

```

1  public class MatrixAddTask extends RecursiveAction {
2      static final int N = ...;
3      static final int THRESHOLD = ...;
4      Matrix lhs, rhs, sum;
5      public MatrixAddTask(Matrix lhs, Matrix rhs, Matrix sum) {
6          this.lhs = lhs;
7          this.rhs = rhs;
8          this.sum = sum;
9      }
10     public void compute() {
11         int n = lhs.getDim();
12         if (n <= THRESHOLD) {
13             Matrix.add(lhs, rhs, sum);
14         } else {
15             List<MatrixAddTask> tasks = new ArrayList<>(4);
16             for (int i = 0; i < 2; i++) {
17                 for (int j = 0; j < 2; j++) {
18                     tasks.add(
19                         new MatrixAddTask(
20                             lhs.split(i, j),
21                             rhs.split(i, j),
22                             sum.split(i, j)
23                         )
24                     );
25                 }
26             }
27             tasks.stream().forEach((task) -> {
28                 task.fork();
29             });
30             tasks.stream().forEach((task) -> {
31                 task.join();
32             });
33         }
34     }

```

**FIGURE 16.4** The MatrixAddTask class: fork-join parallel matrix addition.