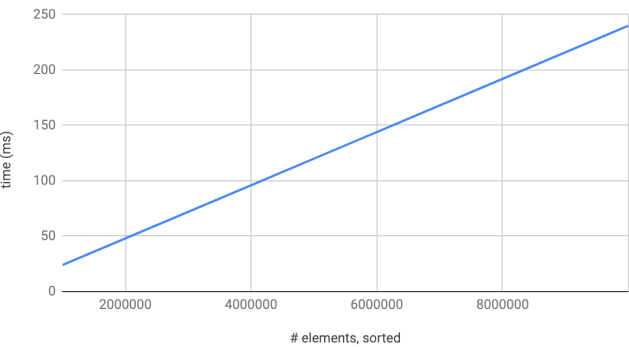


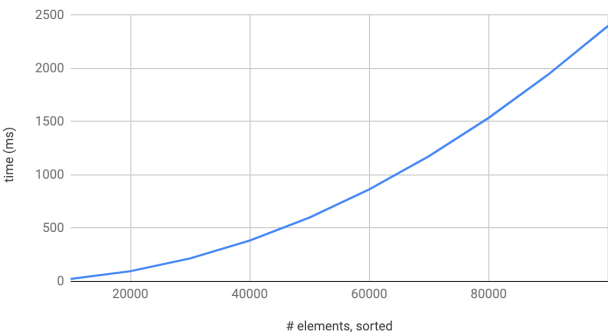
```
class Sort1 {
    public static boolean isSorted1(int[] arr) {
        for(int i = 0; i < arr.length - 1; i += 1) {
            if(arr[i] > arr[i + 1]) { return false; }
        }
        return true;
    }
}
```

time (ms) vs. # elements, sorted



```
class Sort2 {
    public static boolean isSorted2(int[] arr) {
        for(int i = 0; i < arr.length; i += 1) {
            for(int j = i + 1; j < arr.length; j += 1) {
                if(arr[i] > arr[j]) { return false; }
            }
        }
        return true;
    }
}
```

time (ms) vs. # elements, sorted



```
boolean isSorted1(int[] arr) {

    for(int i = 0;

        i < arr.length - 1;

        i += 1) {

        if(arr[i] > arr[i + 1]) {

            return false;

        }

    }

    return true;

}
```

```
// # of times evaluated
// in sorted order      unordered at index k, k+1

//

//

//

//

//

//
```

```
boolean isSorted2(int[] arr) {

    for(int i = 0;

        i < arr.length;

        i += 1) {

        for(int j = i + 1;

            j < arr.length;

            j += 1) {

            if(arr[i] > arr[j]) {

                return false;

            }

        }

    }

    return true;

}
```

```
// # of times evaluated
// in sorted order      unordered at index k, k+1

//

//

//

//

//

//

//

//
```

```
boolean find( String[] theList, String toFind ) {
```

```
    for ( int i = 0;
          i < theList.length;
          i += 1 ) {
        if ( theList[i].equals( toFind ) ) {
            return true;
        }
    }
    return false;
}
```

$O(N)$

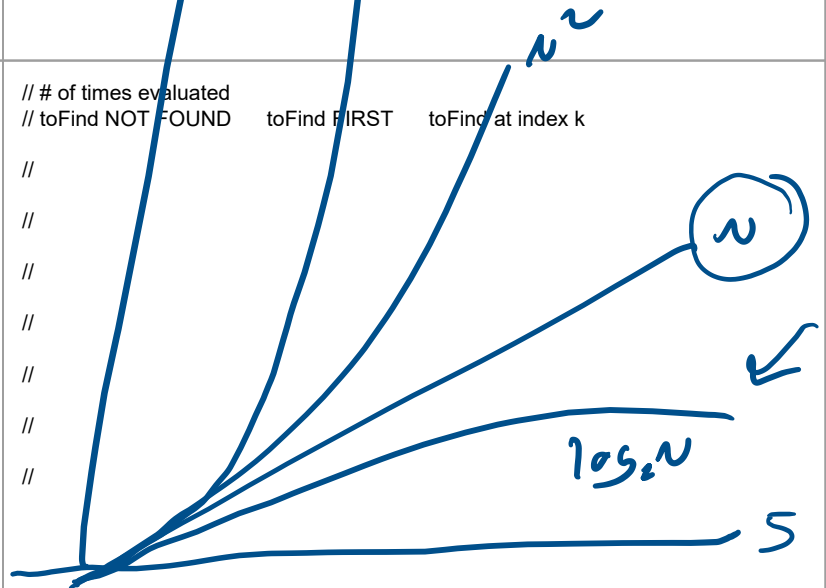
```
// # of times evaluated
// toFind NOT FOUND    toFind FIRST    toFind at index k
//
//
//
//
//
//
```

```
boolean find( String[] theList, String toFind ) {
```

```
    boolean found = false;
    for ( int i = 0;
          i < theList.length;
          i += 1 ) {
        if ( theList[i].equals( toFind ) ) {
            found = true;
        }
    }
    return found;
}
```

$O(N)$

```
// # of times evaluated
// toFind NOT FOUND    toFind FIRST    toFind at index k
//
//
//
//
//
//
```



Binary Search