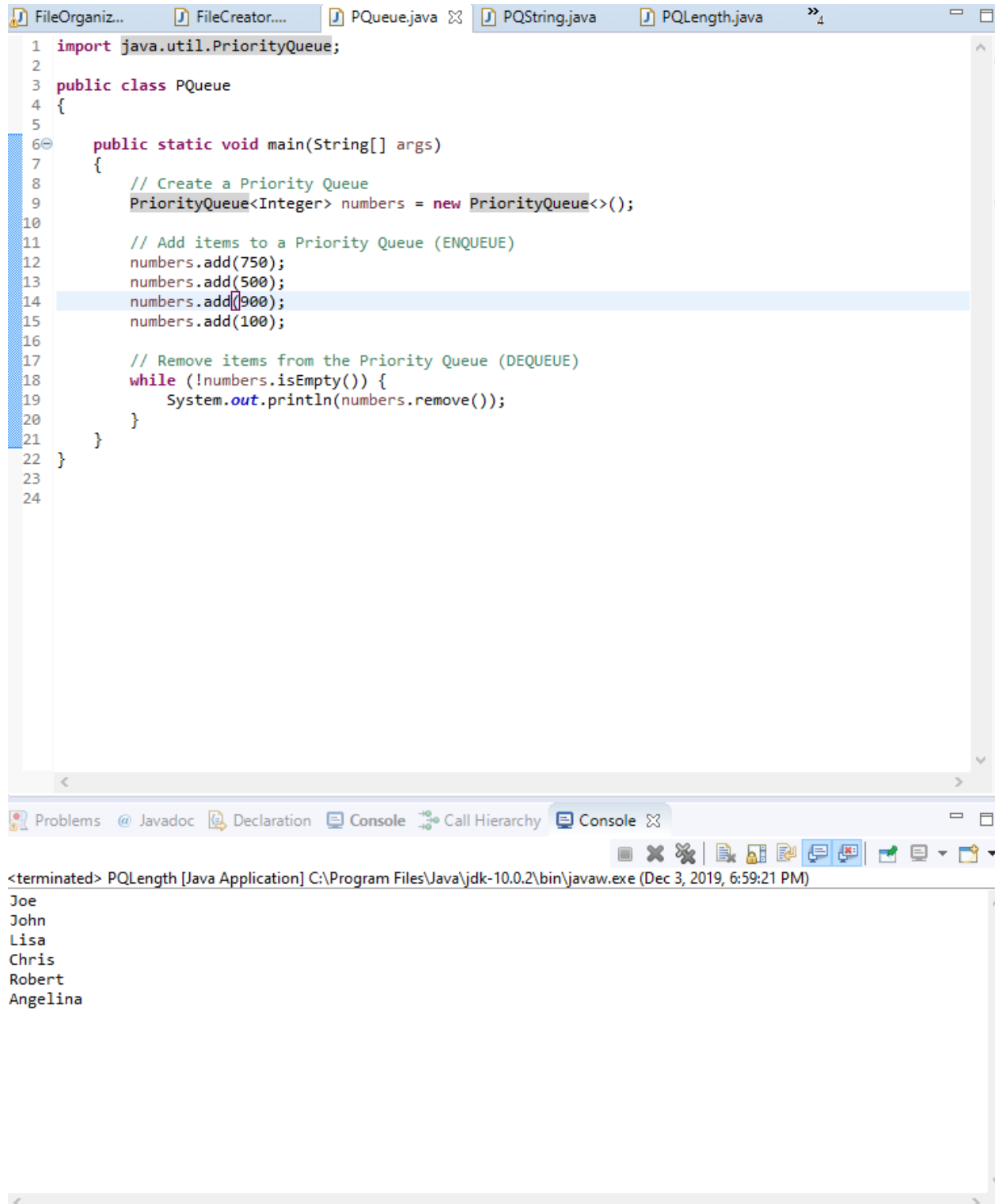


Michael Brower & Vitor Cavalcante

## **Programming Challenge – Priority Queue - Numbers:**



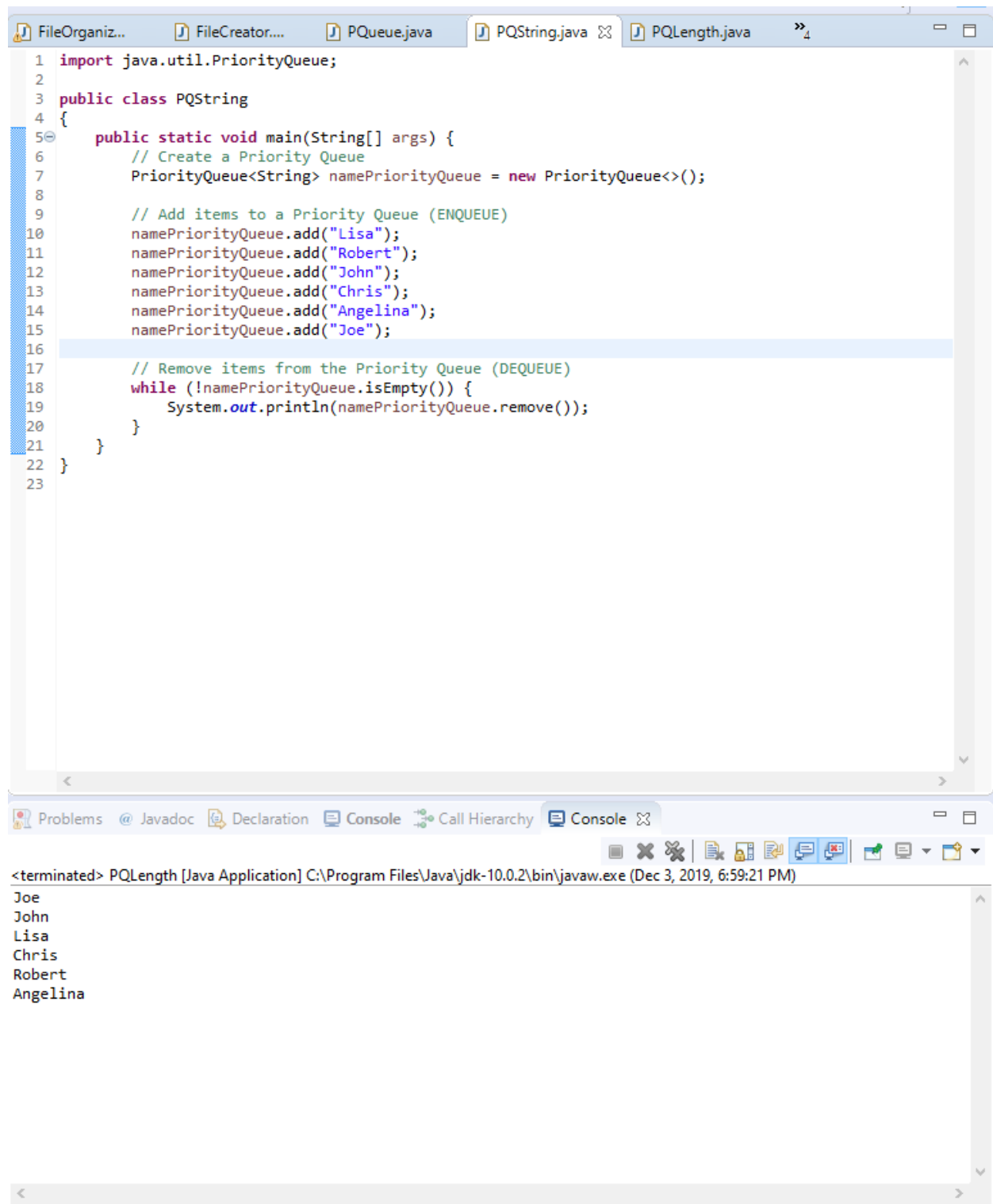
The screenshot shows an IDE with several tabs: FileOrganiz..., FileCreator..., PQueue.java, PQString.java, and PQLength.java. The PQueue.java tab is active, displaying the following code:

```
1 import java.util.PriorityQueue;
2
3 public class PQueue
4 {
5
6     public static void main(String[] args)
7     {
8         // Create a Priority Queue
9         PriorityQueue<Integer> numbers = new PriorityQueue<>();
10
11         // Add items to a Priority Queue (ENQUEUE)
12         numbers.add(750);
13         numbers.add(500);
14         numbers.add(900);
15         numbers.add(100);
16
17         // Remove items from the Priority Queue (DEQUEUE)
18         while (!numbers.isEmpty()) {
19             System.out.println(numbers.remove());
20         }
21     }
22 }
23
24
```

