# SISTEMAS DIGITAIS

PARTE 5

COMPOSIÇÃO DE CIRCUITOS

# COMPOSIÇÃO DE CIRCUITOS

## LÓGICA ELETRÔNICA

| ENTRADAS | | SAÍDA |
|---|---|---|
| A | B | Z |
| 0 | 0 | 0 |
| 0 | 1 | 0 |
| 1 | 0 | 0 |
| 1 | 1 | 1 |

| ENTRADAS | | SAÍDA |
|---|---|---|
| A | B | Z |
| 0 | 0 | 0 |
| 0 | 1 | 1 |
| 1 | 0 | 1 |
| 1 | 1 | 1 |

| ENTRADAS | | SAÍDA |
|---|---|---|
| A | B | Z |
| 0 | 0 | 0 |
| 0 | 1 | 1 |
| 1 | 0 | 1 |
| 1 | 1 | 0 |

| ENTRADAS | | SAÍDA |
|---|---|---|
| A | B | Z |
| 0 | 0 | 1 |
| 0 | 1 | 1 |
| 1 | 0 | 1 |
| 1 | 1 | 0 |

| ENTRADAS | | SAÍDA |
|---|---|---|
| A | B | Z |
| 0 | 0 | 1 |
| 0 | 1 | 0 |
| 1 | 0 | 0 |
| 1 | 1 | 0 |

| ENTRADAS | | SAÍDA |
|---|---|---|
| A | B | Z |
| 0 | 0 | 1 |
| 0 | 1 | 0 |
| 1 | 0 | 0 |
| 1 | 1 | 1 |

| ENTRADA | SAÍDA |
|---|---|
| A | Z |
| 0 | 1 |
| 1 | 0 |

# MONTE O CIRCUITO QUE ATENDA A SEGUINTE TABELA VERDADE:

| ENTRADAS | | | SAÍDAS | |
|---|---|---|---|---|
| A | B | C | X | Y |
| 0 | 0 | 0 | 1 | 1 |
| 0 | 0 | 1 | 0 | 1 |
| 0 | 1 | 0 | 0 | 1 |
| 0 | 1 | 1 | 0 | 0 |
| 1 | 0 | 0 | 1 | 0 |
| 1 | 0 | 1 | 0 | 1 |
| 1 | 1 | 0 | 0 | 1 |
| 1 | 1 | 1 | 1 | 0 |

CIRC_013

# MONTE O CIRCUITO QUE ATENDA A SEGUINTE TABELA VERDADE:

| ENTRADAS | | | SAÍDAS | |
|---|---|---|---|---|
| A | B | C | X | Y |
| 0 | 0 | 0 | 1 | 1 |
| 0 | 0 | 1 | 0 | 1 |
| 0 | 1 | 0 | 0 | 1 |
| 0 | 1 | 1 | 0 | 0 |
| 1 | 0 | 0 | 1 | 0 |
| 1 | 0 | 1 | 0 | 1 |
| 1 | 1 | 0 | 0 | 1 |
| 1 | 1 | 1 | 1 | 0 |

CIRC_013

# MONTE O CIRCUITO QUE ATENDA A SEGUINTE TABELA VERDADE:

| ENTRADAS | | | SAÍDAS | |
|---|---|---|---|---|
| A | B | C | X | Y |
| 0 | 0 | 0 | 1 | 1 |
| 0 | 0 | 1 | 0 | 1 |
| 0 | 1 | 0 | 0 | 1 |
| 0 | 1 | 1 | 0 | 0 |
| 1 | 0 | 0 | 1 | 0 |
| 1 | 0 | 1 | 0 | 1 |
| 1 | 1 | 0 | 0 | 1 |
| 1 | 1 | 1 | 1 | 0 |

CIRC_013

# NOVO EXERCÍCIO

# MONTE O CIRCUITO QUE ATENDA A SEGUINTE TABELA VERDADE:

| ENTRADAS | | | SAÍDAS | |
|---|---|---|---|---|
| A | B | C | X | Y |
| 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 1 | 0 | 0 |
| 0 | 1 | 0 | 1 | 0 |
| 0 | 1 | 1 | 0 | 1 |
| 1 | 0 | 0 | 1 | 1 |
| 1 | 0 | 1 | 1 | 0 |
| 1 | 1 | 0 | 0 | 0 |
| 1 | 1 | 1 | 1 | 1 |

