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Practice03Test.java

```java
53
54
55      public int find_min_iterative () {
56          // TODO: Fill in this iterative function.
57          int lowest = 0;                          // O(1)
58          for (int i = 0; i < arr.length; i++)     // O(3)
59              if (arr[lowest] > arr[i])            // O 3(n-1)
60                  lowest = i;                      // O 2(n-1)
61          return lowest;                           // O(1)
62      }                                            // Running time for Find min Iterative: O(n-1)
63
64      public int find_min_recursive(int start, int end){
65          if(start == end){                        // O(1)
66              return start;                        // O(1)
67          }
68          int mid = (start + end) / 2;             // O(3)
69          int r1 = find_min_recursive(start,mid);  // O(n)
70          int r2 = find_min_recursive(mid+1,end);  // O(n)
71          if(arr[r1] < arr[r2]){                   // O(1)
72              return r1;                           // O(1)
73          }
74          else{
75              return r2;                           // O(1)
76          }
77      }
78
79      public int find_min_recursive () {
80          // TODO: Fill in this recursive function.
81          return find_min_recursive(0,arr.length-1);    // O(1)
82
83      }                                            //Running time for Find min Recursive: O(n)
84
85
86      /**
87       * print_min: determines the min iteratively and recursively.
88       * ... and prints them both.
89       */
90      public void print_min() {
91          System.out.println("Iteratively determined min at index " + find_min_iterative());
92          System.out.println("Recursively determined min at index " + find_min_recursive());
93      }
94
95
96      /**
97       * main for Practice 03: print the array and determine the min.
98       */
99      public static void main(String [] args) {
100         Practice03Test test = new Practice03Test(args);
```