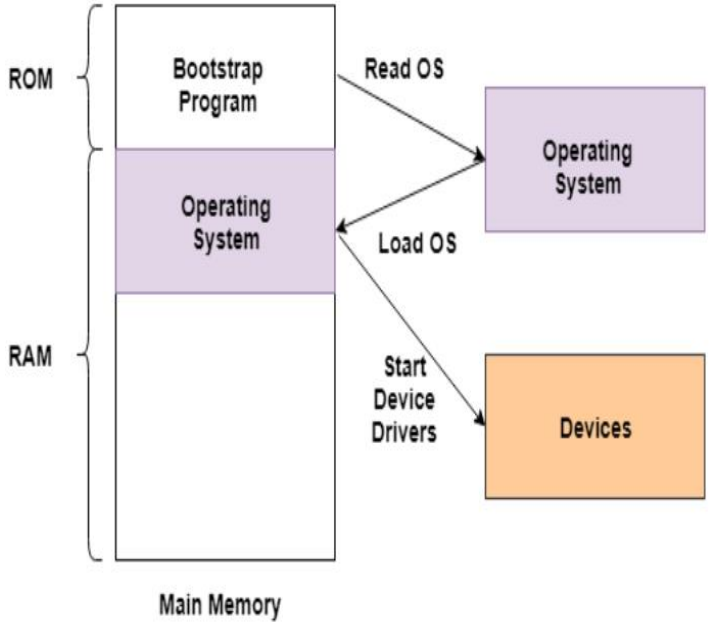
BOOTSTRAP PROGRAM

A bootstrap program is the first code that is executed when the computer system is started. The entire operating system depends on the bootstrap program to work correctly as it loads the operating system.

A figure that demonstrates the use of the bootstrap program is as follows:



In the above image, the bootstrap program is a part of ROM which is the non-volatile memory. The operating system is loaded into the RAM by the bootstrap program after the start of the computer system. Then the operating system starts the device drivers.

Bootstrapping Process

The bootstrapping process does not require any outside input to start. Any software can be loaded as required by the operating system rather than loading all the software automatically.

The bootstrapping process is performed as a chain i.e. at each stage, it is the responsibility of the simpler and smaller program to load and execute the much more complicated and larger program. This means that the computer system improves in increments by itself.

The booting procedure starts with the hardware procedures and then continues onto the software procedures that are stored in the main memory. The bootstrapping process involves self-tests, loading BIOS, configuration settings, hypervisor, operating system etc.

Benefits of Bootstrapping

Without bootstrapping, the computer user would have to download all the software components, including the ones not frequently required. With bootstrapping, only those software components need to be downloaded that are legitimately required and all extraneous components are not required. This process frees up a lot of space in the memory and consequently saves a lot of time.