

Selection Code

// This code will compile with warnings about unchecked exceptions

```
public class SortsClass {

    public static void selectionSort(Comparable[] theArray,
    int n) {
    // -----
    // Sorts the items in an array into ascending order.
    // Precondition: theArray is an array of n items.
    // Postcondition: theArray is sorted into
    // ascending order.
    // Calls: indexOfLargest.
    // -----
    // last = index of the last item in the subarray of
    // items yet to be sorted
    // largest = index of the largest item found

    for (int last = n-1; last >= 1; last--) {
        // Invariant: theArray[last+1..n-1] is sorted
        // and > theArray[0..last]
        // select largest item in theArray[0..last]
        int largest = indexOfLargest(theArray, last+1);
        // swap largest item theArray[largest] with
        // theArray[last]
        Comparable temp = theArray[largest];
        theArray[largest] = theArray[last];
        theArray[last] = temp;
    } // end for
    } // end selectionSort
```

(n-1) calls to the indexOfLargest

*Execute (n-1) times
Each time requires
3 assignment statements*

$$3 * (n-1) \quad (a)$$