INSTITUTO FEDERAL
Fluminense

Eletrônica digital

Aula 4 - Porta Lógica

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Instituto do Noroeste Fluminense de Educação Superior

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Recapitulando

- Principais nomes da área
- Noções básicas de álgebra
- Operações básicas
  - Conjunção
  - Disjunção
  - Negação
- Tabela verdade
- Operações derivadas
  - Condicional
  - Disjunção exclusiva
  - Equivalência

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Sumário

- Introdução
- Porta lógica
- Circuito lógico

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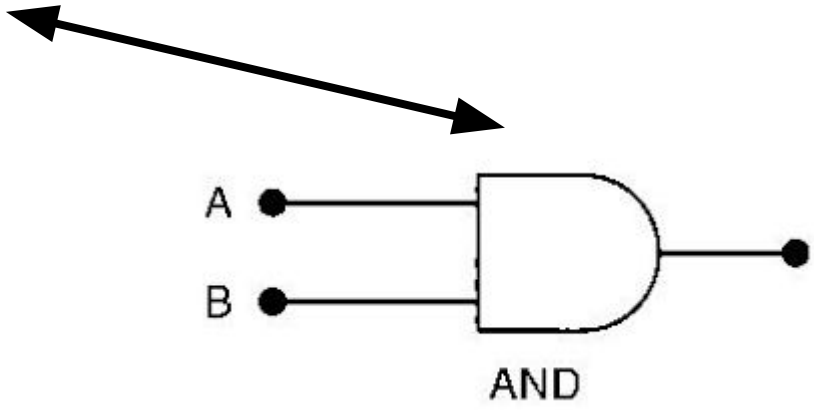
Sumário

- Introdução
- Porta lógica
- Circuito lógico

Introdução

Podemos representar uma tabela verdade numa porta lógica e vice-versa.

X	Y	X ∧ Y
0	0	0
0	1	0
1	0	0
1	1	1



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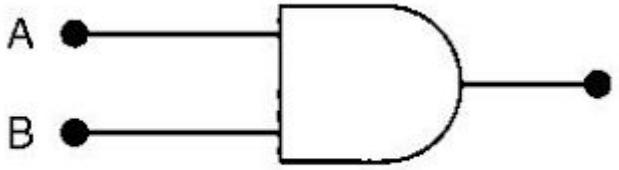
Sumário

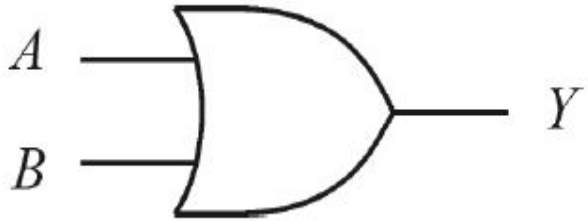
- Introdução
- Porta lógica
- Circuito lógico

