

Transferencia entre registros

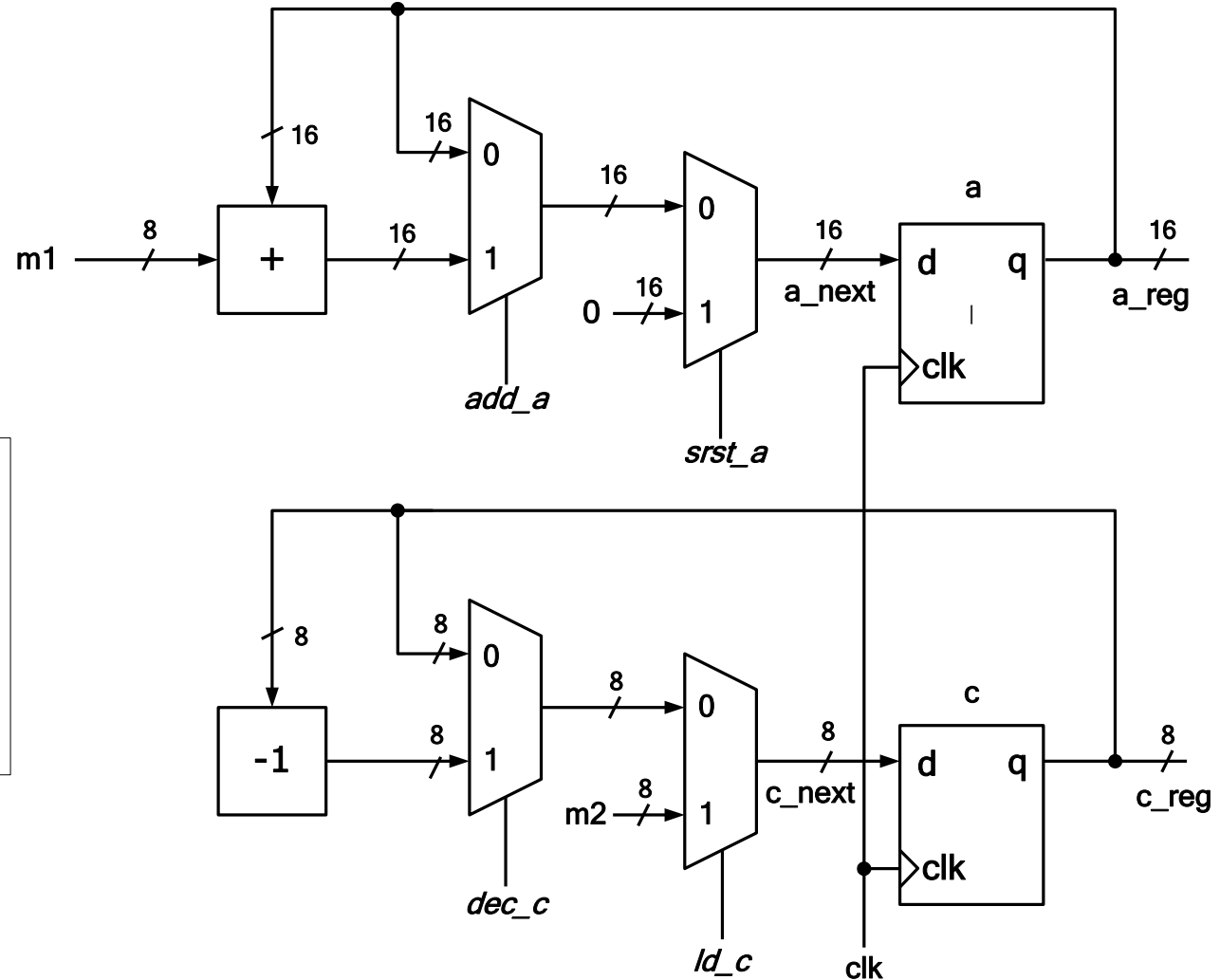
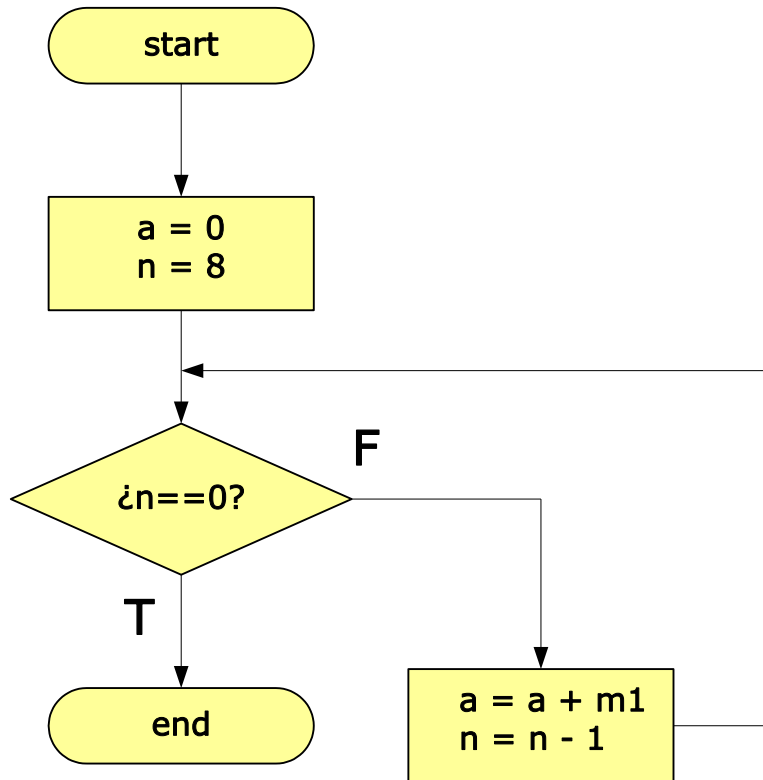


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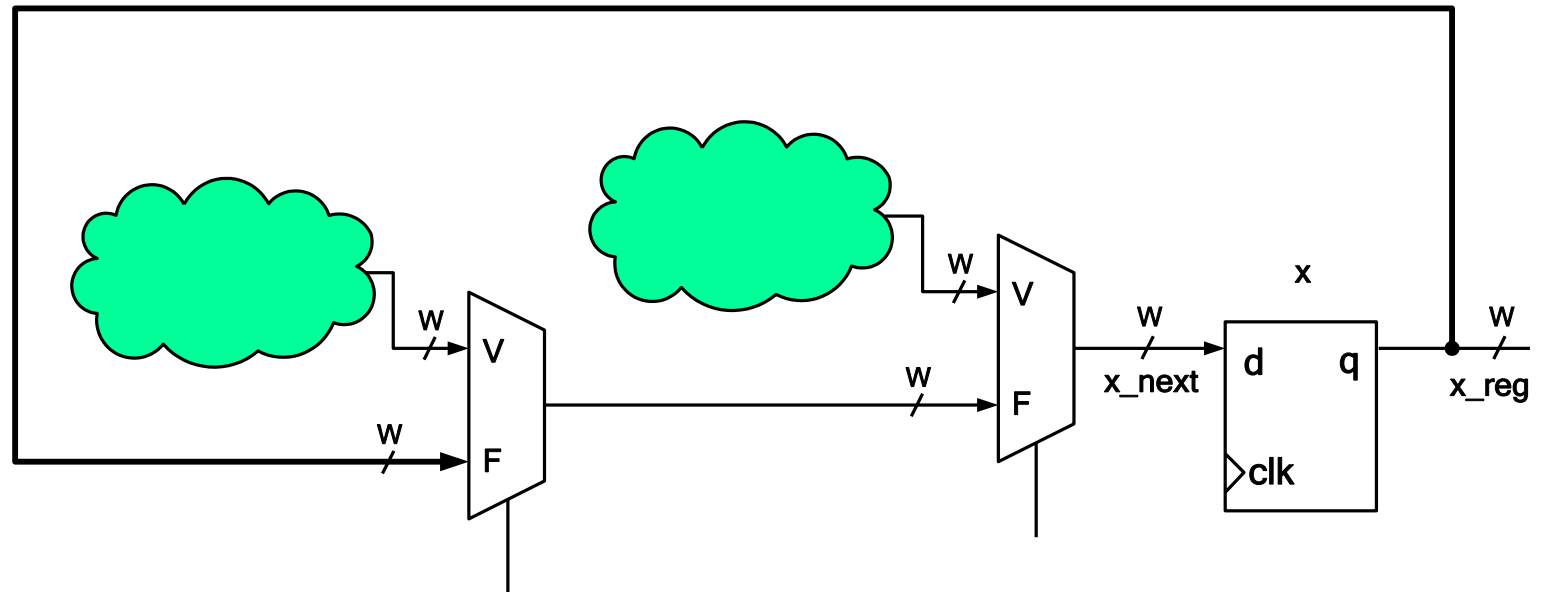
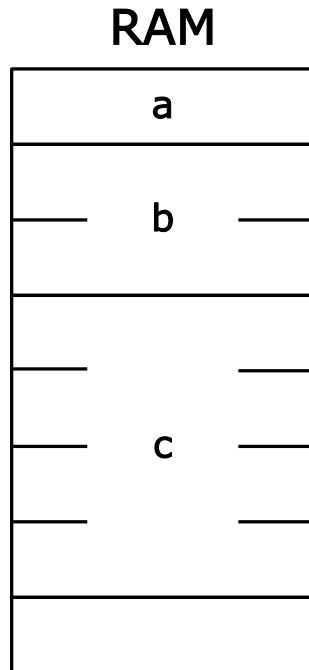
Introducción



