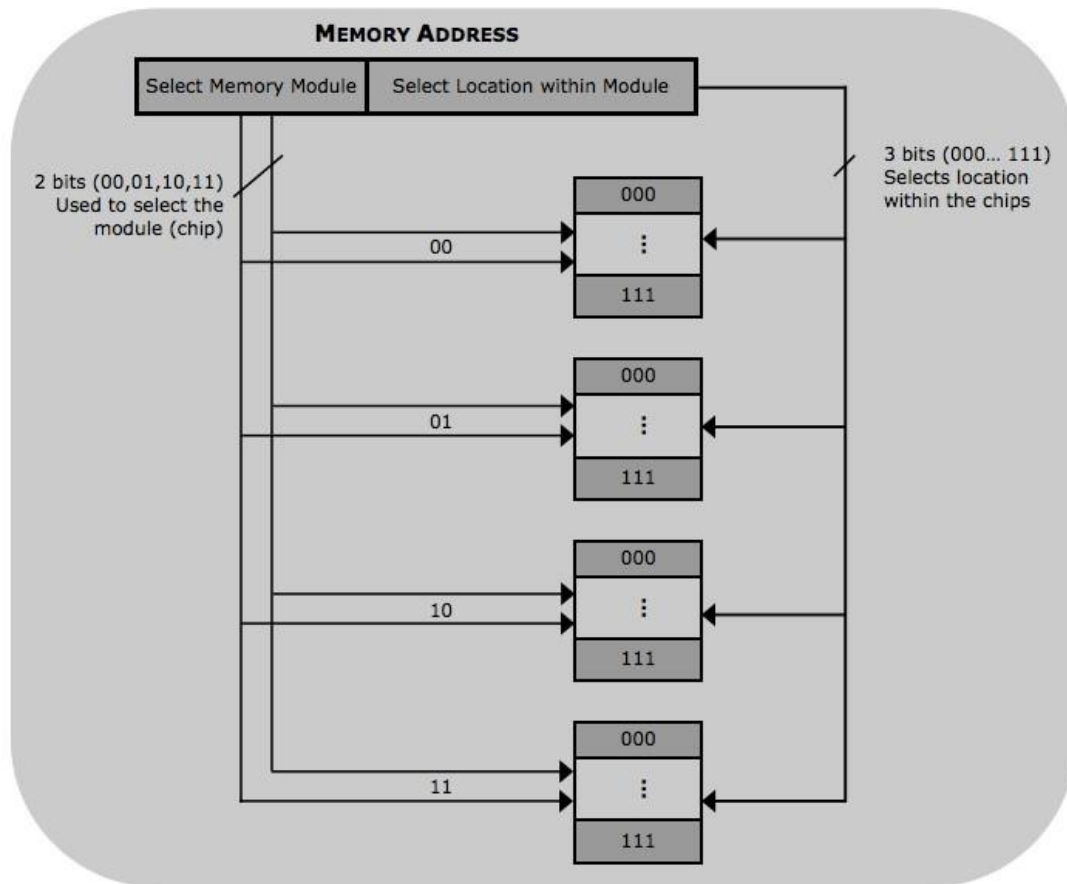


INTERLEAVED MEMORIES

Memory Interleaving means **combining smaller memory modules to form one large memory**. In most computer systems memory is not implemented as one single large module (chip). Instead, it is formed by combining several smaller modules using the method of memory interleaving. There are two interleaving techniques called Higher order and Lower order interleaving.

	HIGHER ORDER INTERLEAVING	LOWER ORDER INTERLEAVING
1	Higher bits of the memory address are used to identify the memory module.	Lower bits of memory address are used to identify the memory module.
2	Used to increase the size of memory .	Has no effect on size of memory.
3	Has no effect on the number of bits that can be transferred in one cycle.	Increases the number of bits that can be transferred in one cycle.
4	Does not increase the speed of the processor.	Increases the speed as it increases the number of bits transferred in 1 cycle.
5	It is optional and is only done when we need to increase the overall storage capacity.	It is compulsory in processors that need more bits in one cycle. E.g.: 8086, 16-bit processor has two banks (Modules). 80386, 32-bit processor has 4 banks etc...
6	The number of modules used are not fixed and can be changed whenever required.	The number of modules used is fixed depending upon how many bits are needed in one cycle.
7	Failure of one module does not effect the others.	Failure of one module effects all other modules as data is "stripped" across modules.
8	Reliability is high	Reliability is poor
9	Consecutive locations are in the same module.	Consecutive locations are in different modules.
10	Only one module can be selected at a time.	One or more modules can be selected simultaneously depending upon the size of data needed to be accessed.

HIGHER ORDER INTERLEAVING



LOWER ORDER INTERLEAVING

