

How do we solve problems recursively?

Binary Search

This can be thought of recursively. Each time you look at a value, you then search one half of the list again!

Base case, there are 2 options:

1. The middle element is the **key**, done, return the index.
2. You've searched through the entire list, return -1.
How can you tell you've gone through the whole thing?
Take a look at the previous page, why did I stop at line 17?

Recursive case, 2 options again:

1. **key** < middle element
Binary search through the bottom half of the list.
2. **key** > middle element
Binary search through the top half of the list.