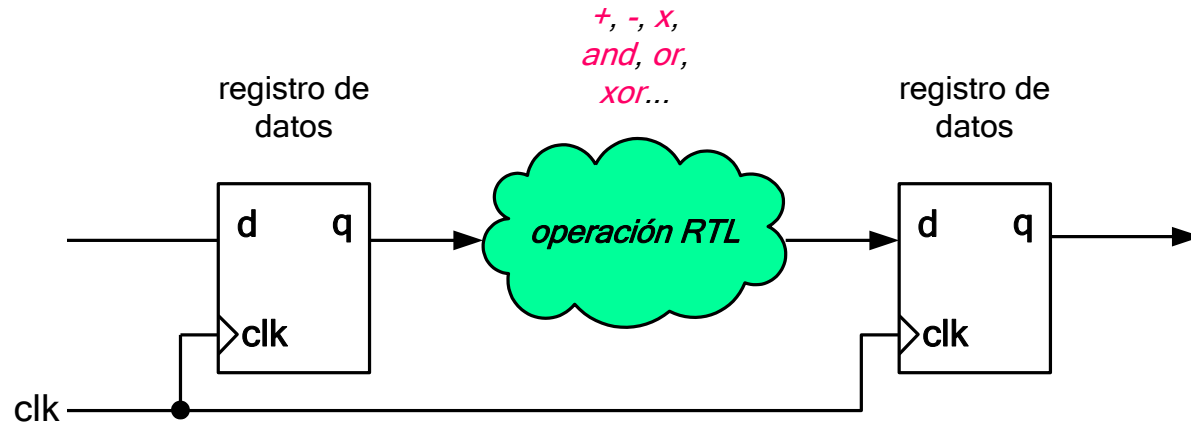
Ejemplo con un algoritmo



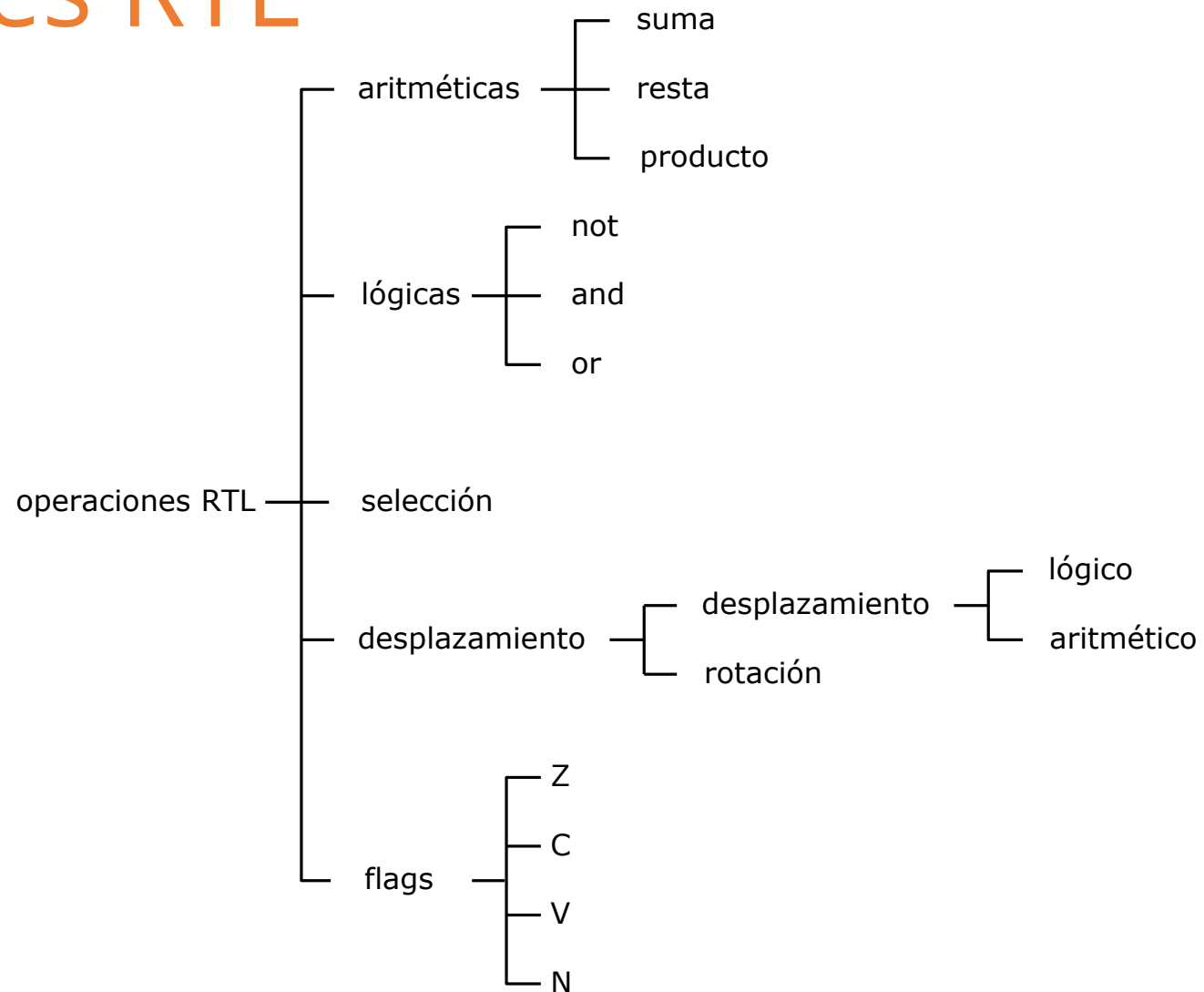
Variables y registros



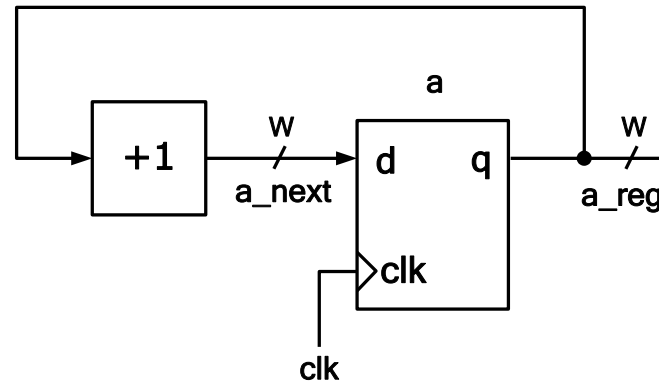
Transferencia entre registros



Operaciones RTL



Notación de transferencia RTL



$$a_next = a_reg + 1$$

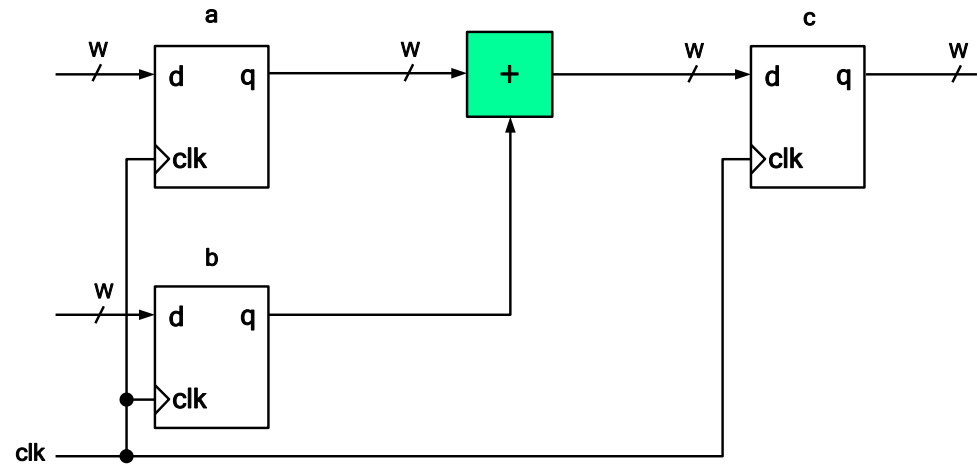
$$a \leftarrow a + 1$$

Transferencia entre registros

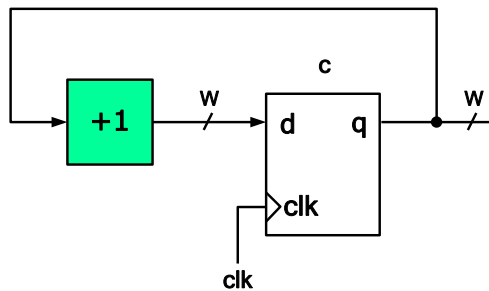
Aritméticas



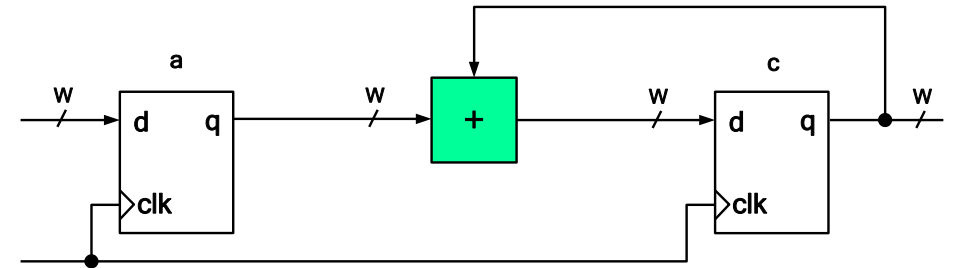
Suma



