**Binary Search**

Step 1 – Theory

Step 2 – material / Important questions - YouTube

Step 3 – LC practice

Step 4 – Speed / visualization

Step 1

- <https://www.udemy.com/course/cpp-data-structures-algorithms-levelup-prateek-narang/learn/lecture/25793510?components=buy_button%2Cdiscount_expiration%2Cgift_this_course%2Cpurchase%2Cdeal_badge%2Credeem_coupon#overview>

Step 2

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| # | Question | Input | Complexity | Solution/ Link |
| 1 | [Allocate Minimum Number of Pages:](https://www.youtube.com/watch?v=okP-e2VpI_g&t=11s) |  |  | <https://www.youtube.com/watch?v=okP-e>...  https://www.youtube.com/watch?v=oJsIziN4\_58 |
| 2 | search a number in rotated array |  |  | <https://leetcode.com/problems/search-in-rotated-sorted-array/> |
| 3 | search in a matrix |  |  | <https://leetcode.com/problems/search-a-2d-matrix/> |
| 4 | min in rotation matrix -- similar to rotated index |  |  | <https://leetcode.com/problems/find-minimum-in-rotated-sorted-array/> |
| 5 | 3 sum , 4 sum , 2 sum via binary search |  |  |  |
| 6 | find peak element |  |  | <https://leetcode.com/problems/find-peak-element/> |
| 7 | peak in a mountain array |  |  | <https://leetcode.com/problems/peak-index-in-a-mountain-array/> |
| 8 | 259. 3Sum Smaller |  |  | <https://leetcode.com/problems/3sum-smaller/> |
| 9 | 167. Two Sum II - Input array is sorted |  |  | <https://leetcode.com/problems/two-sum-ii-input-array-is-sorted/> |
| 10 | frequency count -(UB- LB +1 ) --> solution snap attached -- input is[ 1,1,2,2,2,,3,3,3], -- find frequency of 2 int this array |  |  | Prateek - udemy- https://www.udemy.com/course/cpp-data-structures-algorithms-levelup-prateek-narang/learn/lecture/26391146#overview |
| 11 | Square root - via binary search --> solution |  |  |  |
| 12 | Min pair |  |  |  |

Step 3

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| # | Question | Order of | Solution/ Link |
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Step 4