**Binary Search Algorithm**

* Binary Search Algorithm is a type of search algorithm, which also known as “half-interval search”, “Logarithmic Search”.
* Real-life Example: Finding certain contact in phone book.
* Procedure

*Condition:* A target array must be sorted in Ascending order.

Given an array of elements with values sorted such that , and target value , the following subroutine uses binary search to find the index of in .

**Subroutine**

1. Set to 0 and to (In code, refers lo, refers hi)
2. if , the search terminates as unsuccessful.
3. Set (index of middle element) to the floor of , which is the greatest integer less than or equal to .
4. If , set to and go to step 2
5. If , set to and go to step 2
6. Now, if , the search is completed and returns .

* Binary Search is an efficient algorithm for finding an item from a *sorted* list of items.