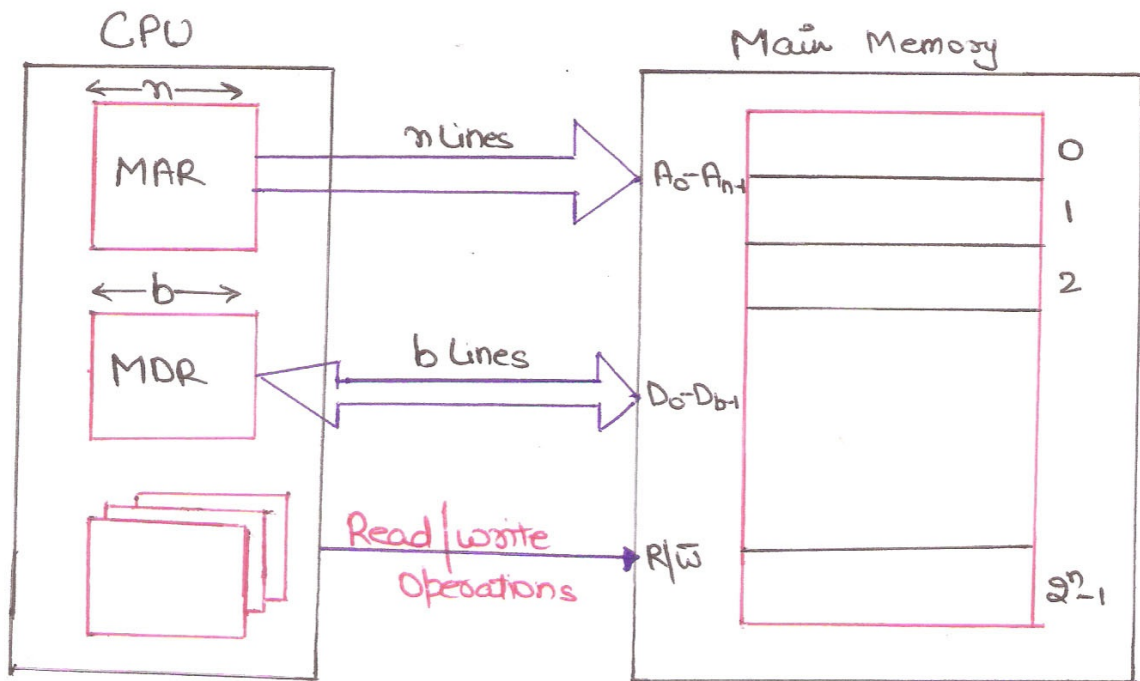


# Structured Organization-

## Main Memory



→ Main Memory provides the main storage for a computer

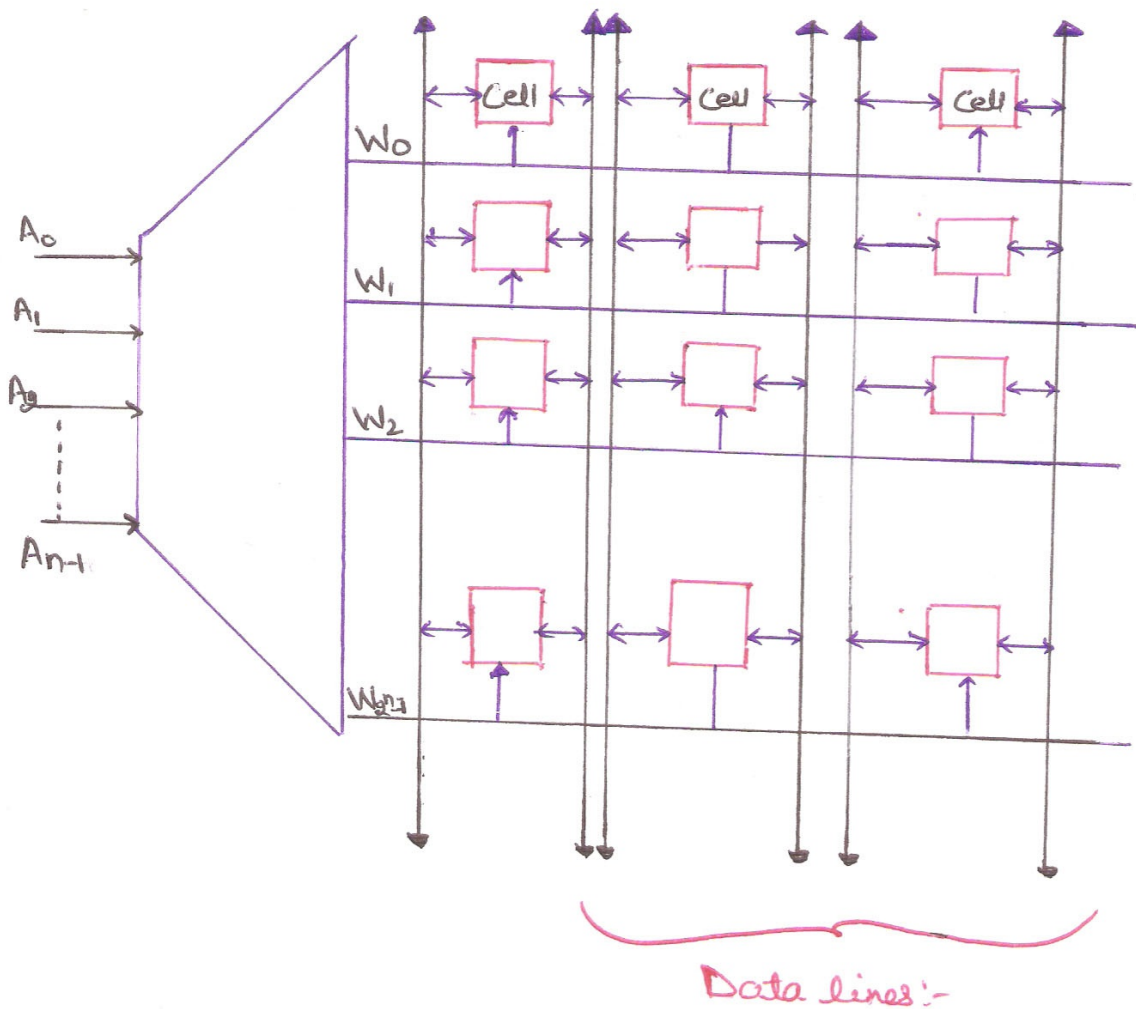


### A typical CPU and main Memory Interface:-

- MAR (Memory Address Register) and MDR (Memory Data Register) are two main registers used to interface the CPU to the main memory.
- MDR is used to hold the Data to be stored and/or retrieved in/from the memory location whose address is held in the MAR.
- Address lines  $A_{n-1}, A_{n-2}, \dots, A_1, A_0$  are used as inputs to the address decoder in order to generate the word select lines  $W_{2^n-1}, \dots, W_1, W_0$ .

A given word select line is common to all memory cells in the same row.

- At any given time, the address decoder activates only one word select line while deactivating the remaining lines.
- A word select line is used to enable all cells in a row for Read or Write.



Data (bit) lines are used to input or output the contents of cells. Each memory cell is connected to two data lines. A given data line is common to all cells in a given column.