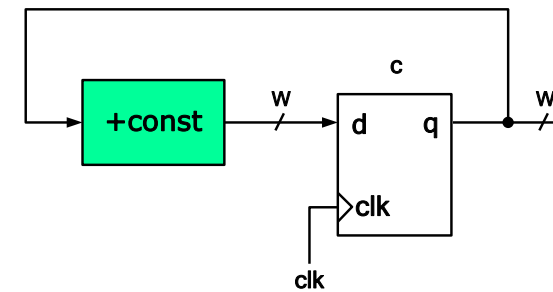
$$c \leftarrow a + b$$



$$c \leftarrow c + 1$$

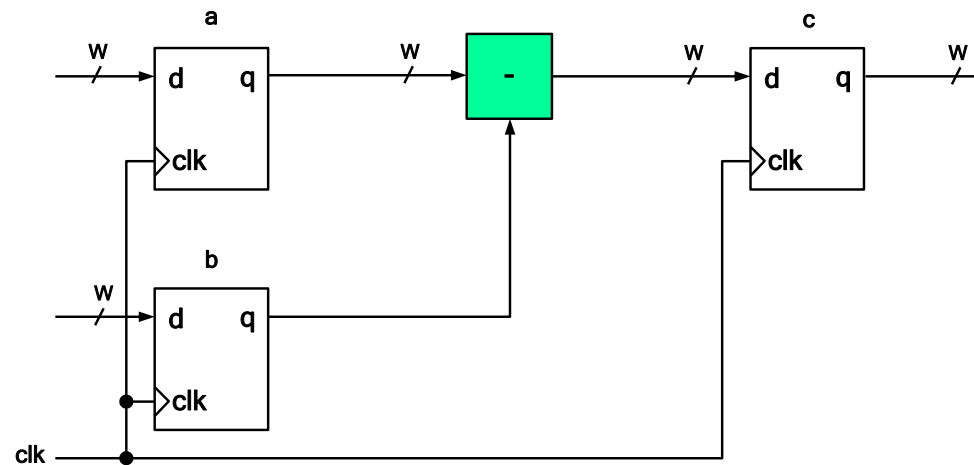


$$c \leftarrow c + a$$

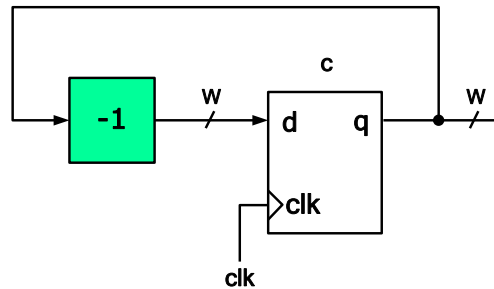


$$c \leftarrow c + \text{const}$$

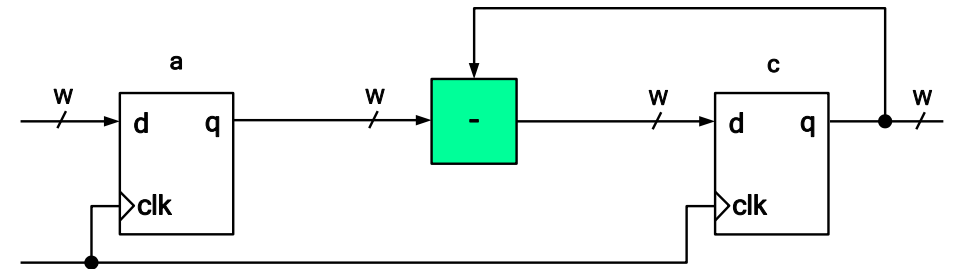
Resta



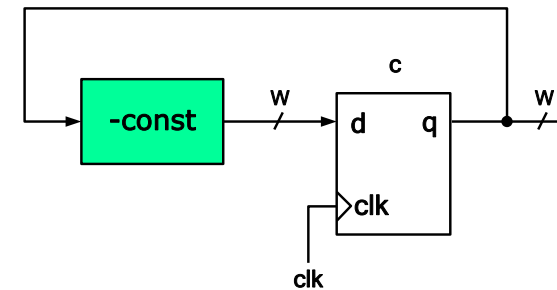
$$c \leftarrow a - b$$



$$c \leftarrow c - 1$$

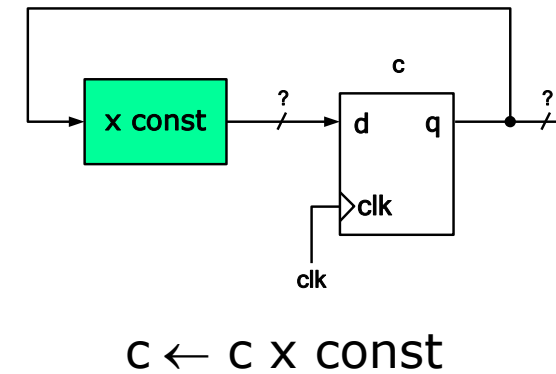
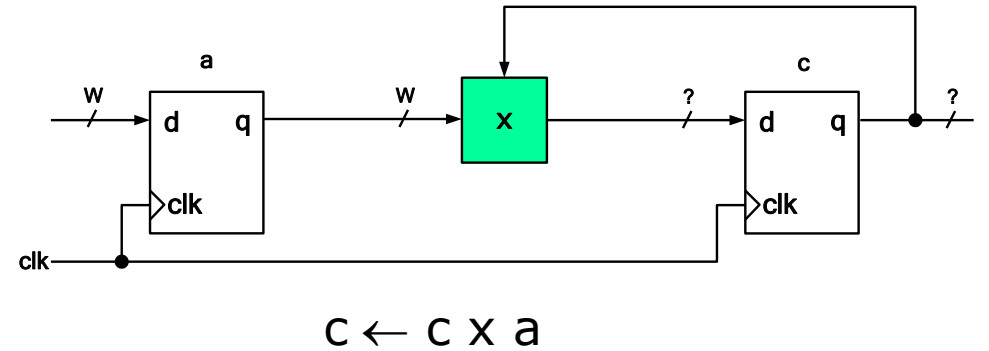
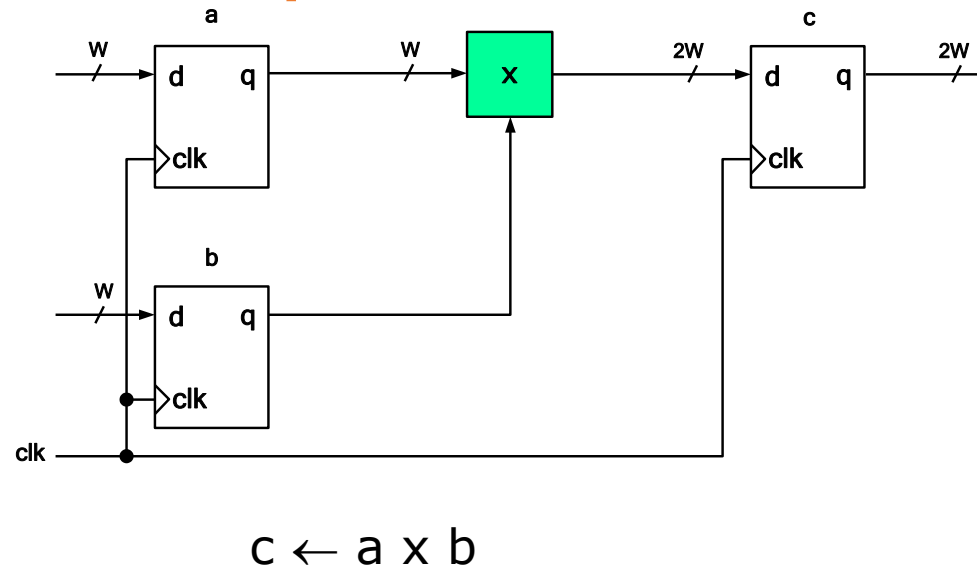