Porta Lógica

Conjunção equivalente a porta E/AND

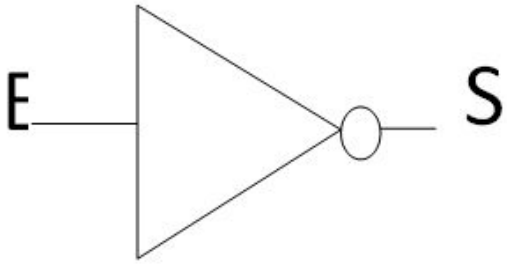


Disjunção equivalente a porta OU/OR

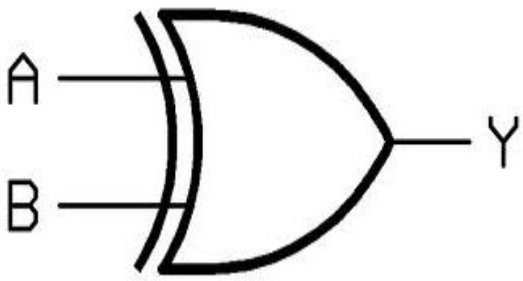


Porta Lógica

Negação equivalente a porta NÃO/NOT



Disjunção exclusiva equivalente a porta XOR



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Sumário

- Introdução
- Porta lógica
- Circuito lógico

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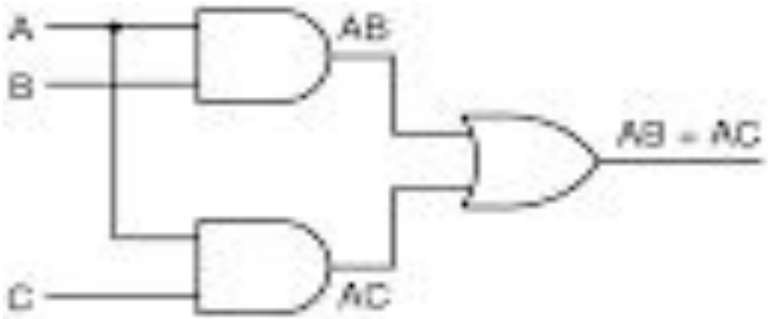

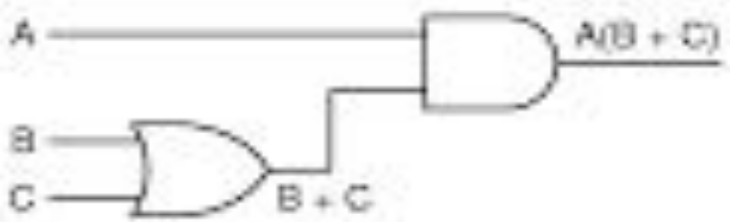

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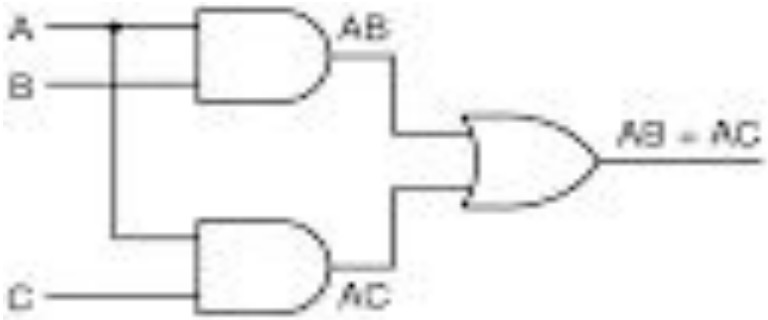
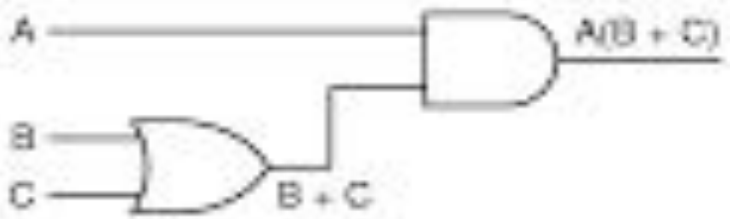
Exemplo



A	B	C	AB	AC	AB + AC
0	0	0	0	0	0
0	0	1	0	0	0
0	1	0	0	0	0
0	1	1	0	0	0
1	0	0	0	0	0
1	0	1	0	1	1
1	1	0	1	0	1
1	1	1	1	1	1

(a)



A	B	C	A	B + C	A(B + C)
0	0	0	0	0	0
0	0	1	0	1	0
0	1	0	0	1	0
0	1	1	0	1	0
1	0	0	1	0	0
1	0	1	1	1	1
1	1	0	1	1	1
1	1	1	1	1	1

(b)

