Difference between Memory Mapped IO and IO Mapped

- The microprocessor cannot do anything by itself therefore, it needs to be linked with memory, extra peripherals or IO devices. This linking is called interfacing.

	Memory Mapped IO	IO Mapped IO
1).	IO devices are accessed like any other memory location.	They cannot be accessed like any other memory location.
2)	They are assigned with 16-bit address values.	They are assigned with 8-bit address values.
3)	The instruction used are LDA, STA e.t.c.	The instruction used are IN and OUT.
4)	Cycles involved during operation are Memory Read & Memory Write.	Cycles involved during operation are IO read and IO write.
5)	Any register can communicate with IO device.	Only accumulator can communicate with IO devices.
6)	2^{16} I/O ports are possible to be used for interfacing.	2^8 I/O ports are possible to be used for interfacing.
7)	During read or write cycle IO / $\overline{M}$ = 0	During read or write cycle IO/$\overline{M}$ = 1.

8) No separate control signal required since we have lot of memory space.	Special control signals are used.
9) Arithmetic and logic operation are performed directly on the data.	Arithmetic and logic operation are not performed directly on the data.

Note :- The interfacing of the I/O devices in 8085 can be done in two ways.

→ Memory Mapped I/O Interfacing

In this kind of interfacing, we assign a memory address that can be used in same manner as we used a normal memory location.

→ I/O Mapped I/O Interfacing

A kind of interfacing in which we assign a 8-bit address value to the input / output devices which can be accessed using IN and OUT instructions.