



Console X  
<terminated> QuickSort [Java Application] /Users/aryanpat/p2/pool/plugins/org.eclipse.justj.openjdk.hotspot.jre.full.macosx.x86\_64\_17.0.4.v20220805-1047/jre/bin/java (Nov 14, 2022, 6:55:56 PM – 6:55:57 PM) [pid: 27423]  
The 500000th number is: 500155  
The total run time for Selection Sort is 299ms.

ClockIn.java GroceryList.java SelectionSort.java QuickSort.java X Optimized.java

```
1 package lab8;
2
3 import java.io.BufferedReader;
4 //import java.io.FileNotFoundException;
5 import java.io.FileReader;
6 import java.io.IOException;
7 import java.util.ArrayList;
8
9 public class QuickSort {
10
11     public static void main(String[] args) throws IOException {
12
13         //The time complexity of Selection Sort is N^2 which is different from Quick Sort which is (n*log(n)). Quick sort is much faster than Selection Sort. This is different from Lab 7 results
14         //as in Lab 7 linear search had just linear complexity while binary search had log(n) which is different from the complexity of both sorting techniques used. Overall Selection Sorting took
15         //much longer than Quick Sort. Roughly 3 mins vs 2 seconds.
16
17         long start = System.currentTimeMillis();
18
19         BufferedReader bf = new BufferedReader(new FileReader("/Users/aryanpat/Desktop/12206994.txt"));
20         ArrayList<String> listOfInts = new ArrayList<String>();
21
22         String line = bf.readLine();
23
24         while (line != null) {
25             listOfInts.add(line);
26             line = bf.readLine();
27         }
28
29         bf.close();
30
31         String[] arrav = listOfInts.toArray(new String[0]);
```

