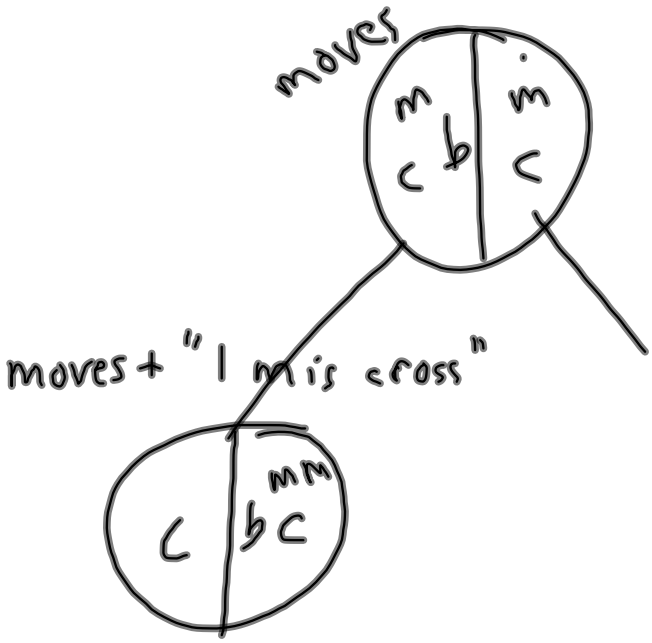
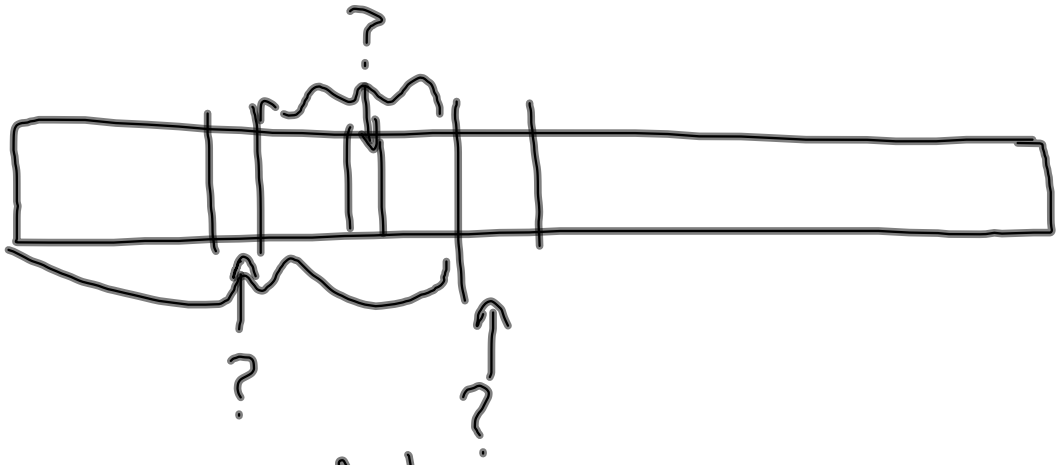
http://cs.gettysburg.edu/~cpresser/cs112/classwork/11-04/



searching an ordered list



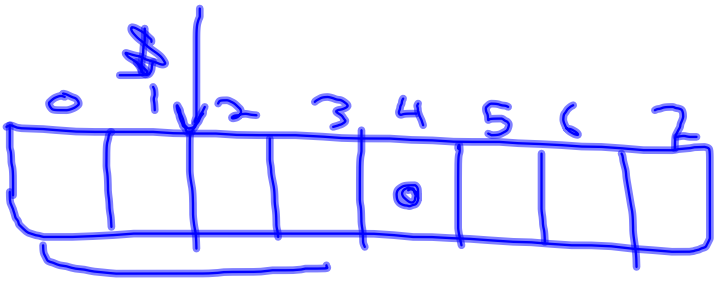
step	# of items
1	1000
2	~ 500
3	~ 250
4	~ 125
5	~ 62
6	~ 31
7	~ 15
8	~ 7
9	~ 3
10	1

```java
@Override
public boolean lookup(String word){
    return recLookup(word, 0, words.size());
}

private boolean recLookup(String word, int low, int high){
    int mid = (low + high + 1)/2;

    String w = words.get(mid);
    int diff = word.compareTo(w);

    if(diff == 0){
        return true;
    }
    else if(diff < 0){
        return recLookup(word, low, mid - 1);
    }
    else {
        return recLookup(word, mid + 1, high);
    }

}
```

returns
0 equal
< 0 word < w
> 0 word > w

← check lower half

↑ check higher half



low	high	mid
0	8	$8/2 = 4$
0	3	