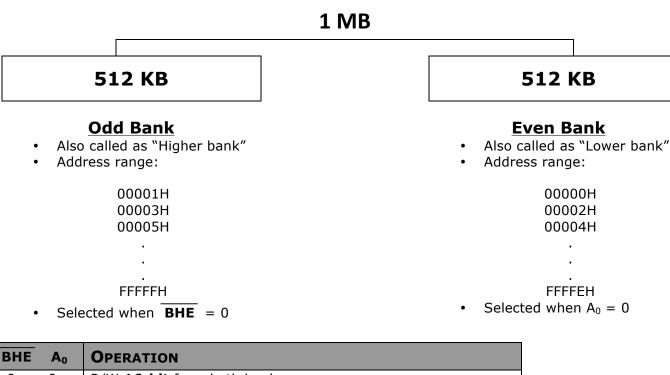**Bharat Acharya**
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MEMORY BANKING IN 8086

- As 8086 has a 16-bit data bus**,** it should be able to access 16-bit data **in one cycle**.
- To do so it needs to read from **2 memory locations**, as one memory location carries only one byte. 16-bit data is stored in two consecutive memory locations.
- However, if both these memory locations are in the same memory chip then they cannot be accessed at the same time, as the address bus of the chip cannot contain two address simultaneously.
- Hence, the memory of 8086 is divided into two banks each bank provides 8-bits.
- The division is done in such a manner that any two consecutive locations lie in two different chips. Hence each chip contains alternate locations.
- ∴ One bank contains all even addresses called the **"Even bank"**, while the other is called **"Odd bank"** containing all odd addresses. ☺ For doubts contact Bharat Sir on 98204 08217
- Generally for any 16-bit operation, the Even bank provides the lower byte and the ODD bank provides the higher byte. Hence the **Even bank** is also called the **Lower bank** and the **Odd bank** is also called the **Higher bank**.

1 MB

512 KB	**512 KB**

Odd Bank
- Also called as "Higher bank"
- Address range:

      00001H
      00003H
      00005H
         .
         .
         .
      FFFFFH
- Selected when $\overline{BHE}$ = 0

Even Bank
- Also called as "Lower bank"
- Address range:

      00000H
      00002H
      00004H
         .
         .
         .
      FFFFEH
- Selected when A_0 = 0

$\overline{BHE}$	A_0	OPERATION
0	0	R/W **16-bit** from both banks
0	1	R/W 8-bit from higher bank
1	0	R/W 8-bit from lower bank
1	1	No Operation (Idle).