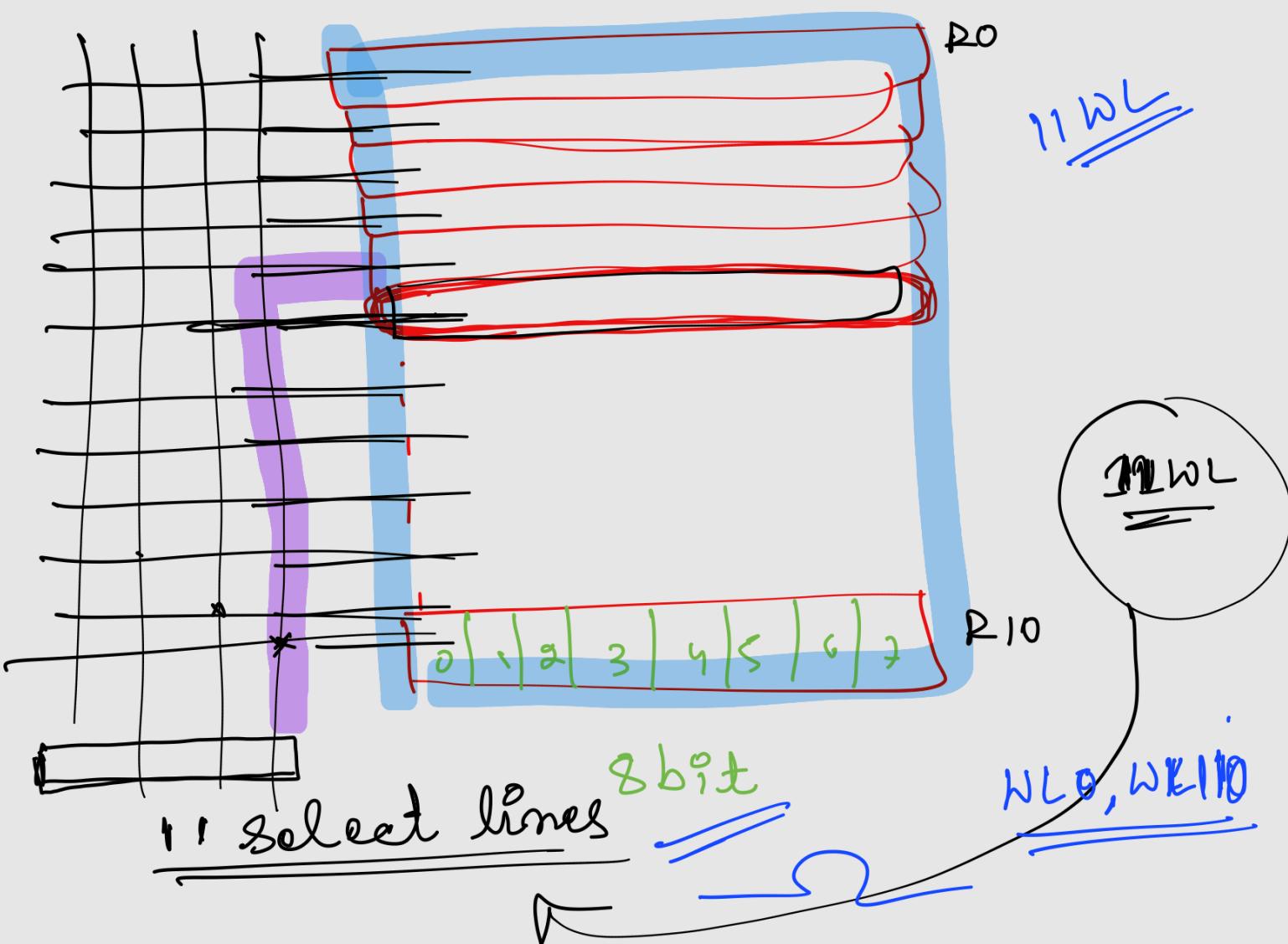
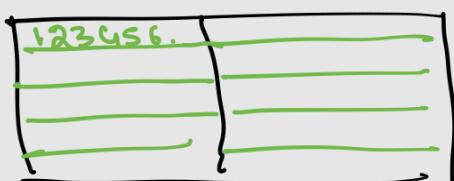


- * each row there will be a word line which is shared across columns.
- * word line has to go high for read or write operation to happen.



