

# Creating Static Libraries

Project includes two libraries i.e. Sorting and Searching

# Why we need libraries in c?

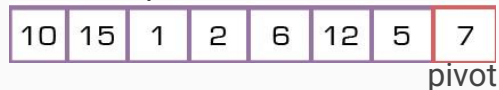
1. C language supports only basic features that it needs in its default libraries.
  2. Libraries package useful piece of code up so we don't need to write same functionality again and again.
  3. Static libraries make program execution much more faster and efficient.
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# 1. Sorting Library

## Quick Sort Algorithm

### Step 1

Choose a pivot element



### Step 2

Make a partition function to divide array in such a way that elements less than pivot element are in left sub-array and greater than it are in right sub-array.



### Step 3

Apply this logic to the to both the subarrays.



## 2. Searching Library

# Binary Search Algorithm

### Step 1

Choose an element to be searched from the sorted array.

### Step 2

Compare it with the middle element, if it matches return the index else search on the either side of the array depending upon the result obtained by the comparison.

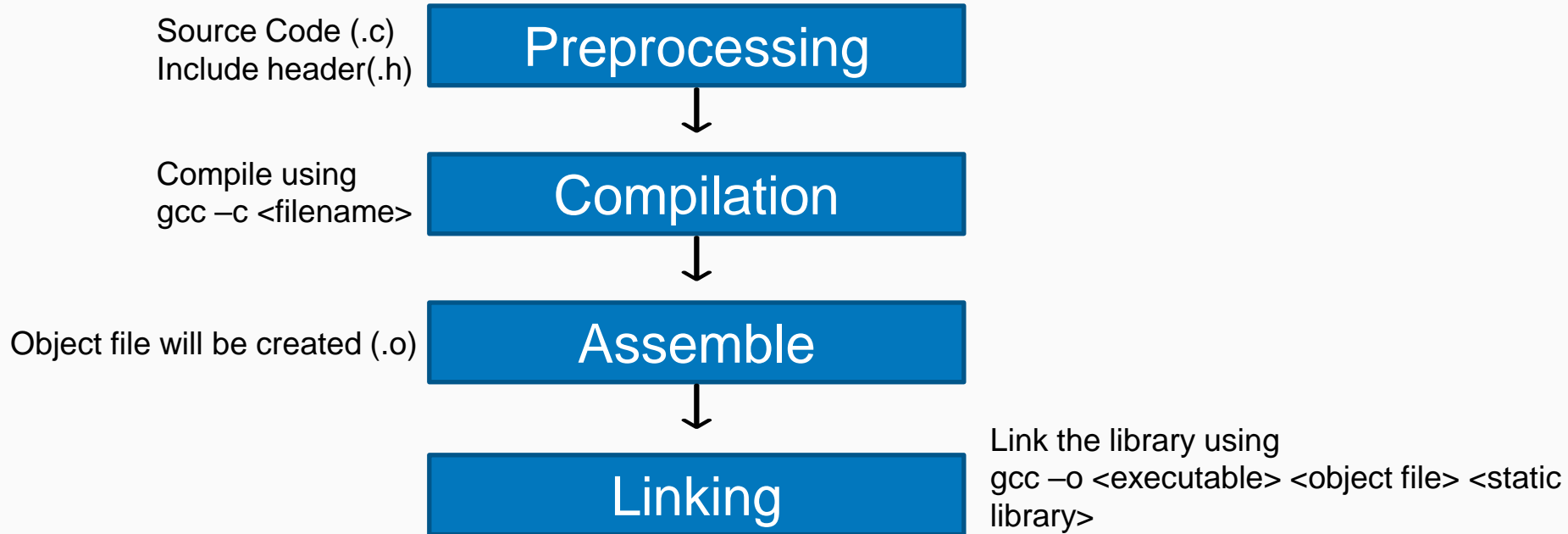
1	3	5	6	7	8	9	11	14	15	19	27
begin					mid	end					

### Step 3

Return the index of the element if it matches the value of desired element.

1	3	5	6	7	8	9	11	14	15	19	27
begin								mid	end		

# How static library works



# Demo

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