CIRC_014

# MONTE O CIRCUITO QUE ATENDA A SEGUINTE TABELA VERDADE:

| ENTRADAS | | | SAÍDAS | |
|---|---|---|---|---|
| A | B | C | X | Y |
| 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 1 | 0 | 0 |
| 0 | 1 | 0 | 1 | 0 |
| 0 | 1 | 1 | 0 | 1 |
| 1 | 0 | 0 | 1 | 1 |
| 1 | 0 | 1 | 1 | 0 |
| 1 | 1 | 0 | 0 | 0 |
| 1 | 1 | 1 | 1 | 1 |

CIRC_014

# NOVO EXERCÍCIO

# Monte o circuito que atende a seguinte Tabela Verdade:

| ENTRADAS | | | SAÍDAS | |
|---|---|---|---|---|
| A | B | C | X | Y |
| 0 | 0 | 0 | 1 | 0 |
| 0 | 0 | 1 | 0 | 1 |
| 0 | 1 | 0 | 1 | 0 |
| 0 | 1 | 1 | 1 | 0 |
| 1 | 0 | 0 | 0 | 1 |
| 1 | 0 | 1 | 0 | 1 |
| 1 | 1 | 0 | 1 | 0 |
| 1 | 1 | 1 | 0 | 0 |

CIRC_015

# SAÍDA HEXADECIMAL

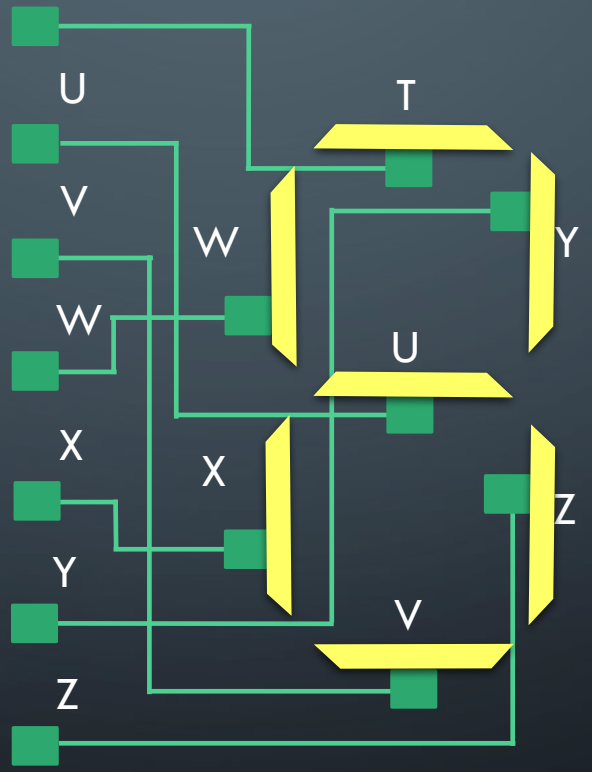
# COMPONHA UM CIRCUITO PARA RETORNAR O NÚMERO HEXADECIMAL PARA A ENTRADA DE 0 A 15. REPRESENTE AS LETRAS “B” E “D” EM MINÚSCULAS