$$\begin{aligned}
 \text{Size} &= NW \times NB \\
 &= 11 \times 8 \\
 &= 88 \text{ bits}
 \end{aligned}$$



$$= 11 \times 1 \text{ byte} = \underline{\underline{11 \text{ byte}}}$$

32Mb → Megabit
~~2²⁰~~

$$32 \times 2 \times 1 \text{ b}$$

$$\hookrightarrow 2^5 = 2^{25} \text{ bits}$$

assume 1 word

Size one

8 bits

8 bits = 1 byte

4 bits = 1 nibble

$$2^{10} = 1024 \text{ bits} = 1 \text{ kb}$$

$$2^{20} = 1024 \text{ kb} = 1 \text{ Mb}$$

$$2^{30} = 1024 \text{ Mb} = 1 \text{ Gb}$$

$$2^{10} \times 2^{20}$$

$$2^{25} \text{ bits} = NW \times NB$$

$$2^{25} = NW \times 8 \rightarrow 2^3$$

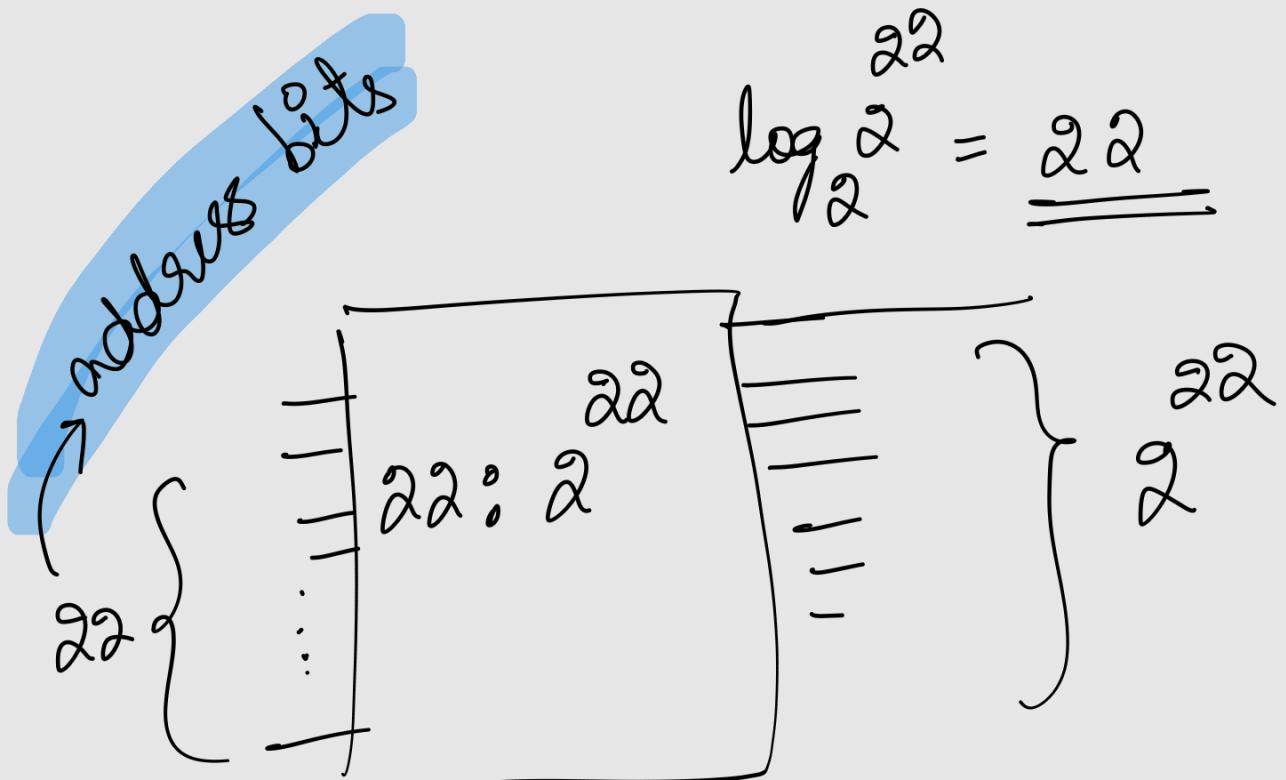
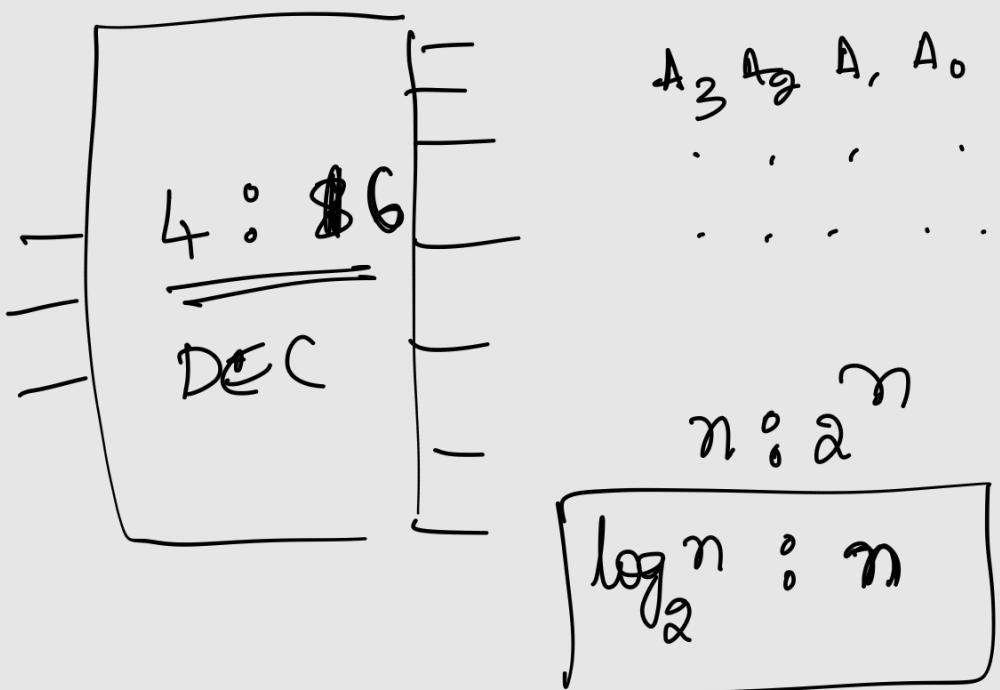
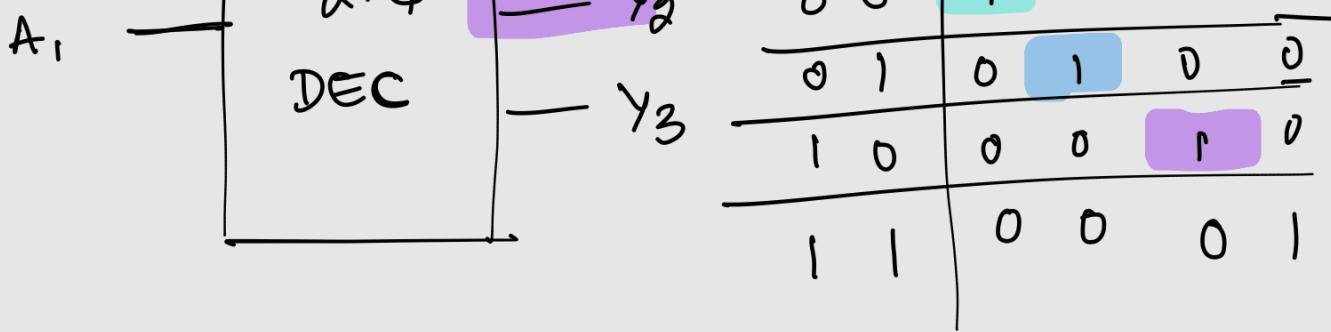
$$NW = 2^2$$