$$c \leftarrow c - a$$

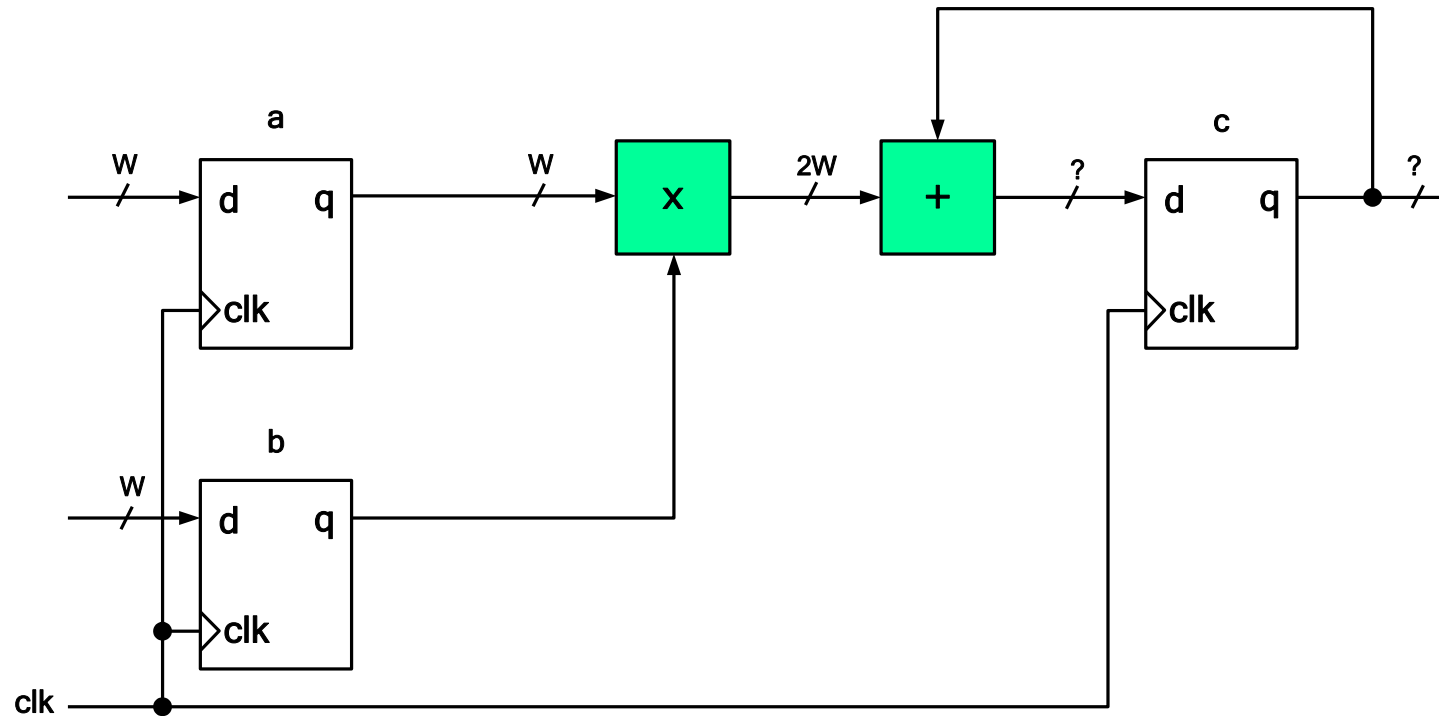


$$c \leftarrow c - \text{const}$$

Multiplicación



MAC



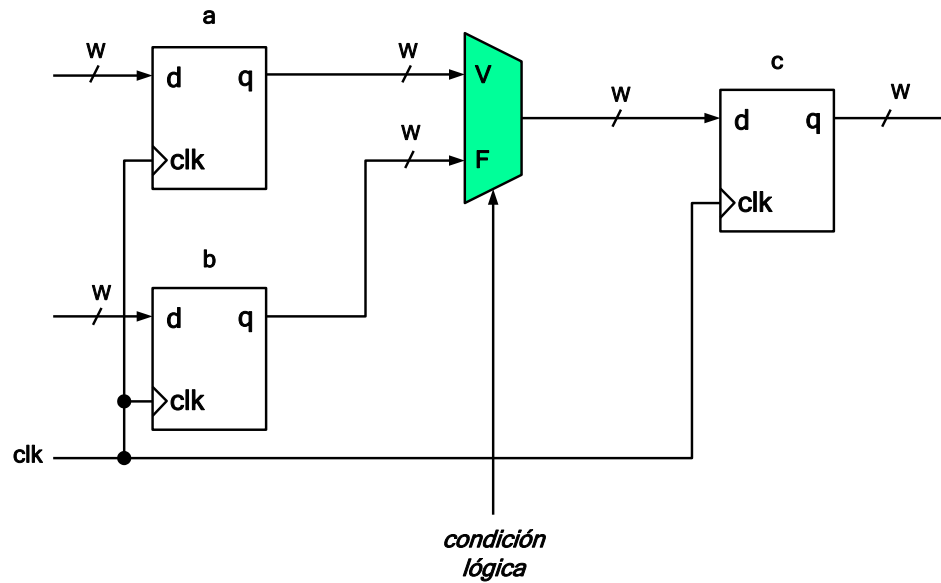
$$c \leftarrow c + a \times b$$

Transferencia entre registros

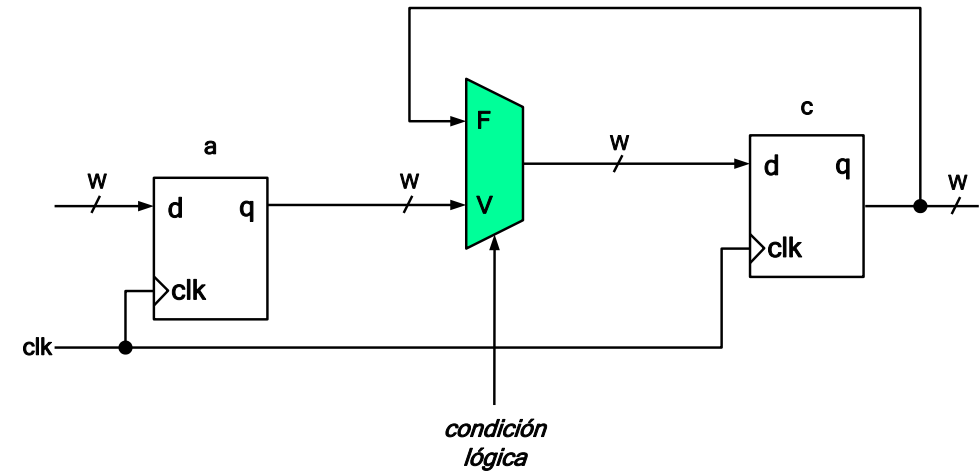
Selección



