Searching Quiz

2/2 questions correct

Excellent!

Retake

Next (/learn/object-oriented-java/lecture/z3w51/core-introduction-to-sorting)

✔ 1.

What is one advantage of binary search over linear search?

- ○ Binary search is generally faster

Well done!
Generally, binary search is much faster than linear search, especially if the item is not in the array.

- ○ Binary search is easier to implement
- ○ The array must be sorted to use linear search, while it can be unsorted for binary search

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✔ 2.

The following code implements binary search. Assume that the input array "toSearch" is sorted in in ascending (smallest to largest) order. Choose the option that correctly fills in the missing lines of code:

```
/* Return true if toFind is found in toSearch,
 * otherwise return false.  Uses binary search. */
public static boolean binarySeach(int[] toSearch, int toFin
d)
{
    int low = 0;
    int high = toSearch.length-1;
    int mid;
    while (low <= high)
    {
        mid = low + ((high-low)/2);
        if (<< LINE 1 HERE >>) {
            high = mid-1;
        }
        else if (<< LINE 2 HERE >>) {
            low = mid+1;
        }
        else return true;
    }
    return false;
}
```

- LINE 1:

  ```
  toFind < mid
  ```

  LINE 2:

  ```
  toFind > mid
  ```

- LINE 1:

  ```
  toFind < toSearch[low]
  ```

  LINE 2:

  ```
  toFind > toSearch[high]
  ```

- LINE 1:

  ```
  toFind > toSearch[mid]
  ```

LINE 2:

```
toFind < toSearch[mid]
```

LINE 1:

```
toFind < toSearch[mid]
```

LINE 2:

```
toFind > toSearch[mid]
```

Well done!
This is the correct response. The first if statement shifts focus to the first half of the range, which should happen if the thing you are trying to find is less than toSearch[mid], while the second if statement shifts focus to the second half of the range, which should happen if the thing you are trying to find is greater than toSearch[mid].