

```

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.