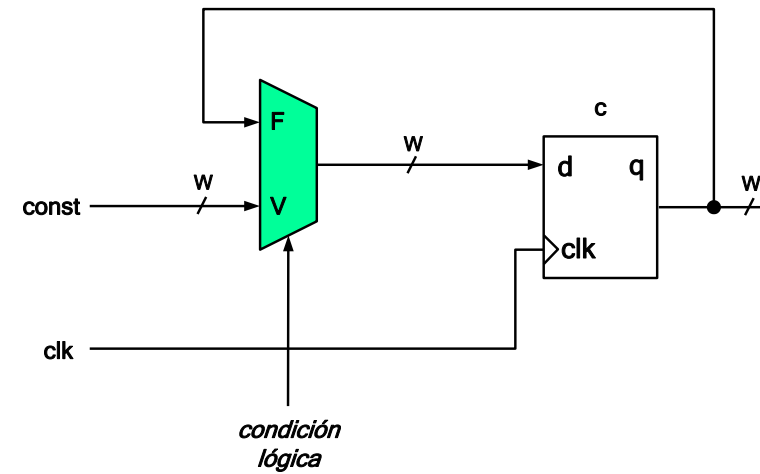
Selección



$c \leftarrow \text{cond} ? a : b$

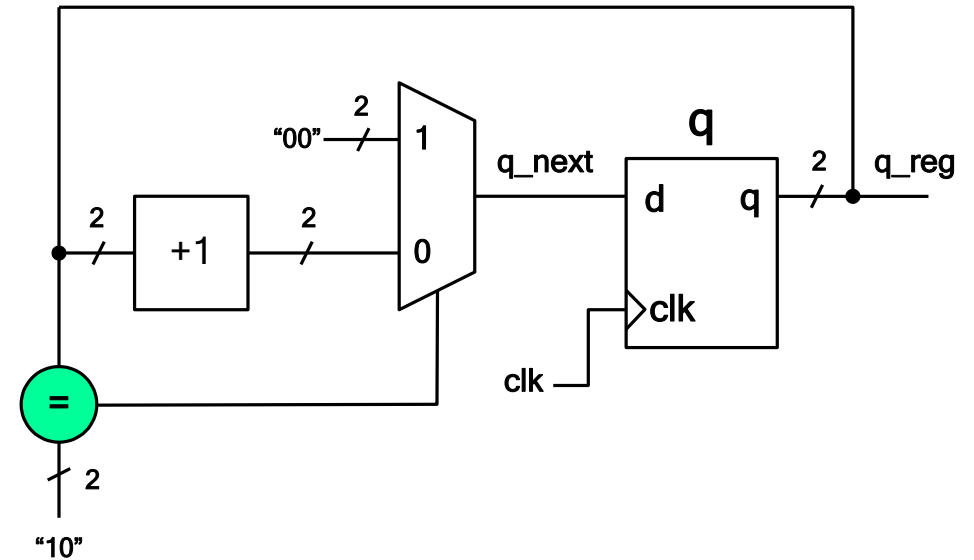
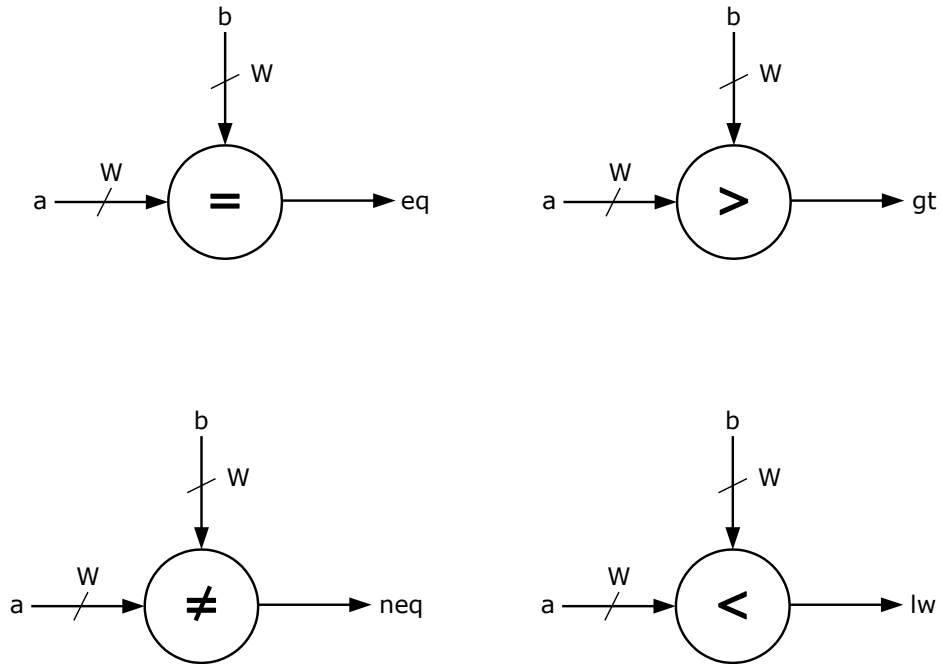


$c \leftarrow \text{cond} ? a : c$

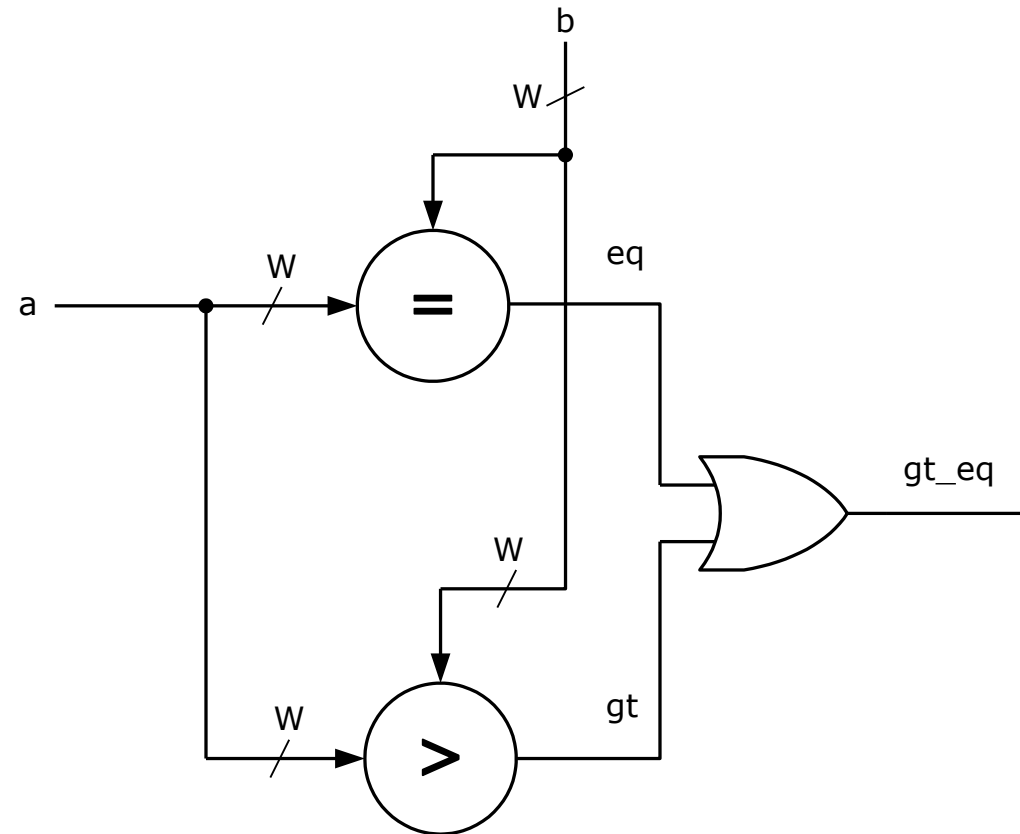
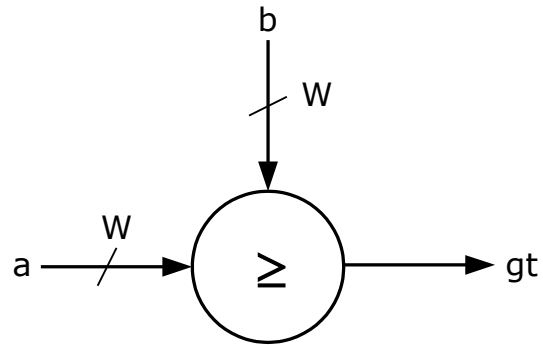