Below the code editor, the console window is visible, showing the output of the program:

```
<terminated> PQLength [Java Application] C:\Program Files\Java\jdk-10.0.2\bin\javaw.exe (Dec 3, 2019, 6:59:21 PM)
Joe
John
Lisa
Chris
Robert
Angelina
```

## Programming Challenge – Priority Queue - Strings:

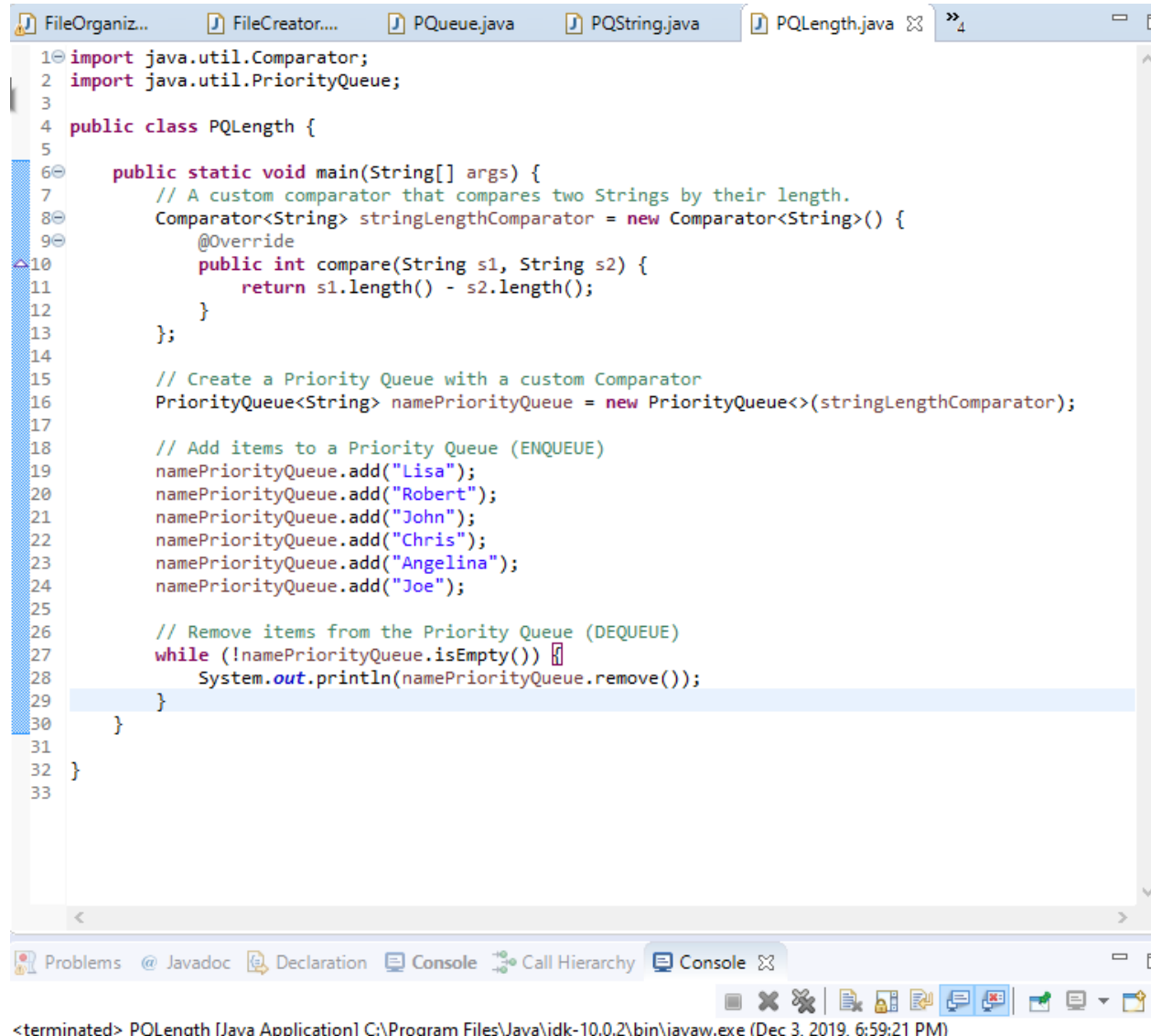


```
1 import java.util.PriorityQueue;
2
3 public class PQString
4 {
5     public static void main(String[] args) {
6         // Create a Priority Queue
7         PriorityQueue<String> namePriorityQueue = new PriorityQueue<>();
8
9         // Add items to a Priority Queue (ENQUEUE)
10        namePriorityQueue.add("Lisa");
11        namePriorityQueue.add("Robert");
12        namePriorityQueue.add("John");
13        namePriorityQueue.add("Chris");
14        namePriorityQueue.add("Angelina");
15        namePriorityQueue.add("Joe");
16
17        // Remove items from the Priority Queue (DEQUEUE)
18        while (!namePriorityQueue.isEmpty()) {
19            System.out.println(namePriorityQueue.remove());
20        }
21    }
22 }
23
```