A ■

B ■

C ■

D ■




| | ENTRADAS | | | | SAÍDAS | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | B | C | D | T | U | V | W | X | Y | Z |
| 0 | 0 | 0 | 0 | 0 | | | | | | | |
| 1 | 0 | 0 | 0 | 1 | | | | | | | |
| 2 | 0 | 0 | 1 | 0 | | | | | | | |
| 3 | 0 | 0 | 1 | 1 | | | | | | | |
| 4 | 0 | 1 | 0 | 0 | | | | | | | |
| 5 | 0 | 1 | 0 | 1 | | | | | | | |
| 6 | 0 | 1 | 1 | 0 | | | | | | | |
| 7 | 0 | 1 | 1 | 1 | | | | | | | |
| 8 | 1 | 0 | 0 | 0 | | | | | | | |
| 9 | 1 | 0 | 0 | 1 | | | | | | | |
| 10 | 1 | 0 | 1 | 0 | | | | | | | |
| 11 | 1 | 0 | 1 | 1 | | | | | | | |
| 12 | 1 | 1 | 0 | 0 | | | | | | | |
| 13 | 1 | 1 | 0 | 1 | | | | | | | |
| 14 | 1 | 1 | 1 | 0 | | | | | | | |
| 15 | 1 | 1 | 1 | 1 | | | | | | | |

CIRC_016

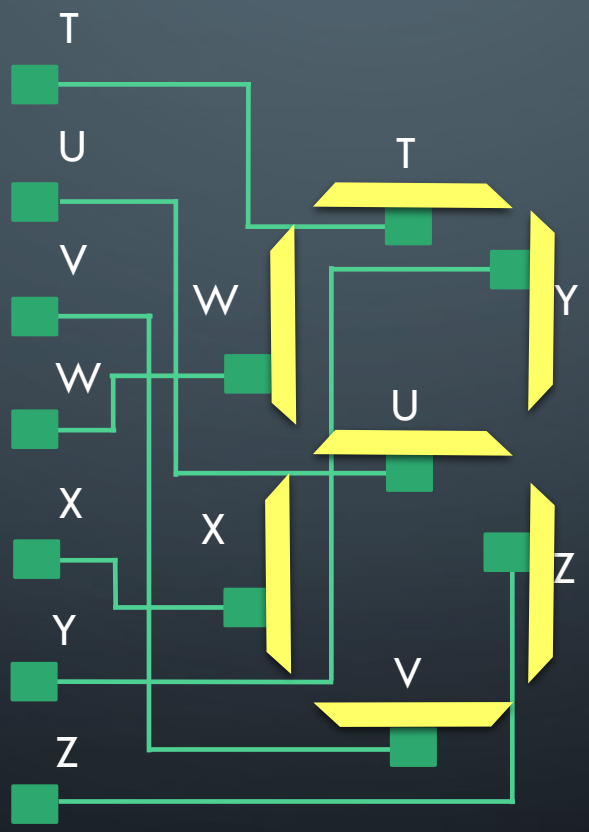
# COMPONHA UM CIRCUITO PARA RETORNAR O NÚMERO HEXADECIMAL PARA A ENTRADA DE 0 A 15. REPRESENTE AS LETRAS “B” E “D” EM MINÚSCULAS

