Standard Template Library

* Collection of tools, containers to simplify programmers lives
* Container
  + Structure that holds data
  + Array, list, queue, stack, vectors, sets
* Algorithm
  + Basic common programming algorithms
  + Search
  + Sort
  + Replace
* Iterators
  + Iterate – walk through a list
  + Traverse any container
  + Begin, end,
  + Used in algorithms and your code
* Functors
  + Methods performed on STL object
  + Shortcut to an object call

Forward\_list

* List similar to Malik’s unorderedLinkedList
* Single linked list
* Good for
  + Sorting – moving pointers
  + Insert, delete objects
* Does not contain a size obect
  + You need to calculate the size if needed
* Insert using push\_front
* sort

Binary search technique

* requires a sorted list
* starts in the middle, compare the search value to the middle value
  + repeat until found or not end of list
    - if it matches, quit
    - if search < middle value
      * ignores items above middle value
      * finds midpoint of beginning and the current middle value
* exceedingly fast search
* linear search O(n) – look at n items
* binary search O(log n)
  + n = 1000, log n = 3
  + n = 10000, log n = 4

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