$c \leftarrow \text{cond} ? \text{const} : c$

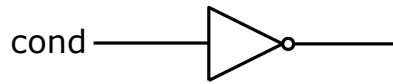
Condiciones



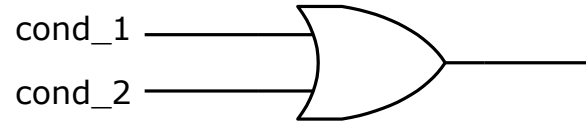
Condiciones múltiples



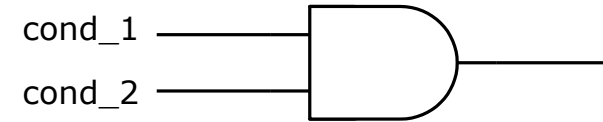
Asociación de condiciones



\sim cond



cond_1 || cond_2



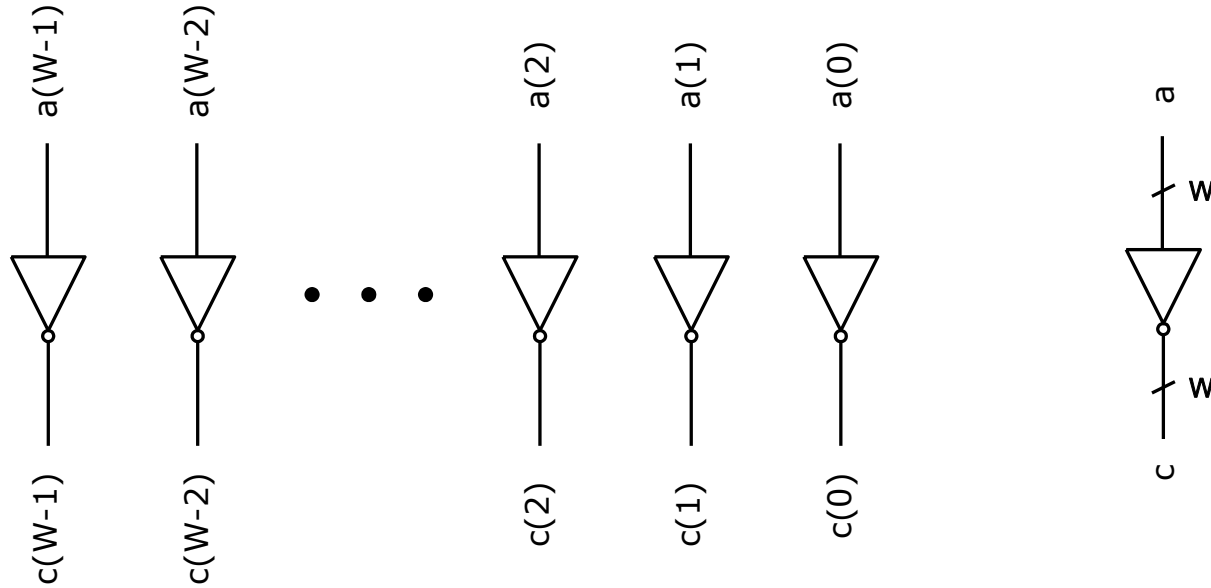
cond_1 && cond_2

Transferencia entre registros

Lógicas



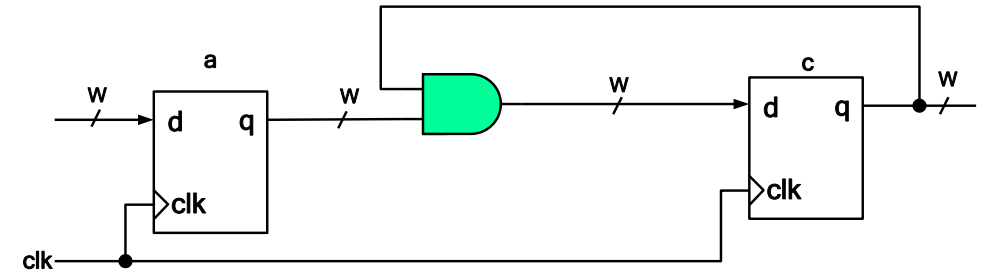
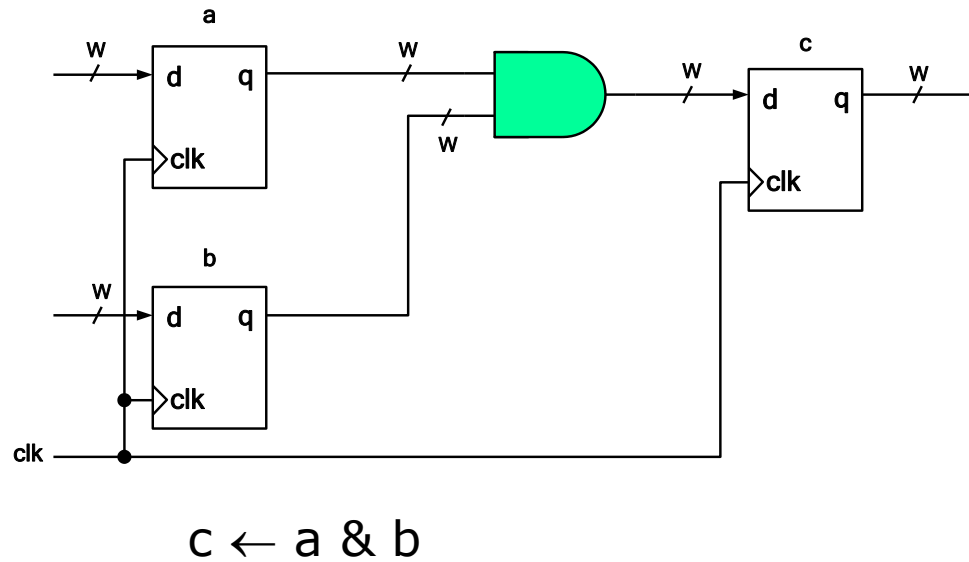
Operaciones bit a bit (bitwise)



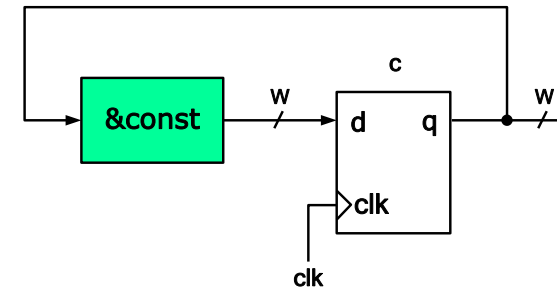
$c_next \leftarrow \sim a_reg$

$c \leftarrow \sim a$

Bitwise AND

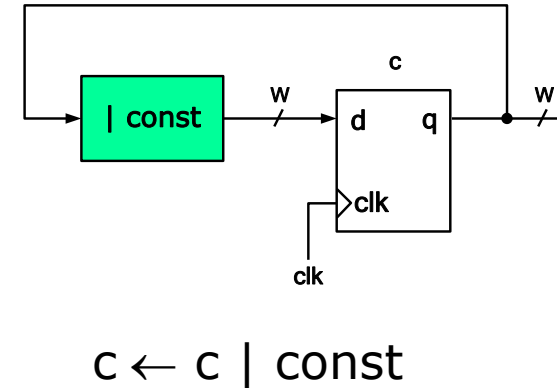
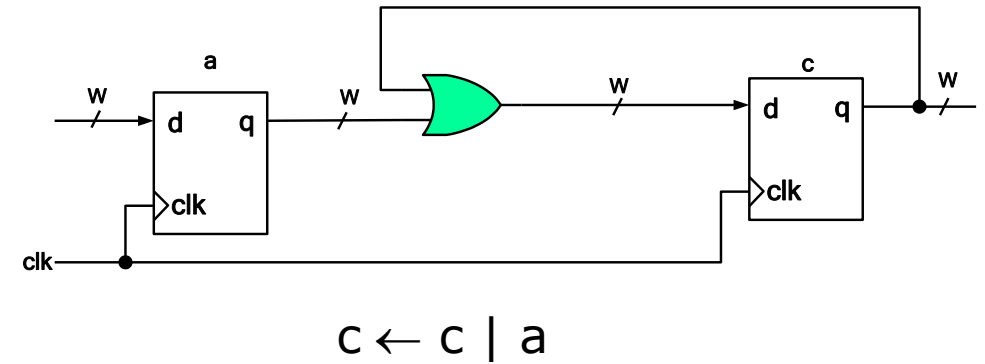
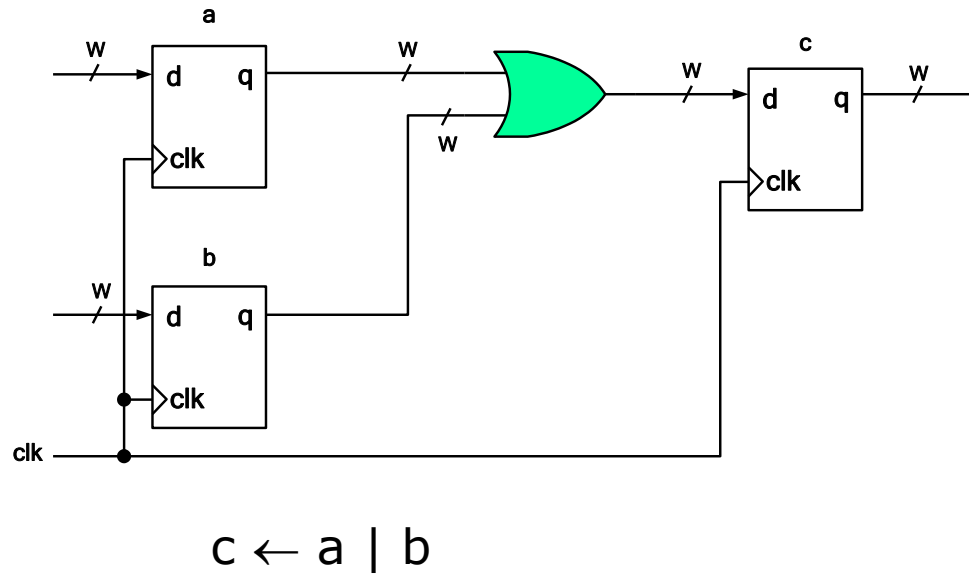


