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**Subject: Python**

**Section: W1**

**Assignment No 2.**

**Question: -**

How Logical Address Map with Physical Address.

**Answer: -**

The logical address is mapped to its corresponding physical address by a hardware device called Memory-Management Unit.

**Definition of Logical Address: -**

Address generated by CPU while a program is running is referred as Logical Address. The logical address is virtual as it does not exist physically. Hence, it is also called as Virtual Address. This address is used as a reference to access the physical memory location. The set of all logical addresses generated by a programs perspective is called Logical Address Space.

**Physical Address identifies: -**

A physical location in a memory. MMU (Memory-Management Unit) computes the physical address for the corresponding logical address. MMU also uses logical address computing physical address. The user never deals with the physical address. Instead, the physical address is accessed by its corresponding logical address by the user.

**Key Differences Between Logical and Physical Address in OS:**

* The basic difference between Logical and physical address is that Logical address is generated by CPU in perspective of a program. On the other hand, the physical address is a location that exists in the memory unit.
* The set of all logical addresses generated by CPU for a program is called Logical Address Space. However, the set of all physical address mapped to corresponding logical addresses is referred as Physical Address Space.
* The logical address is also called virtual address as the logical address does not exist physically in the memory unit. The physical address is a location in the memory unit that can be accessed physically.
* Identical logical address and physical address are generated by Compile-time and Load time address binding methods.
* The logical and physical address generated while run-time address binding method differs from each other.
* The logical address is generated by the CPU while program is running whereas, the physical address is computed by the MMU (Memory Management Unit).