

Binary Search Simulation

Question: A [1,2,4,6,8,9,11,13,17,18,21,24,27,30,35,36].

How will binary search algorithm work on the following array to search value 17 and 25?

Solution:

To search 17:

Low	High	Mid	Condition True	Action
0	15	7	$\text{arr}[\text{mid}] < 17$	$\text{low} = 7 + 1 = 8$
8	15	11	$\text{arr}[\text{mid}] > 17$	$\text{high} = 11 - 1 = 10$
8	10	9	$\text{arr}[\text{mid}] == 17$	Element found

To search 25:

Low	High	Mid	Condition True	Action
0	15	7	$\text{arr}[\text{mid}] < 25$	$\text{low} = 7 + 1 = 8$
8	15	11	$\text{arr}[\text{mid}] < 25$	$\text{low} = 11 + 1 = 12$
12	15	13	$\text{arr}[\text{mid}] > 25$	$\text{high} = 13 - 1 = 12$
12	12	12	$\text{arr}[\text{mid}] > 25$	$\text{high} = 12 - 1 = 11$
12	11	-	-	-