A ■

B ■

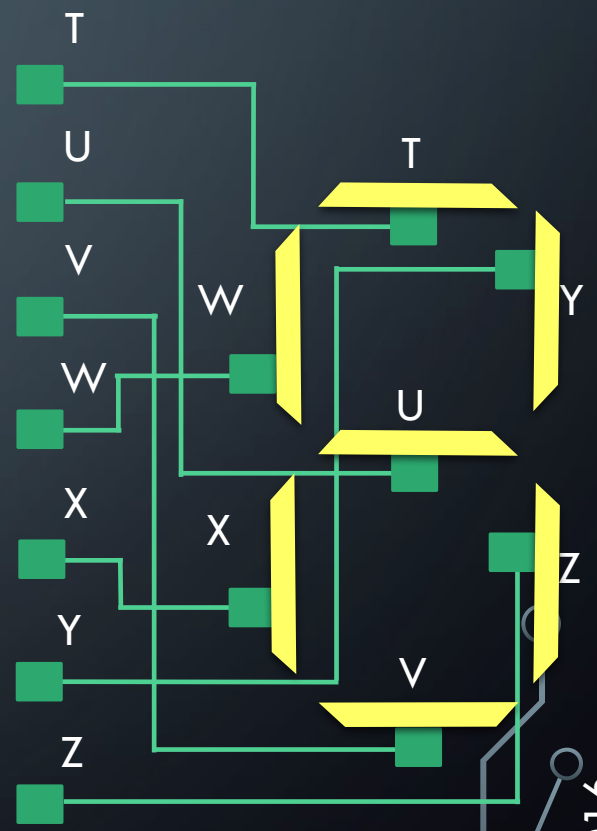
C ■

D ■




| | ENTRADAS | | | | SAÍDAS | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | B | C | D | T | U | V | W | X | Y | Z |
| 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 2 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 |
| 3 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 |
| 4 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 |
| 5 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 |
| 6 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 |
| 7 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 |
| 8 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 9 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 |
| 10 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 |
| 11 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 1 |
| 12 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 |
| 13 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 |
| 14 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 |
| 15 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 |

| | ENTRADAS | | | | SAÍDAS | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | B | C | D | T | U | V | W | X | Y | Z |
| 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 2 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 |
| 3 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 |
| 4 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 |
| 5 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 |
| 6 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 |
| 7 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 |
| 8 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 9 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 |
| A | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 |
| b | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 1 |
| C | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 |
| d | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 |
| E | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 |
| F | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 |




CIRC_016

# SAÍDA DECIMAL

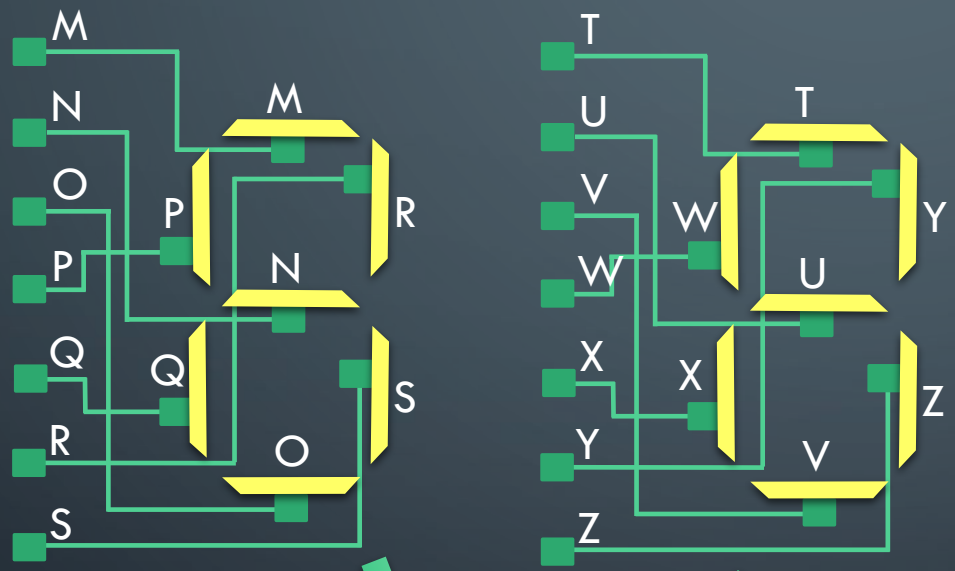
# COMPONHA UM CIRCUITO PARA RETORNAR O NÚMERO DECIMAL PARA A ENTRADA DE 0 A 15. *NÃO USE ZEROS NÃO SIGNIFICATIVOS.