2² select lines

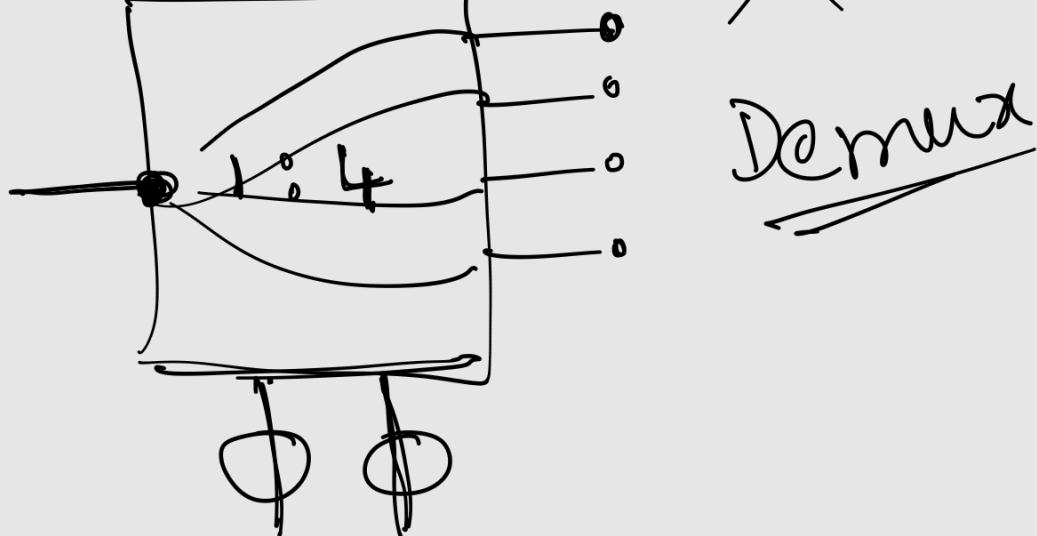
Decoder



A ₁	A ₀	Y ₀	Y ₁	Y ₂	Y ₃
0	0	1	0	0	0

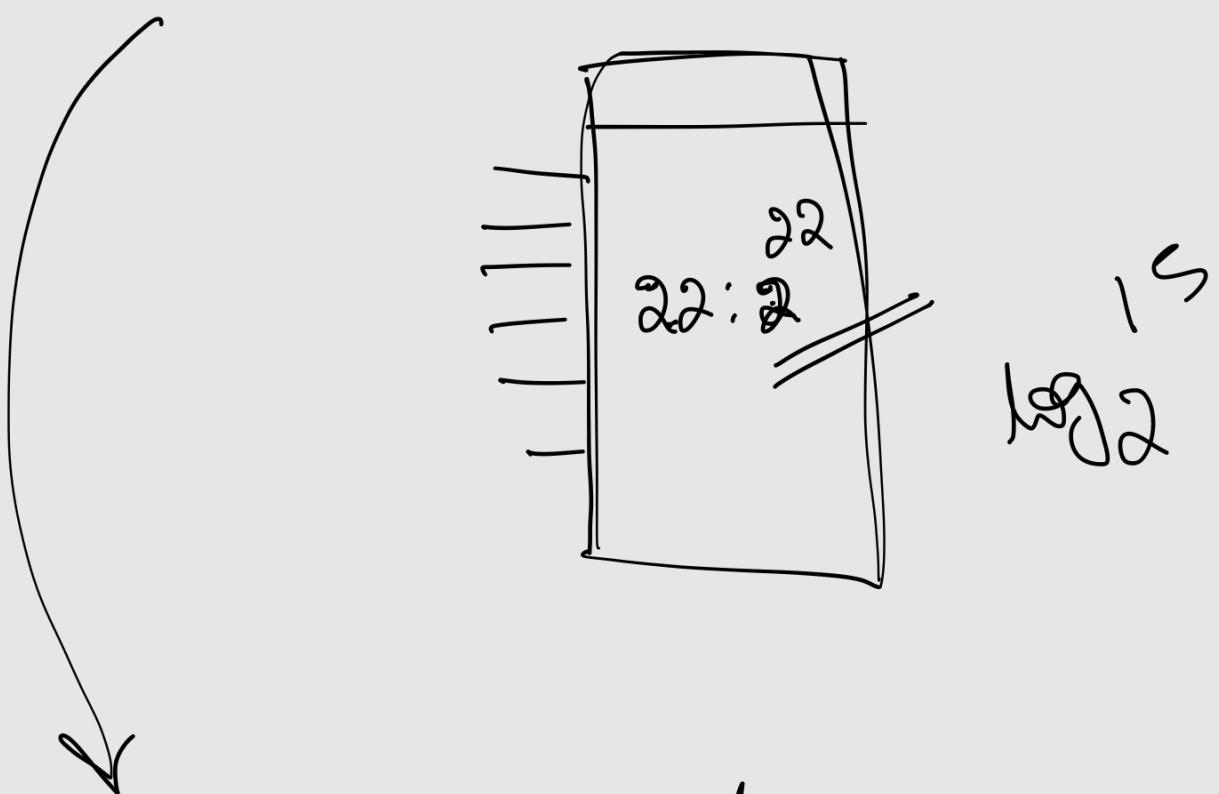


