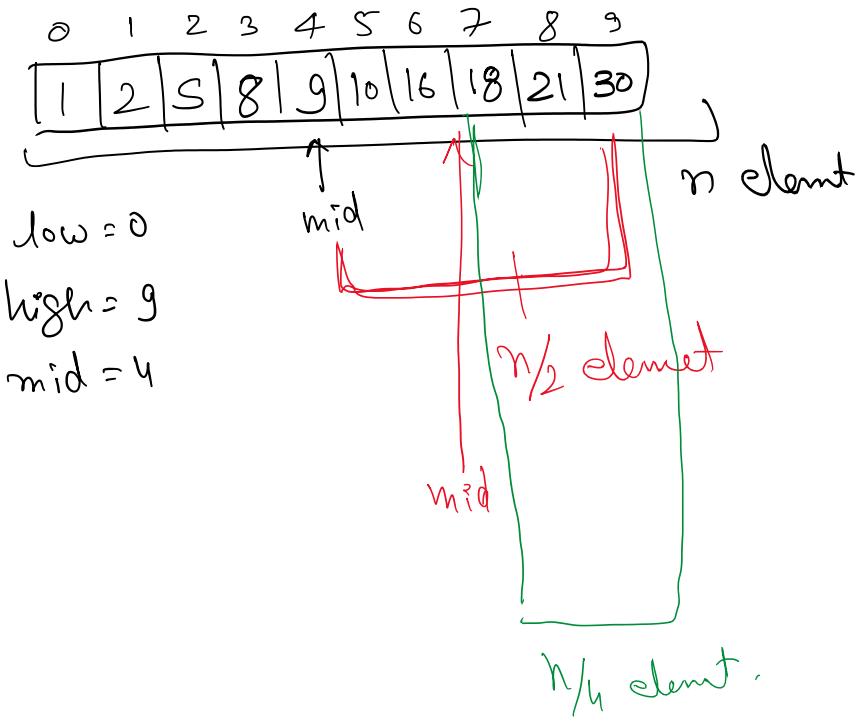
Time complexity



Search space reduces by a factor of 2 at each iteration

Iteration 1 | Iteration 2 | iteration 3

n | $n/2$ | $n/4$ .....

$$n \rightarrow n/2^1 \rightarrow n/2^2 \rightarrow \frac{n}{2^3} \rightarrow \ldots\ldots 1$$

$$\therefore \quad \frac{n}{2^k} = 1$$

$$\Rightarrow \quad 2^k = n$$

$$\Rightarrow \quad k = \log_2(n)$$

Time complexity.