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Ferramenta auxiliar

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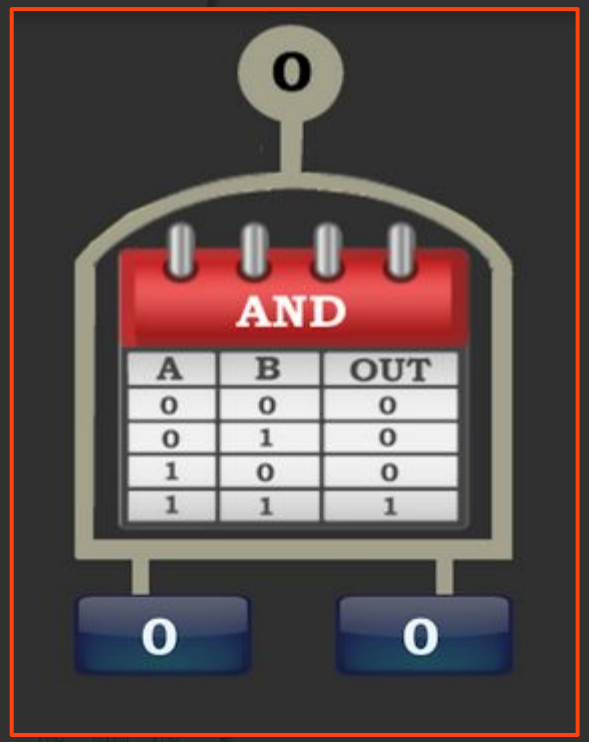
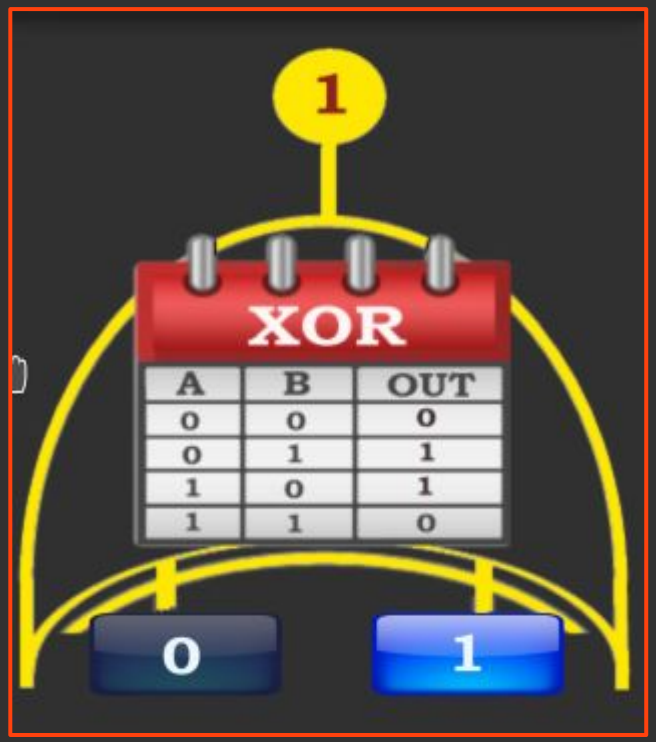
Logic gates simulator