X

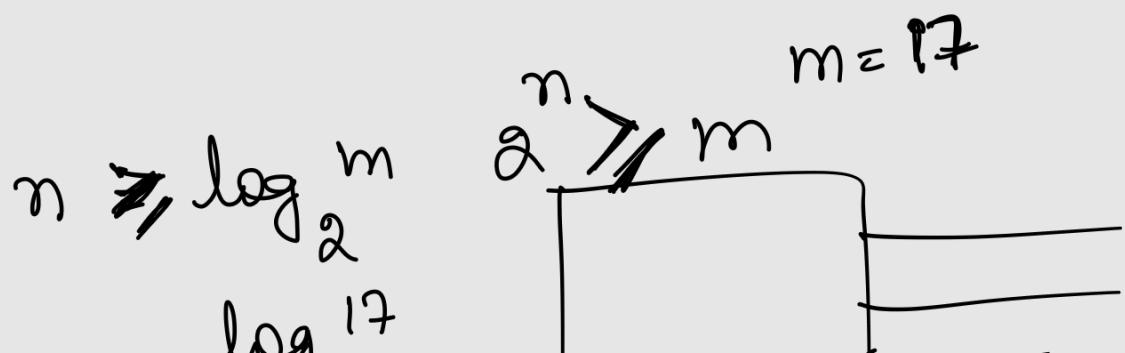


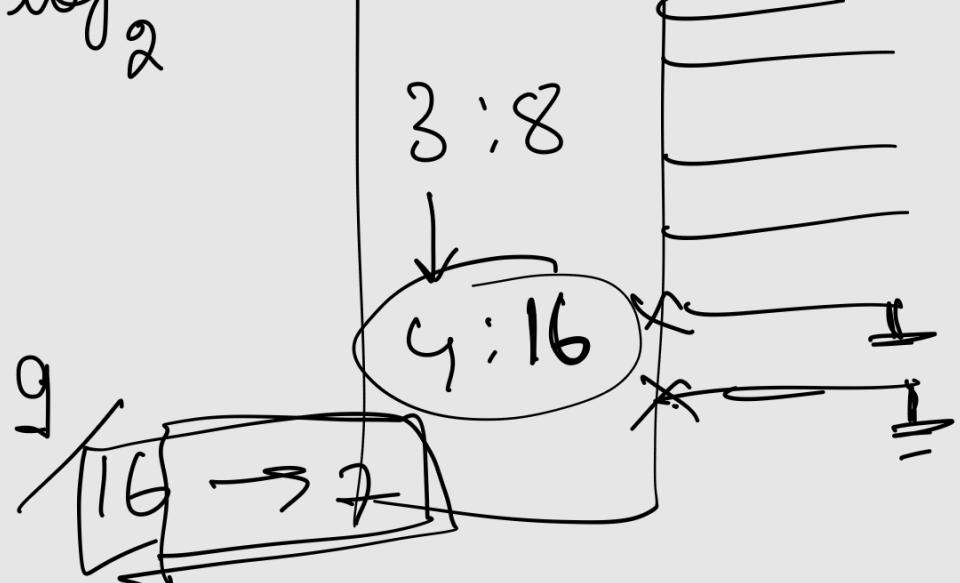
Why decoder is required?

22 adr bits



Smaller example.



