BINARY-SEARCH(A, e, begin, end)

```
    if begin == end then
        if A[begin] != e then
            return False
        else return False
    middle = (begin + end) / 2
    if A[middle] > e then
            return BINARY-SEARCH(A, e, begin, middle)
    if A[middle] < e then
            return BINARY-SEARCH(A, e, middle, end)
```

$$T(n) = \begin{cases} c & if\ n = 1 \\ T(n/2) + c & if\ n > 1 \end{cases} \quad (1)$$

By reccurence, if $n > 1, T(n) = \sum_{k=0}^{lg(n)} c$
$\Rightarrow T(n) = clg(n)$
$\Rightarrow The\ algorithm\ is\ \Theta(lgn)$