

(a) Position 1

|     |                  |                  |                  |                  |
|-----|------------------|------------------|------------------|------------------|
|     | $001, \emptyset$ | $001, \emptyset$ | $101, \emptyset$ | $001, \emptyset$ |
| 000 | $001, \emptyset$ | $001, \emptyset$ | $101, \emptyset$ | $001, \emptyset$ |
| 001 | $110, W$         | $110, W$         | $010, \emptyset$ | $010, \emptyset$ |
| 010 | $011, \emptyset$ | $011, \emptyset$ | $011, \emptyset$ | $011, \emptyset$ |
| 011 | $000, \emptyset$ | $000, \emptyset$ | $000, \emptyset$ | $000, \emptyset$ |
| 100 | $101, \emptyset$ | $001, \emptyset$ | $101, \emptyset$ | $101, \emptyset$ |
| 101 | $110, N$         | $010, \emptyset$ | $110, N$         | $110, \emptyset$ |
| 110 | $111, \emptyset$ | $111, \emptyset$ | $111, \emptyset$ | $111, \emptyset$ |
| 111 | $100, \emptyset$ | $100, \emptyset$ | $100, \emptyset$ | $100, \emptyset$ |

(b) Position 5

Figure 1: State machine(s) (a) at position 1, (b) at position 5.

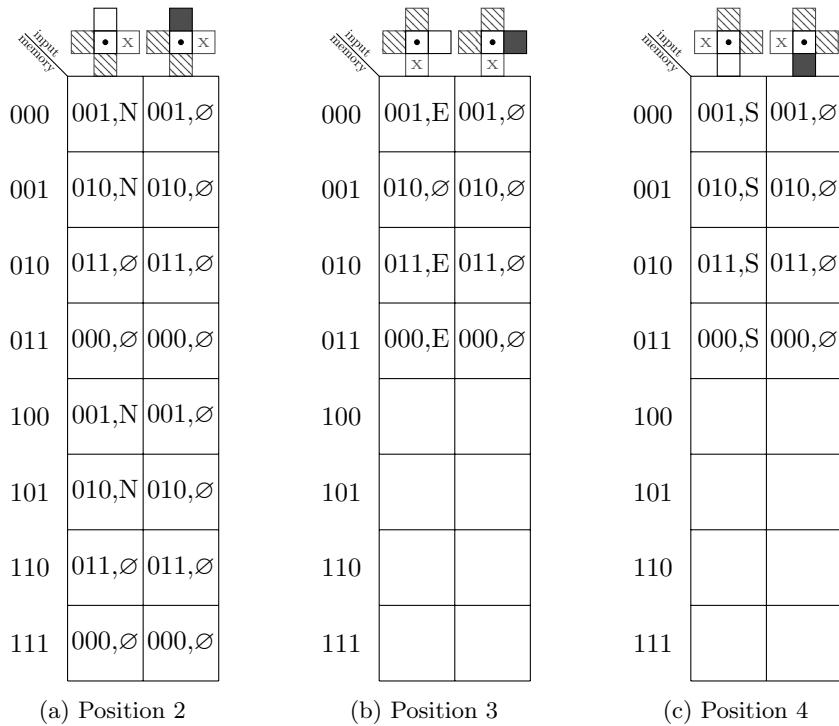


Figure 2: State machine(s) (a) at position 2, (b) at position 3, (c) at position 4.

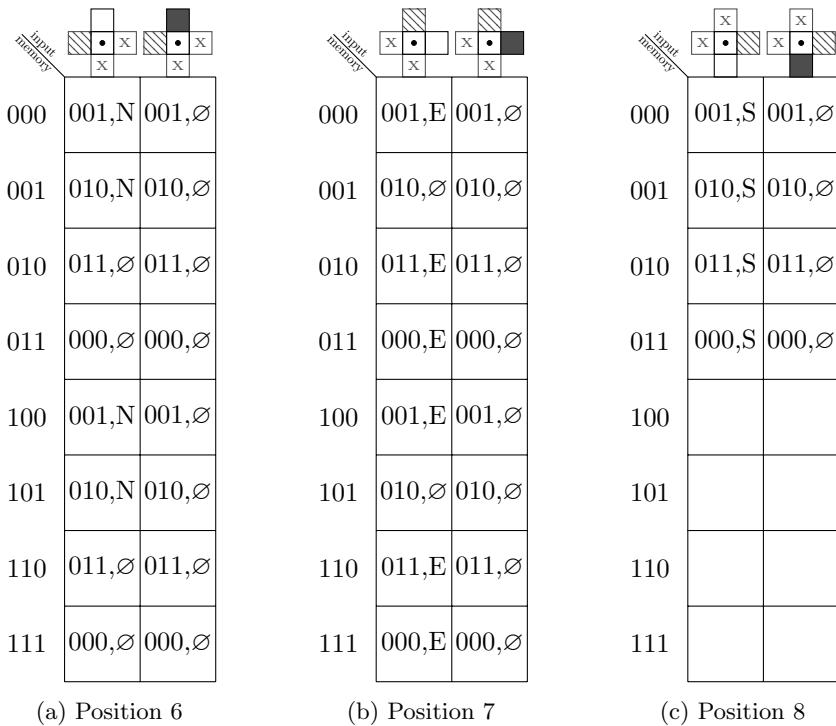


Figure 3: State machine(s) (a) at position 6, (b) at position 7, (c) at position 8.

input memory

|     |                  |                  |                  |                  |                  |                  |                  |                  |  |
|-----|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|--|
|     |                  |                  |                  |                  |                  |                  |                  |                  |  |
| 000 | 001,S            | 001,S            | 101, $\emptyset$ | 101, $\emptyset$ | 001,S            | 001,S            | 001, $\emptyset$ | 001, $\emptyset$ |  |
| 001 | 010, $\emptyset$ |  |
| 010 | 111,W            | 011, $\emptyset$ |  |
| 011 | 100,W            | 000, $\emptyset$ |  |
| 100 | 101, $\emptyset$ |  |
| 101 | 110,N            | 110,N            | 110,N            | 110,N            | 010, $\emptyset$ | 010, $\emptyset$ | 110, $\emptyset$ | 110, $\emptyset$ |  |
| 110 | 111,W            | 111, $\emptyset$ |  |
| 111 | 100,W            | 100, $\emptyset$ |  |

(a) Position 9

Figure 4: State machine(s) (a) at position 9.