

## 0.1 Zakodowane wejśc, wyjsc i stanow wewnetrznych

	$Z$
$z_0$	0
$z_1$	1

	$Y$
$y_0$	0
$y_1$	1

	$Q_4$	$Q_3$	$Q_2$	$Q_1$	$Q_0$
$q_0$	0	0	0	0	0
$q_1$	0	0	0	0	1
$q_2$	0	0	0	1	0
$q_3$	0	0	0	1	1
$q_4$	0	0	1	0	0
$q_5$	0	0	1	0	1
$q_6$	0	0	1	1	0
$q_7$	0	0	1	1	1
$q_8$	0	1	0	0	0
$q_9$	0	1	0	0	1
$q_{10}$	0	1	0	1	0
$q_{11}$	0	1	0	1	1
$q_{12}$	0	1	1	0	0
$q_{13}$	0	1	1	0	1
$q_{14}$	0	1	1	1	0
$q_{15}$	0	1	1	1	1
$q_{16}$	1	0	0	0	0
$q_{17}$	1	0	0	0	1
$q_{18}$	1	0	0	1	0
$q_{19}$	1	0	0	1	1

## 0.2 Zakodowane przejścia stanów

t	t+1
0	1
1	2
2	3
3	4
4	5
5	6
6	7
7	8
8	9
9	10
10	11
11	12
12	13
13	14
14	15
15	16
16	17
17	18
18	19
19	0

### 0.3 Tabela przejść dla przerzutników JK

t					t+1					Przerzutniki									
$Q_4$	$Q_3$	$Q_2$	$Q_1$	$Q_0$	$Q_4$	$Q_3$	$Q_2$	$Q_1$	$Q_0$	$J_4$	$K_4$	$J_3$	$K_3$	$J_2$	$K_2$	$J_1$	$K_1$	$J_0$	$K_0$
0	0	0	0	0	0	0	0	0	1	0	*	0	*	0	*	0	*	1	*
0	0	0	0	1	0	0	0	1	0	0	*	0	*	0	*	1	*	*	1
0	0	0	1	0	0	0	0	1	1	0	*	0	*	0	*	*	0	1	*
0	0	0	1	1	0	0	1	0	0	0	*	0	*	1	*	*	1	*	1
0	0	1	0	0	0	0	1	0	1	0	*	0	*	*	0	0	*	1	*
0	0	1	0	1	0	0	1	1	0	0	*	0	*	*	0	1	*	*	1
0	0	1	1	0	0	0	1	1	1	0	*	0	*	*	0	*	0	1	*
0	0	1	1	1	0	1	0	0	0	0	*	1	*	*	1	*	1	*	1
0	1	0	0	0	0	1	0	0	1	0	*	*	0	0	*	0	*	1	*
0	1	0	0	1	0	1	0	1	0	0	*	*	0	0	*	1	*	*	1
0	1	0	1	0	0	1	0	1	1	0	*	*	0	0	*	*	0	1	*
0	1	0	1	1	0	1	1	0	0	0	*	*	0	1	*	*	1	*	1
0	1	1	0	0	0	1	1	1	0	0	*	*	0	*	0	*	0	1	*
0	1	1	0	1	0	1	1	1	1	0	*	*	0	*	0	*	0	1	*
0	1	1	1	0	0	1	1	1	1	1	*	*	1	*	1	*	1	*	1
0	1	1	1	1	1	0	0	0	0	1	*	*	1	*	1	*	1	*	1
1	0	0	0	0	1	0	0	0	1	*	0	0	*	0	*	0	*	1	*
1	0	0	0	1	1	0	0	1	0	*	0	0	*	0	*	1	*	*	1
1	0	0	1	0	1	0	0	1	1	*	0	0	*	0	*	*	0	1	*
1	0	0	1	1	0	0	0	0	0	*	1	0	*	0	*	*	1	*	1

#### 0.4 Minimalizacja metoda Karnough dla przerzutników JK

$J_4$				
$Q_4Q_3Q_2 / Q_1Q_0$	00	01	11	10
000	0	0	0	0
001	0	0	0	0
011	0	0	1	0
010	0	0	0	0
110	*	*	*	*
111	*	*	*	*
101	*	*	*	*
100	*	*	*	*

$$J_4 = Q_3Q_2Q_1Q_0$$

$J_3$				
$Q_4Q_3Q_2 / Q_1Q_0$	00	01	11	10
000	0	0	0	0
001	0	0	1	0
011	*	*	*	*
010	*	*	*	*
110	*	*	*	*
111	*	*	*	*
101	*	*	*	*
100	0	0	0	0

$$J_3 = Q_2Q_1Q_0$$

$J_2$				
$Q_4Q_3Q_2 / Q_1Q_0$	00	01	11	10
000	0	0	1	0
001	*	*	*	*
011	*	*	*	*
010	0	0	1	0
110	*	*	*	*
111	*	*	*	*
101	*	*	*	*
100	0	0	0	0

$$J_2 = \overline{Q}_4Q_1Q_0$$

$K_4$				
$Q_4Q_3Q_2 / Q_1Q_0$	00	01	11	10
000	*	*	*	*
001	*	*	*	*
011	*	*	*	*
010	*	*	*	*
110	*	*	*	*
111	*	*	*	*
101	*	*	*	*
100	0	0	1	0

$$K_4 = Q_1Q_0$$

$K_3$				
$Q_4Q_3Q_2 / Q_1Q_0$	00	01	11	10
000	*	*	*	*
001	*	*	*	*
011	0	0	1	0
010	0	0	0	0
110	*	*	*	*
111	*	*	*	*
101	*	*	*	*
100	*	*	*	*

$$K_3 = Q_2Q_1Q_0$$

$K_2$				
$Q_4Q_3Q_2 / Q_1Q_0$	00	01	11	10
000	*	*	*	*
001	0	0	1	0
011	0	0	1	0
010	*	*	*	*
110	*	*	*	*
111	*	*	*	*
101	*	*	*	*
100	*	*	*	*

$$K_2 = Q_1Q_0$$

$J_1$				
$Q_4Q_3Q_2 / Q_1Q_0$	00	01	11	10
000	0	1	*	*
001	0	1	*	*
011	0	1	*	*
010	0	1	*	*
110	*	*	*	*
111	*	*	*	*
101	*	*	*	*
100	0	1	*	*

$$J_1 = Q_0$$

$J_0$				
$Q_4Q_3Q_2 / Q_1Q_0$	00	01	11	10
000	1	*	*	1
001	1	*	*	1
011	1	*	*	1
010	1	*	*	1
110	*	*	*	*
111	*	*	*	*
101	*	*	*	*
100	1	*	*	1

$$J_0 = 1$$

$K_1$				
$Q_4Q_3Q_2 / Q_1Q_0$	00	01	11	10
000	*	*	1	0
001	*	*	1	0
011	*	*	1	0
010	*	*	1	0
110	*	*	*	*
111	*	*	*	*
101	*	*	*	*
100	*	*	1	0

$$K_1 = Q_0$$

$K_0$				
$Q_4Q_3Q_2 / Q_1Q_0$	00	01	11	10
000	*	1	1	*
001	*	1	1	*
011	*	1	1	*
010	*	1	1	*
110	*	*	*	*
111	*	*	*	*
101	*	*	*	*
100	*	1	1	*

$$K_0 = 1$$