Assignment : 2

"Open Source Software Development"

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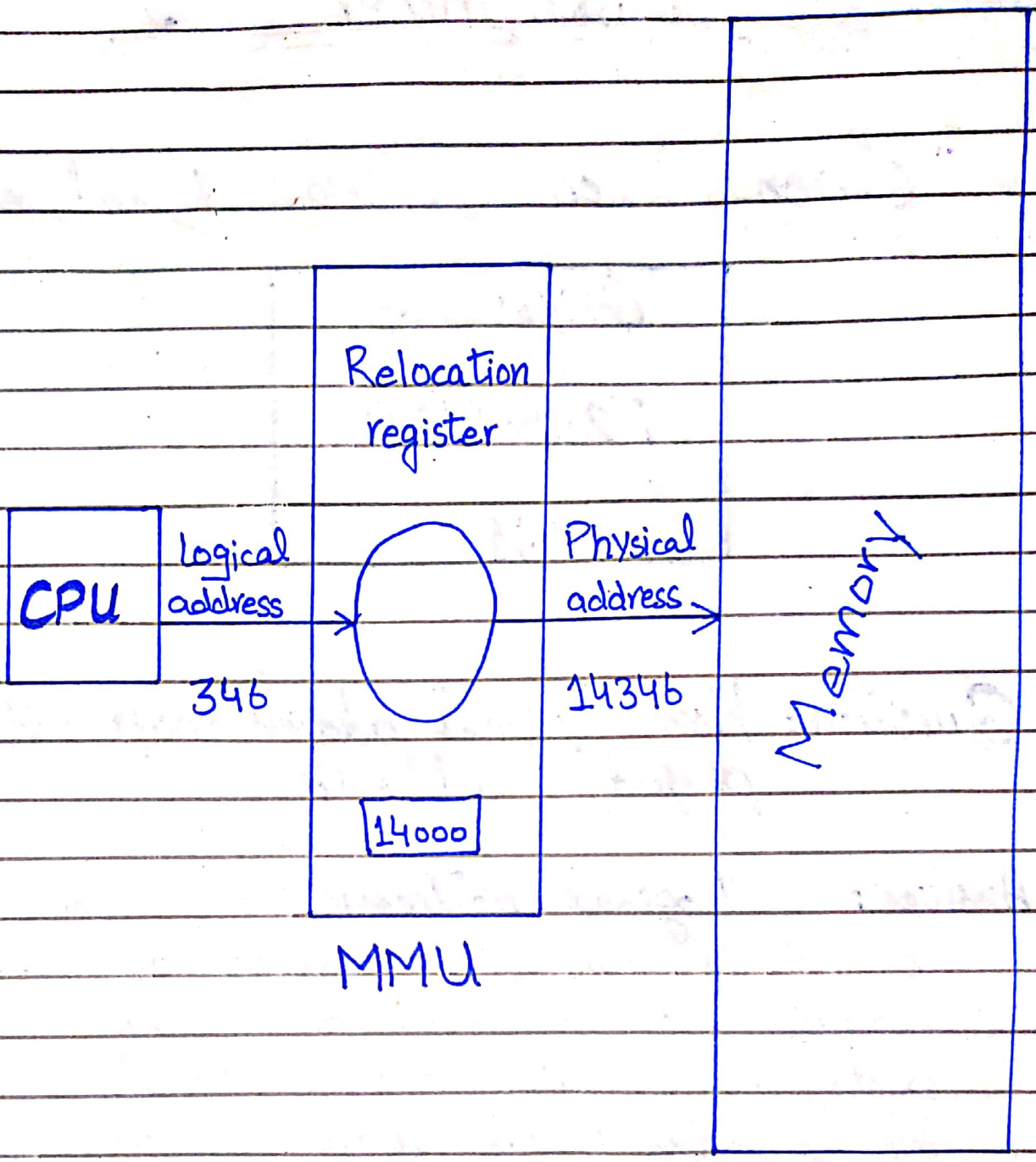
Question: How Logical address map with physical address?

Answer: **Logical addresses** are generated by CPU while a process is running. Whereas logical addresses do not physically exists, it is also called virtual address. These addresses are used as a reference by CPU to access the actual physical memory location.

Physical address identifies the physical location of data in memory. User cannot directly deals with the physical address but she/he can finds the physical address by its respective logical address.



MMU (Memory Management Unit):

Memory Management Unit is a hardware device which is used for mapping logical address to its perspective physical address.

- Address mapping can be performed by these ways:

Compile Time:

During the compile time if user know where a process will reside in memory then actual/confirmed address can be created where physical address is generated in the program execution while compilation. But if generated address space is used by other process, program will be corrupted and it would require to compile it again to use a logical address.

Load Time:

If user does not know that during compile time that where processes will reside the relocatable addresses will be created. The loader checks the relocatable address to absolute address and base address of the process in main memory will be added to all logical address by the loader to generate absolute address. In case, the base address of the process changes the we need to load the process again.

Execution Time:

Now, Instructions are loaded into mem. and processed by CPU. Extra memory may be allocated or deallocated. Process is used if the process can be moved from one memory to another during execution

which is know as dynamic linking. Dynamic linking is done during run-time or at the load-time.