$c \leftarrow c \& a$

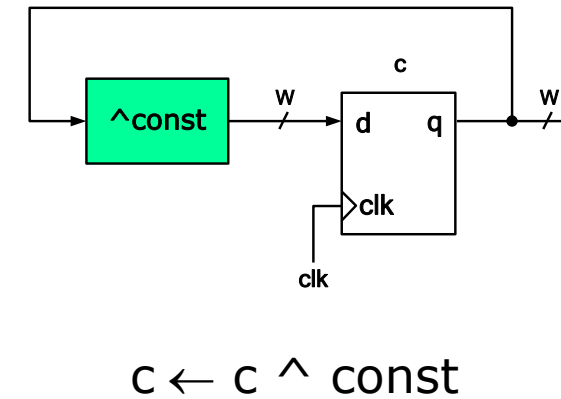
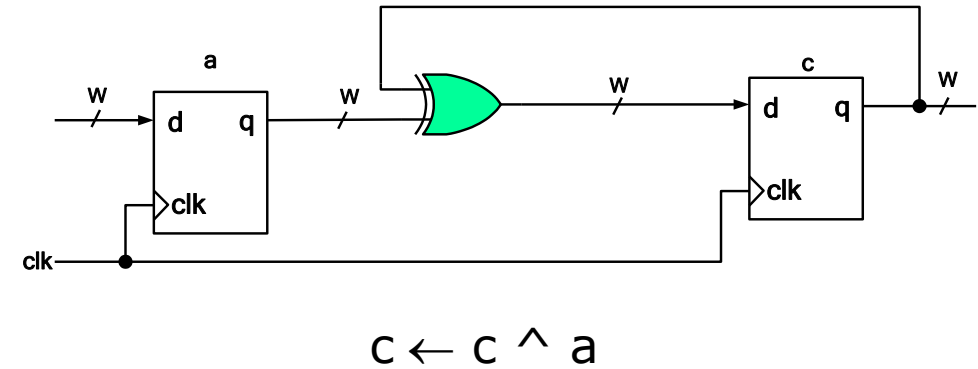
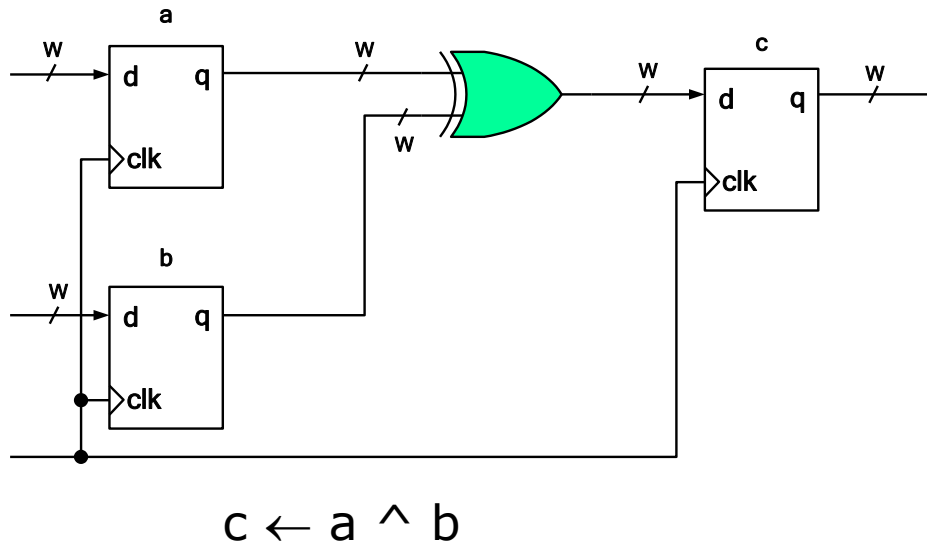


