

Data structure

① Beg = 1 and End = 13

$$\text{Mid} = \text{Int}((1+13)/2) = 7$$

so Data [Mid]

$$\text{Beg} = \text{LB}; \text{End} = \text{UB}$$

$$\text{Mid} = \frac{\text{Beg} + \text{End}}{2}$$

① If Item < Data [Mid]

$$\text{End} = \text{Mid} - 1$$

$$\text{else Beg} = \text{Mid} + 1$$

$$\text{② Mid} = \text{int}((\text{Beg} + \text{End}) / 2)$$

③ If Data [Mid] = Item

$$\text{pr. Loc} = \text{Mid}$$

else Loc = null

Multi dimensional Array

$$\text{Loc} = [A] =$$

$$\text{CM} \rightarrow \text{Loc}(A[J, K]) = \text{Base}(A) + w[M(K-1) + (J-1)]$$

$$\text{RM} \rightarrow \text{Loc}(A(J, K)) = \text{Base}(A) + w[N(J-1) + (K-1)]$$