EJERCICIO 1º

1. Contador de 0 a 9.

TABLA DE VERDAD

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Q3 | Q2 | Q1 | Q0 |  | Q3 | Q2 | Q1 | Q0 |
| 0 | 0 | 0 | 0 | | | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 1 | | | 0 | 0 | 1 | 0 |
| 0 | 0 | 1 | 0 | | | 0 | 0 | 1 | 1 |
| 0 | 0 | 1 | 1 | | | 0 | 1 | 0 | 0 |
| 0 | 1 | 0 | 0 | | | 0 | 1 | 0 | 1 |
| 0 | 1 | 0 | 1 | | | 0 | 1 | 1 | 0 |
| 0 | 1 | 1 | 0 | | | 0 | 1 | 1 | 1 |
| 0 | 1 | 1 | 1 | | | 1 | 0 | 0 | 0 |
| 1 | 0 | 0 | 0 | | | 1 | 0 | 0 | 1 |
| 1 | 0 | 0 | 1 | | | 0 | 0 | 0 | 0 |

TABLA KARNAUGH D1

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| D1 | Q1/Q0 |  |  |  |
| Q3/Q2 | 0.0 | 0.1 | 11 | 10 |
| 0.0 | 1 | 0 | 0 | 1 |
| 0.1 | 1 | 0 | 0 | 1 |
| 11 | X | X | X | X |
| 10 | 1 | 0 | X | X |
|  |  |  |  |  |
|  |  |  |  |  |
|  | D1 = Q0' |  |  |  |

TABLA KARNAUGH D2

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| D2 | Q1/Q0 |  |  |  |
| Q3/Q2 | 0.0 | 0.1 | 11 | 10 |
| 0.0 | 0 | 1 | 0 | 1 |
| 0.1 | 0 | 1 | 0 | 1 |
| 11 | X | X | X | X |
| 10 | 0 | 0 | X | X |
|  |  |  |  |  |
|  |  |  |  |  |
|  | Q1 x Q0' | D2 = (Q1 x Q0') + (Q3' x Q1' x Q0) | | |
|  | Q3' x Q1' x Q0 | |  |  |

TABLA KARNAUGH D3

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| D3 | Q1/Q0 |  |  |  |
| Q3/Q2 | 0.0 | 0.1 | 11 | 10 |
| 0.0 | 0 | 0 | 1 | 0 |
| 0.1 | 1 | 1 | 0 | 1 |
| 11 | X | X | X | X |
| 10 | 0 | 0 | X | X |
|  |  |  |  |  |
|  |  |  |  |  |
|  | Q2 x Q1' | D3 = (Q2 x Q1') + (Q2' x Q1 x Q0) + (Q2 x Q1') | | |
|  | Q2' x Q1 x Q0 | |  |  |
|  | Q2 x Q0' |  |  |  |

TABLA KARNAUGH D4

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| D4 | Q1/Q0 |  |  |  |
| Q3/Q2 | 0.0 | 0.1 | 11 | 10 |
| 0.0 | 0 | 0 | 0 | 0 |
| 0.1 | 0 | 0 | 1 | 0 |
| 11 | X | X | X | X |
| 10 | 1 | 0 | X | X |
|  |  |  |  |  |
|  |  |  |  |  |
|  | Q3 x Q0' | D4 = (Q3 x Q0') + (Q2 x Q1 x Q0) | | |
|  | Q2 x Q1 x Q0 | |  |  |

CIRCUITO

Diagrama

Descripción generada automáticamente

1. SEMAFORO IMPLEMENTAR EN CIRCUITO ANTERIOR. (MAXITERMINOS)

TABLA DE VERDAD:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Q3 | Q2 | Q1 | Q0 |  | V | A | R |
| 0 | 0 | 0 | 0 | | | 1 | 0 | 0 |
| 0 | 0 | 0 | 1 | | | 1 | 0 | 0 |
| 0 | 0 | 1 | 0 | | | 1 | 0 | 0 |
| 0 | 0 | 1 | 1 | | | 1 | 0 | 0 |
| 0 | 1 | 0 | 0 | | | 0 | 1 | 0 |
| 0 | 1 | 0 | 1 | | | 0 | 0 | 1 |
| 0 | 1 | 1 | 0 | | | 0 | 0 | 1 |
| 0 | 1 | 1 | 1 | | | 0 | 0 | 1 |
| 1 | 0 | 0 | 0 | | | 0 | 0 | 1 |
| 1 | 0 | 0 | 1 | | | 0 | 0 | 1 |

TABLA KARNAUGH VERDE

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| VERDE | Q1/Q0 |  |  |  |
| Q3/Q2 | 0.0 | 0.1 | 11 | 10 |
| 0.0 | 1 | 1 | 1 | 1 |
| 0.1 | 0 | 0 | 0 | 0 |
| 11 | X | X | X | X |
| 10 | 0 | 0 | X | X |
|  |  |  |  |  |
|  |  |  |  |  |
|  | Q2' | VERDE = Q2' x Q3' | |  |
|  | Q3' |  |  |  |

TABLA KARNAUGH AMARILLO

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| AMARILLO | Q1/Q0 |  |  |  |
| Q3/Q2 | 0.0 | 0.1 | 11 | 10 |
| 0.0 | 0 | 0 | 0 | 0 |
| 0.1 | 1 | 0 | 0 | 0 |
| 11 | X | X | X | X |
| 10 | 0 | 0 | X | X |
|  |  |  |  |  |
|  |  |  |  |  |
|  | Q3 + Q2 | AMARILLO = (Q3 + Q2) x (Q3') x (Q1') x (Q3 + Q0') | | |
|  | Q3' |  |  |  |
|  | Q1' |  |  |  |
|  | Q3 + Q0' |  |  |  |

TABLA KARNAUGH ROJO

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ROJO | Q1/Q0 |  |  |  |
| Q3/Q2 | 0.0 | 0.1 | 11 | 10 |
| 0.0 | 0 | 0 | 0 | 0 |
| 0.1 | 0 | 1 | 1 | 1 |
| 11 | X | X | X | X |
| 10 | 1 | 1 | X | X |
|  |  |  |  |  |
|  |  |  |  |  |
|  | Q3 + Q2 | ROJO = (Q3 + Q2) x (Q3 + Q1 + Q0) | | |
|  | Q3 + Q1 + Q0 | |  |  |

CIRCUITO SEMAFORO

Imagen que contiene interior, tabla, mucho, montón

Descripción generada automáticamente

CIRCUITO SEMAFORO EN CIRCUITO MULTITERMINAL

Diagrama

Descripción generada automáticamente