```
1  public class AtomicMRSWRegister<T> implements Register<T> {
2    ThreadLocal<Long> lastStamp;
3    private StampedValue<T>[][] a_table; // each entry is an atomic SRSW register
4    public AtomicMRSWRegister(T init, int readers) {
5      lastStamp = new ThreadLocal<Long>() {
6         protected Long initialValue() { return 0; };
7      };
8      a_table = (StampedValue<T>[][]) new StampedValue[readers][readers];
9      StampedValue<T> value = new StampedValue<T>(init);
10     for (int i = 0; i < readers; i++) {
11       for (int j = 0; j < readers; j++) {
12         a_table[i][j] = value;
13       }
14     }
15   }
16   public T read() {
17     int me = ThreadID.get();
18     StampedValue<T> value = a_table[me][me];
19     for (int i = 0; i < a_table.length; i++) {
20       value = StampedValue.max(value, a_table[i][me]);
21     }
22     for (int i = 0; i < a_table.length; i++) {
23       if (i == me) continue;
24       a_table[me][i] = value;
25     }
26     return value;
27   }
28   public void write(T v) {
29     long stamp = lastStamp.get() + 1;
30     lastStamp.set(stamp);
31     StampedValue<T> value = new StampedValue<T>(stamp, v);
32     for (int i = 0; i < a_table.length; i++) {
33       a_table[i][i] = value;
34     }
35   }
36 }
```

FIGURE 4.12 The AtomicMRSWRegister class: an atomic MRSW register constructed from atomic SRSW registers.