**Binary Search Practice**

int [ ] nums = {2, 4, 7, 10, 11, 45, 50, 59, 60, 66, 69, 70, 79}; (13 elements in nums array)

key = 45 (This is the value whose index we are searching for within the nums array)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Loop #** | **low** | **high** | **mid** | **nums[mid]** | **key is ? than nums[mid]** |
| 1 |  |  |  |  |  |
| 2 |  |  |  |  |  |
| 3 |  |  |  |  |  |
| 4 |  |  |  |  |  |
| 5 |  |  |  |  |  |

**Answer**: The key, 45, is found at index within the nums array.

int [] nums = {5, 6, 15, 19, 21, 24, 25, 25, 27, 32, 34, 40, 42, 45, 47, 82, 85, 86, 89, 94}; (20 elements in nums array)

key = 82 (This is the value whose index we are searching for within the nums array)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Loop #** | **low** | **high** | **mid** | **nums[mid]** | **key is ? than nums[mid]** |
| 1 |  |  |  |  |  |
| 2 |  |  |  |  |  |
| 3 |  |  |  |  |  |
| 4 |  |  |  |  |  |
| 5 |  |  |  |  |  |
| 6 |  |  |  |  |  |

**Answer**: The key, 82, is found at index within the nums array.

int [] nums = {65, 103, 192, 312, 351, 363, 369, 435, 452, 753, 813, 837, 850, 857, 860, 876, 900, 939}; (18 elements)

key = 360

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Loop #** | **low** | **high** | **mid** | **nums[mid]** | **key is ? than nums[mid]** |
| 1 |  |  |  |  |  |
| 2 |  |  |  |  |  |
| 3 |  |  |  |  |  |
| 4 |  |  |  |  |  |
| 5 |  |  |  |  |  |
| 6 |  |  |  |  |  |
| 7 |  |  |  |