$c \leftarrow c \& \text{const}$

Bitwise OR



Bitwise XOR

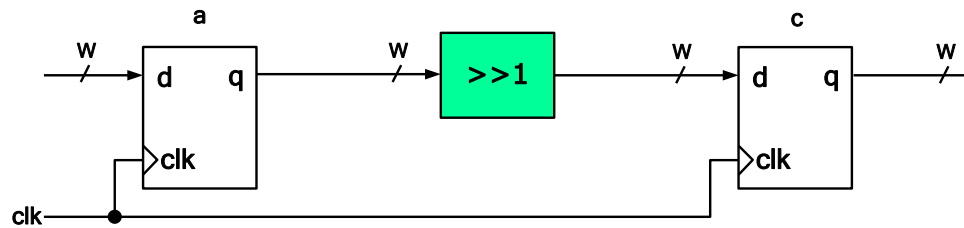


Transferencia entre registros

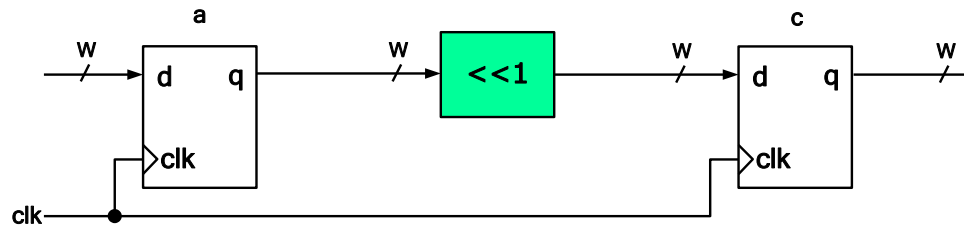
Desplazamiento



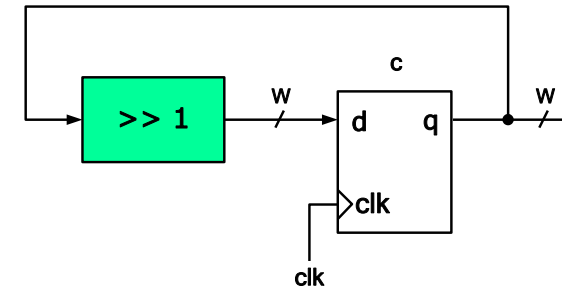
Desplazamiento lógico



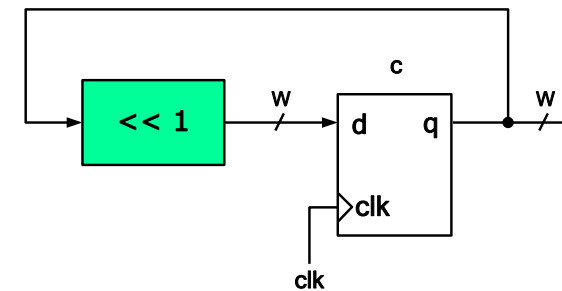
$$c \leftarrow a \gg 1$$



$$c \leftarrow a \ll 1$$

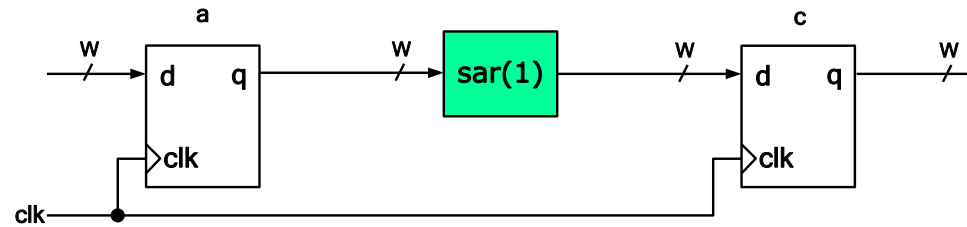


$$c \leftarrow c \gg 1$$

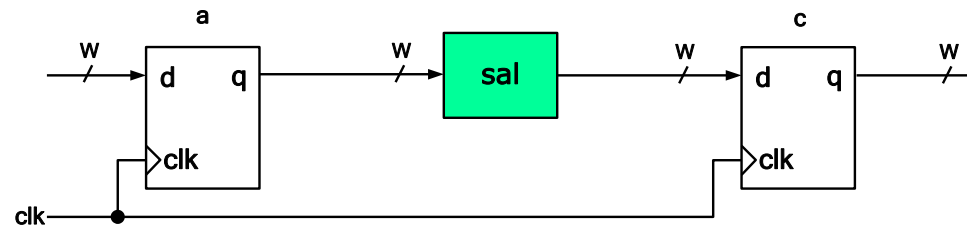


$$c \leftarrow c \ll 1$$

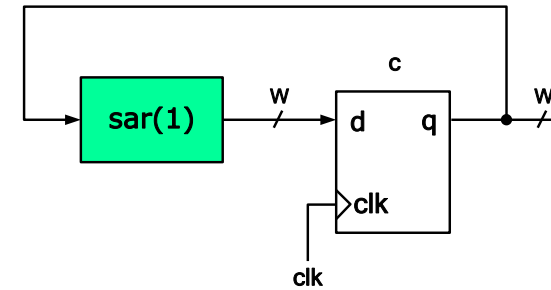
Desplazamiento aritmético



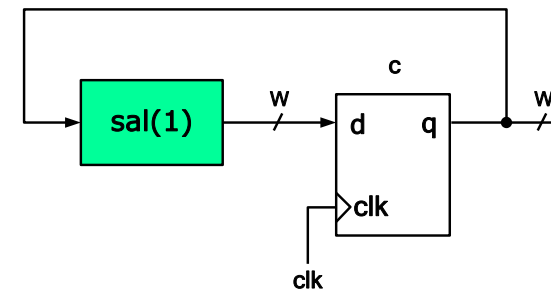
$c \leftarrow \text{sar}(a, 1)$



$c \leftarrow \text{sal}(a, 1)$

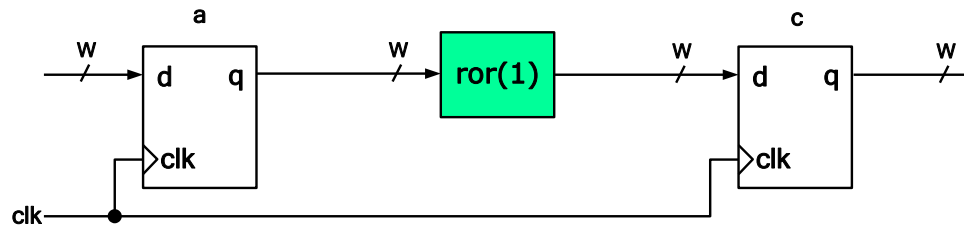


$c \leftarrow \text{sar}(c, 1)$

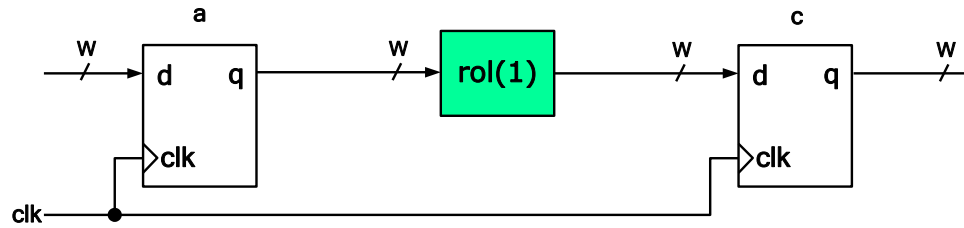


$c \leftarrow \text{sal}(c, 1)$

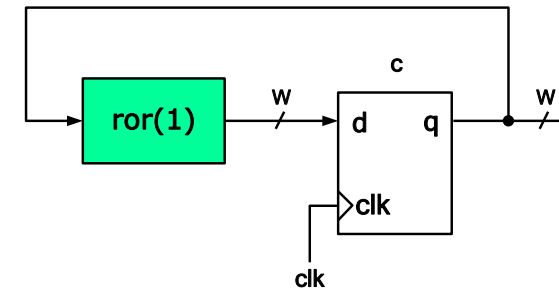
Rotación



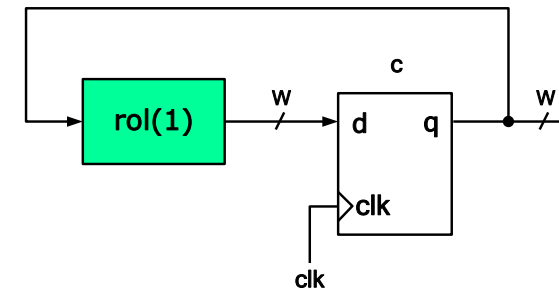
$c \leftarrow \text{ror}(a, 1)$



$c \leftarrow \text{rol}(a, 1)$



$c \leftarrow \text{ror}(c, 1)$



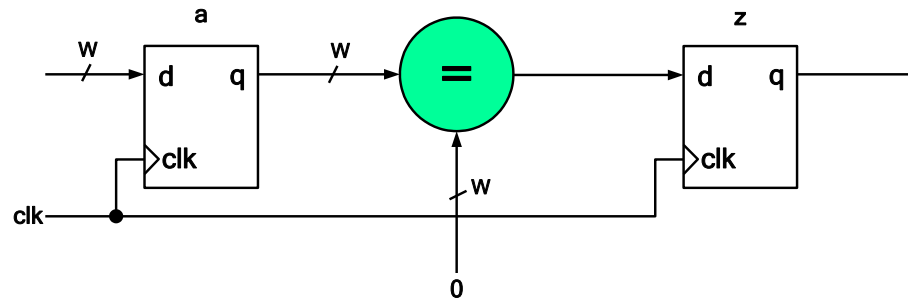
$c \leftarrow \text{rol}(c, 1)$

Transferencia entre registros

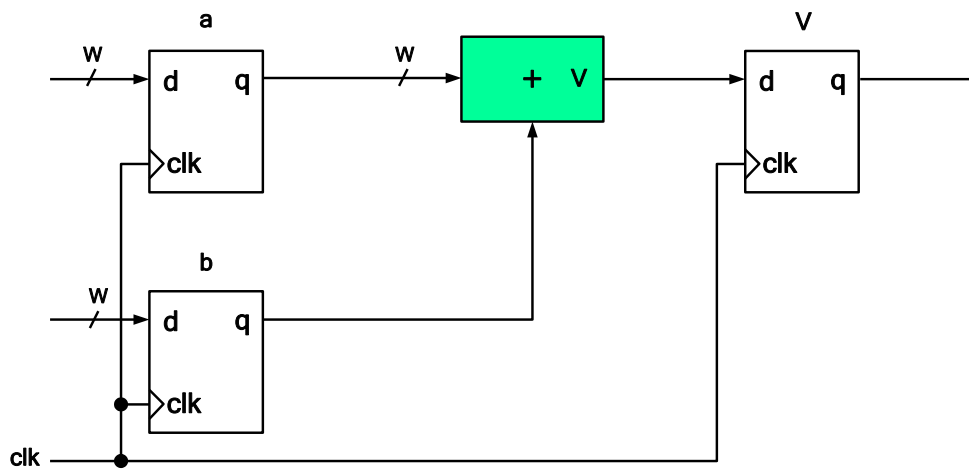
Flags



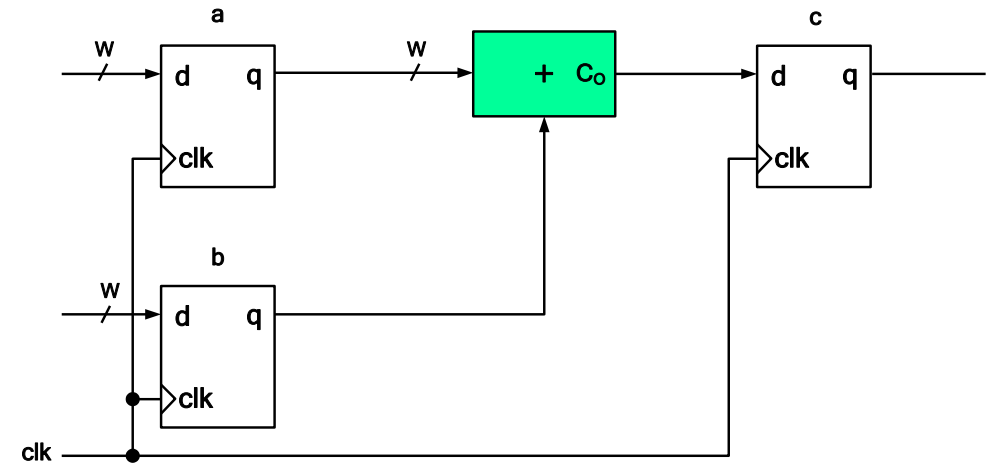
Flags



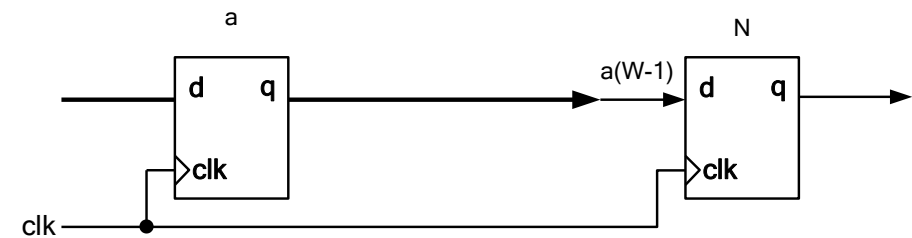
$$z \leftarrow (a == 0)$$



$$V \leftarrow OV(a + b)$$



$$c \leftarrow C_o(a + b)$$



$$N \leftarrow a(W-1)$$