<terminated> PQLength [Java Application] C:\Program Files\Java\jdk-10.0.2\bin\javaw.exe (Dec 3, 2019, 6:59:21 PM)

Joe  
John  
Lisa  
Chris  
Robert  
Angelina

## Programming Challenge – Priority Queue - Custom Comparator:



```
1 import java.util.Comparator;
2 import java.util.PriorityQueue;
3
4 public class PQLength {
5
6     public static void main(String[] args) {
7         // A custom comparator that compares two Strings by their length.
8         Comparator<String> stringLengthComparator = new Comparator<String>() {
9             @Override
10             public int compare(String s1, String s2) {
11                 return s1.length() - s2.length();
12             }
13         };
14
15         // Create a Priority Queue with a custom Comparator
16         PriorityQueue<String> namePriorityQueue = new PriorityQueue<>(stringLengthComparator);
17
18         // Add items to a Priority Queue (ENQUEUE)
19         namePriorityQueue.add("Lisa");
20         namePriorityQueue.add("Robert");
21         namePriorityQueue.add("John");
22         namePriorityQueue.add("Chris");
23         namePriorityQueue.add("Angelina");
24         namePriorityQueue.add("Joe");
25
26         // Remove items from the Priority Queue (DEQUEUE)
27         while (!namePriorityQueue.isEmpty()) {
28             System.out.println(namePriorityQueue.remove());
29         }
30     }
31 }
32
33
```

Problems @ Javadoc Declaration Console Call Hierarchy Console

<terminated> PQLength [Java Application] C:\Program Files\Java\jdk-10.0.2\bin\javaw.exe (Dec 3, 2019, 6:59:21 PM)

```
Joe
John
Lisa
Chris
Robert
Angelina
```