# Київський Національний Університет імені Т. Шевченка

# Факультет комп’ютерних наук та кібернетики

# **Структурна теорія цифрових автоматів**

## Проектування та дослідження регістрів

Варіант 3

Виконала

Студентка групи ІПС-31

Величко Т.С.

**Київ-2019**

# **1 Представлення булевої функції.**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| S1S | S2S | DiS | QSi+1 | QiS | QiS+1 | D’і | Tі | Rі | Sі | Jі | Kі |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | \* | 0 | 0 | \* |
| 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | \* | 1 |
| 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | \* |
| 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | \* | \* | 0 |
| 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | \* | 0 | 0 | \* |
| 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | \* | 1 |
| 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | \* |
| 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | \* | \* | 0 |
| 0 | 1 | 0 | 0 | 0 | 0 | 0 | \* | 0 | 0 | \* | 0 |
| 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | \* | 1 | 0 |
| 0 | 1 | 0 | 1 | 0 | 0 | 0 | \* | 0 | 0 | \* | 0 |
| 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | \* | 1 | 0 |
| 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | \* | 1 |
| 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | \* | \* | 0 | 1 |
| 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | \* | 1 |
| 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | \* | \* | 0 | 1 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | \* | 0 | 0 | \* |
| 1 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | \* | \* | 0 |
| 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | \* | 0 | 0 | \* |
| 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | \* | \* | 0 |
| 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | \* |
| 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | \* | 1 |
| 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | \* |
| 1 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | \* | 1 |
| 1 | 1 | 0 | 0 | 0 | \* | \* | \* | \* | \* | \* | \* |
| 1 | 1 | 0 | 0 | 1 | \* | \* | \* | \* | \* | \* | \* |
| 1 | 1 | 0 | 1 | 0 | \* | \* | \* | \* | \* | \* | \* |
| 1 | 1 | 0 | 1 | 1 | \* | \* | \* | \* | \* | \* | \* |
| 1 | 1 | 1 | 0 | 0 | \* | \* | \* | \* | \* | \* | \* |
| 1 | 1 | 1 | 0 | 1 | \* | \* | \* | \* | \* | \* | \* |
| 1 | 1 | 1 | 1 | 0 | \* | \* | \* | \* | \* | \* | \* |
| 1 | 1 | 1 | 1 | 1 | \* | \* | \* | \* | \* | \* | \* |

# **2 Представлення булевої функції.**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| С | S2S | DiS | QiS | QiS+1 | Tі | Rі | Sі |
| 0 | 0 | 0 | 0 | 0 | 0 | \* | 0 |
| 0 | 0 | 0 | 1 | 1 | 0 | 0 | \* |
| 0 | 0 | 1 | 0 | 0 | 0 | \* | 0 |
| 0 | 0 | 1 | 1 | 1 | 0 | 0 | \* |
| 0 | 1 | 0 | 0 | 0 | 0 | \* | 0 |
| 0 | 1 | 0 | 1 | 1 | 0 | 0 | \* |
| 0 | 1 | 1 | 0 | 0 | 0 | \* | 0 |
| 0 | 1 | 1 | 1 | 1 | 0 | 0 | \* |
| 1 | 0 | 0 | 0 | 0 | 0 | \* | 0 |
| 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 |
| 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 |
| 1 | 0 | 1 | 1 | 1 | 0 | 0 | \* |
| 1 | 1 | 0 | 0 | 0 | 0 | \* | 0 |
| 1 | 1 | 0 | 1 | 1 | 0 | 0 | \* |
| 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 |

# **3 Представлення булевої функції.**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| y2S | y5S | DiS | QSi+1 | QiS | QiS+1 | Tі | Rі | Sі |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | \* | 0 |
| 0 | 0 | 0 | 0 | 1 | 1 |  |  |  |
| 0 | 0 | 0 | 1 | 0 | 0 |  |  |  |
| 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | \* |
| 0 | 0 | 1 | 0 | 0 | 0 | 0 | \* | 0 |
| 0 | 0 | 1 | 0 | 1 | 1 |  |  |  |
| 0 | 0 | 1 | 1 | 0 | 0 |  |  |  |
| 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | \* |
| 0 | 1 | 0 | 0 | 0 | 0 |  |  |  |
| 0 | 1 | 0 | 0 | 1 | 0 |  |  |  |
| 0 | 1 | 0 | 1 | 0 | 1 |  |  |  |
| 0 | 1 | 0 | 1 | 1 | 1 |  |  |  |
| 0 | 1 | 1 | 0 | 0 | 0 |  |  |  |
| 0 | 1 | 1 | 0 | 1 | 0 |  |  |  |
| 0 | 1 | 1 | 1 | 0 | 1 |  |  |  |
| 0 | 1 | 1 | 1 | 1 | 1 |  |  |  |
| 1 | 0 | 0 | 0 | 0 | 0 |  |  |  |
| 1 | 0 | 0 | 0 | 1 | 0 |  |  |  |
| 1 | 0 | 0 | 1 | 0 | 0 |  |  |  |
| 1 | 0 | 0 | 1 | 1 | 0 |  |  |  |
| 1 | 0 | 1 | 0 | 0 | 0 |  |  |  |
| 1 | 0 | 1 | 0 | 1 | 1 |  |  |  |
| 1 | 0 | 1 | 1 | 0 | 0 |  |  |  |
| 1 | 0 | 1 | 1 | 1 | 1 |  |  |  |
| 1 | 1 | 0 | 0 | 0 | \* | \* | \* | \* |
| 1 | 1 | 0 | 0 | 1 | \* | \* | \* | \* |
| 1 | 1 | 0 | 1 | 0 | \* | \* | \* | \* |
| 1 | 1 | 0 | 1 | 1 | \* | \* | \* | \* |
| 1 | 1 | 1 | 0 | 0 | \* | \* | \* | \* |
| 1 | 1 | 1 | 0 | 1 | \* | \* | \* | \* |
| 1 | 1 | 1 | 1 | 0 | \* | \* | \* | \* |
| 1 | 1 | 1 | 1 | 1 | \* | \* | \* | \* |