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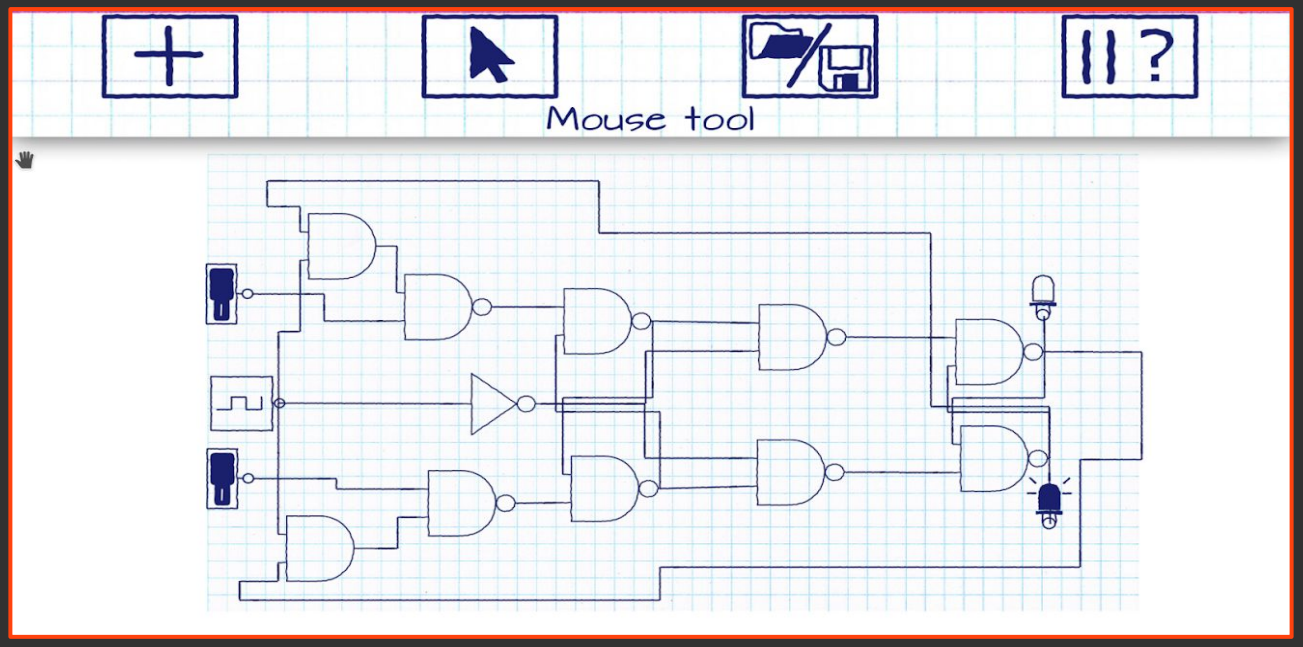
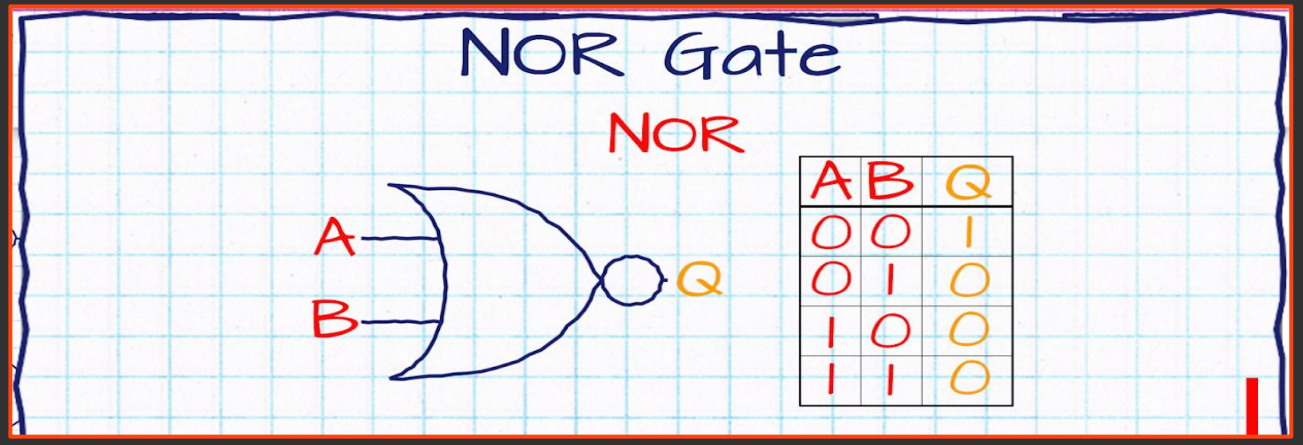
Logic Gates - Electronic Simulator and learning.





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Obrigado pela atenção!

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