A ■

B ■

C ■

D ■



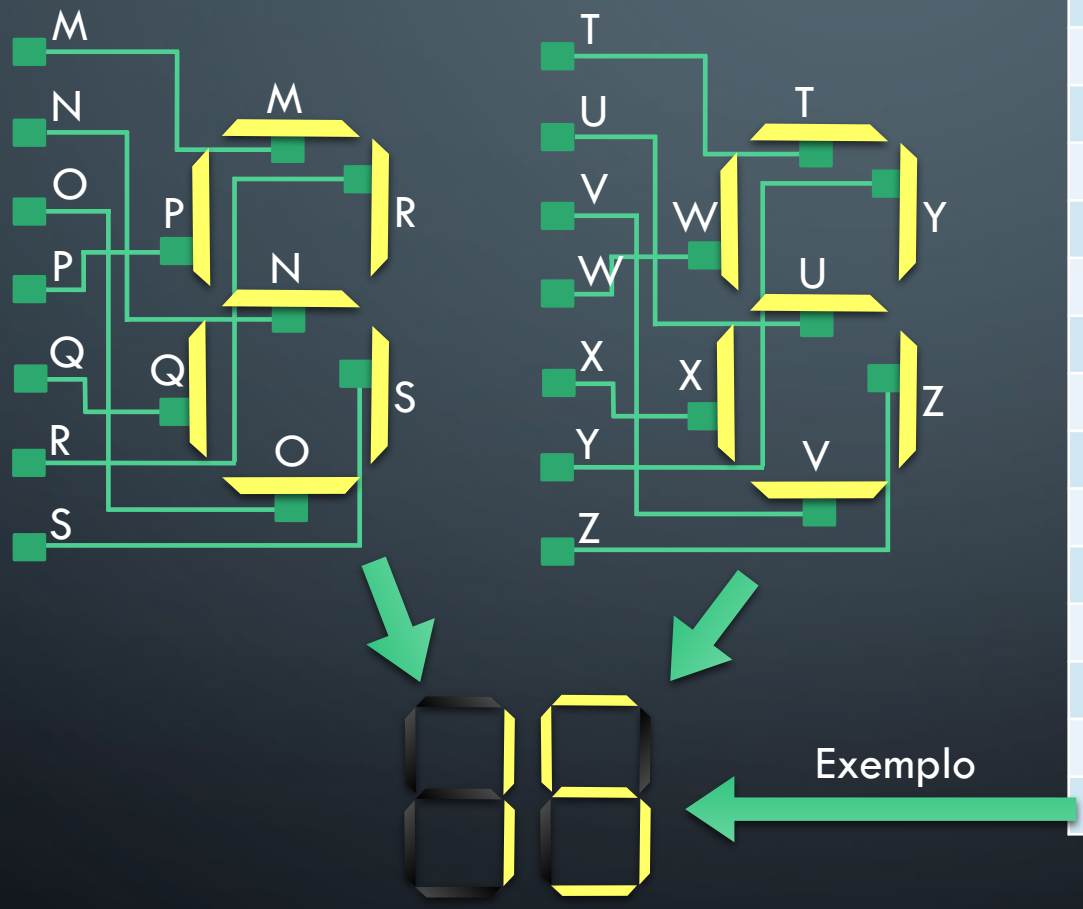
Exemplo

| | ENTRADAS | | | | SAÍDAS | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | B | C | D | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z |
| 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | |
| 1 | 0 | 0 | 0 | 1 | | | | | | | | | | | | | | |
| 2 | 0 | 0 | 1 | 0 | | | | | | | | | | | | | | |
| 3 | 0 | 0 | 1 | 1 | | | | | | | | | | | | | | |
| 4 | 0 | 1 | 0 | 0 | | | | | | | | | | | | | | |
| 5 | 0 | 1 | 0 | 1 | | | | | | | | | | | | | | |
| 6 | 0 | 1 | 1 | 0 | | | | | | | | | | | | | | |
| 7 | 0 | 1 | 1 | 1 | | | | | | | | | | | | | | |
| 8 | 1 | 0 | 0 | 0 | | | | | | | | | | | | | | |
| 9 | 1 | 0 | 0 | 1 | | | | | | | | | | | | | | |
| 10 | 1 | 0 | 1 | 0 | | | | | | | | | | | | | | |
| 11 | 1 | 0 | 1 | 1 | | | | | | | | | | | | | | |
| 12 | 1 | 1 | 0 | 0 | | | | | | | | | | | | | | |
| 13 | 1 | 1 | 0 | 1 | | | | | | | | | | | | | | |
| 14 | 1 | 1 | 1 | 0 | | | | | | | | | | | | | | |
| 15 | 1 | 1 | 1 | 1 | | | | | | | | | | | | | | |

