

```
1 public class Merger {  
2     Merger[] half; // two half-width merger networks  
3     Balancer[] layer; // final layer  
4     final int width;  
5     public Merger(int myWidth) {  
6         width = myWidth;  
7         layer = new Balancer[width / 2];  
8         for (int i = 0; i < width / 2; i++) {  
9             layer[i] = new Balancer();  
10        }  
11        if (width > 2) {  
12            half = new Merger[]{new Merger(width/2), new Merger(width/2)};  
13        }  
14    }  
15    public int traverse(int input) {  
16        int output = 0;  
17        if (input < width / 2) {  
18            output = half[input % 2].traverse(input / 2);  
19        } else {  
20            output = half[1 - (input % 2)].traverse(input / 2);  
21        return (2 * output) + layer[output].traverse();  
22    }  
23 }
```

FIGURE 12.15 The Merger class.