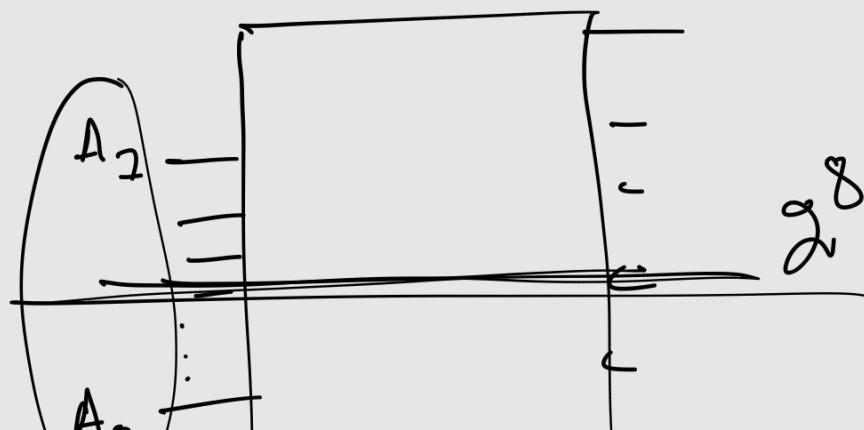


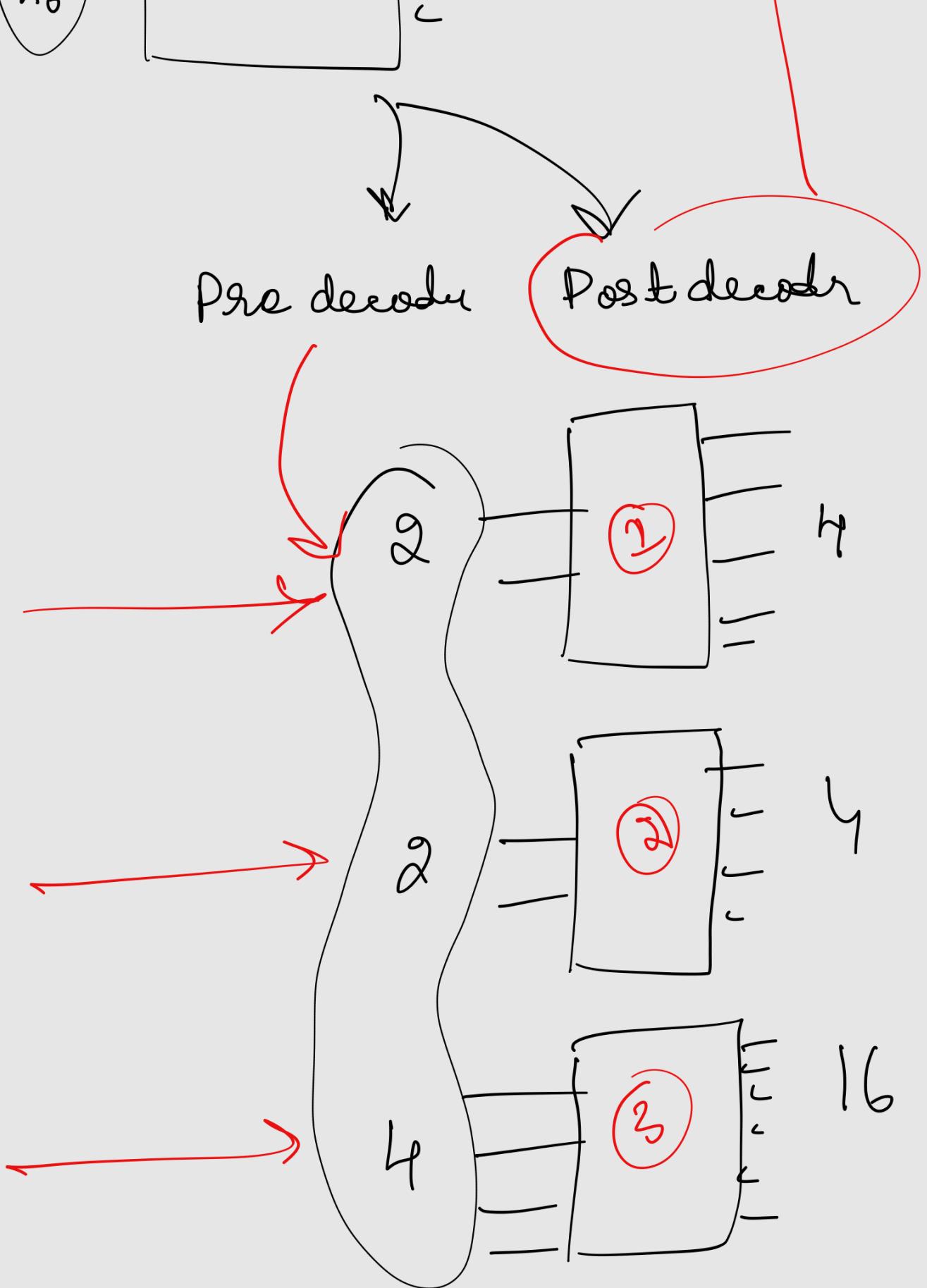
512 byte \rightarrow $512 \times 8 = 2^{12}$ bits

1 word size \rightarrow 16 bits

$$NW = \frac{2^{12}}{16} = \frac{2^{12}}{2^4} = \boxed{2^8}$$

$$Addr = 8$$





$$4 \times 4 \times 16 = 2^8$$

$$2^2 \times 2^2 \times 2^4 = 2^8$$