CIRC_017

# COMPONHA UM CIRCUITO PARA RETORNAR O NÚMERO DECIMAL PARA A ENTRADA DE 0 A 15. *NÃO USE ZEROS NÃO SIGNIFICATIVOS.

A ■
B ■
C ■
D ■

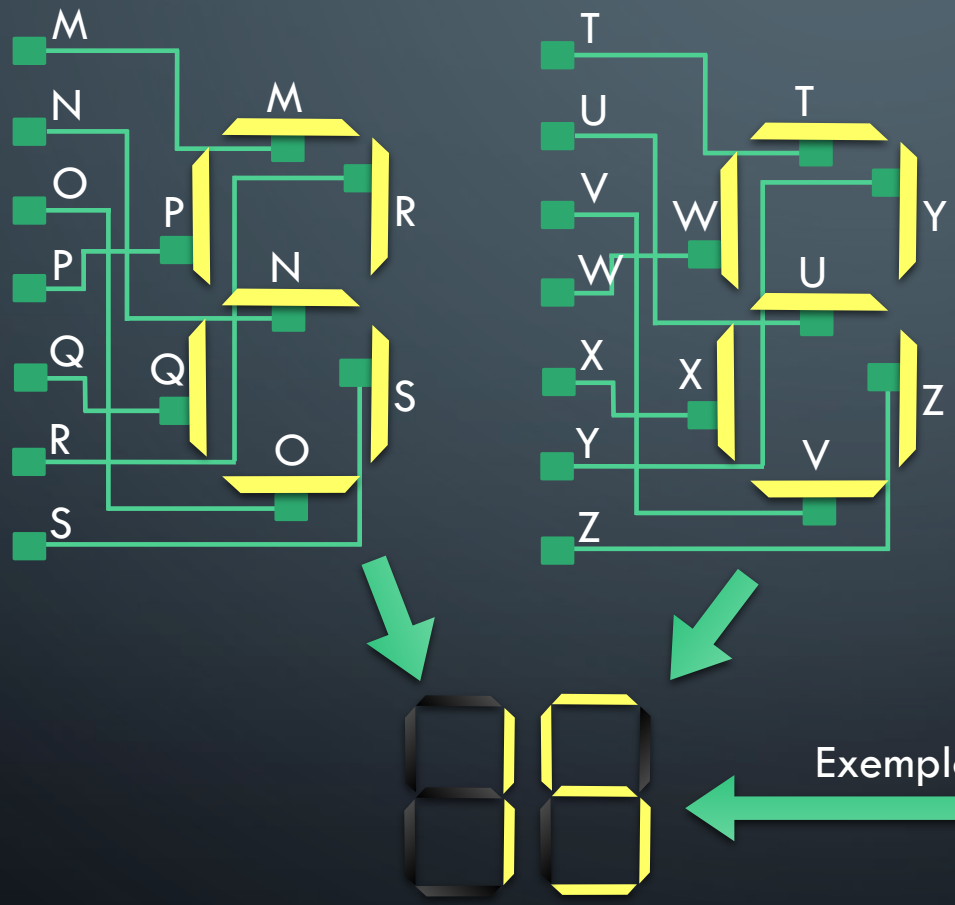



| | ENTRADAS | | | | SAÍDAS | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | B | C | D | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 |
| 3 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 |
| 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 |
| 5 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 |
| 6 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 |
| 7 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 |
| 8 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 9 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 1 |
| 10 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 |
| 11 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 12 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 |
| 13 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 |
| 14 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 |
| 15 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 |

CIRC_017

# COMPONHA UM CIRCUITO PARA RETORNAR O NÚMERO DECIMAL PARA A ENTRADA DE 0 A 15. *NÃO USE ZEROS NÃO SIGNIFICATIVOS.

A ■
B ■
C ■
D ■




| | ENTRADAS | | | | SAÍDAS | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | B | C | D | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 |
| 3 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 |
| 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 |
| 5 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 |
| 6 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 |
| 7 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 |
| 8 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 9 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 1 |
| 10 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 |
| 11 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 12 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 |
| 13 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 |
| 14 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 |
| 15 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 |

CIRC_017

ESCOLA
POLITÉCNICA