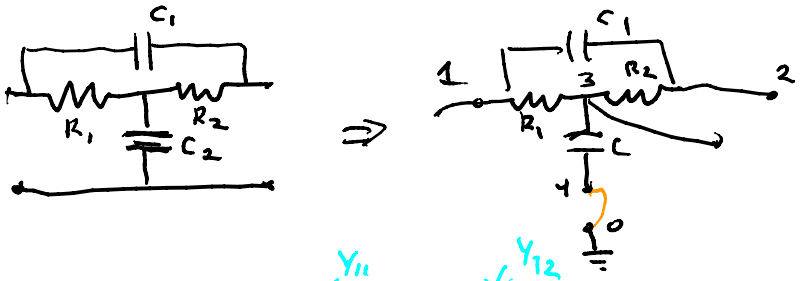
EE 303
03/09/10



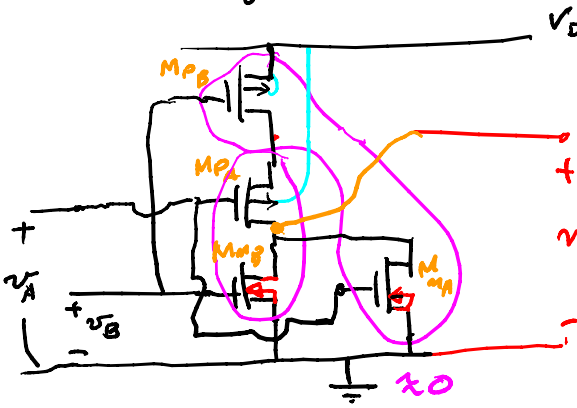
$$Y_{ind} = \begin{bmatrix} sC_1+G_1 & -sC_1 & -G_1 & 0 \\ -sC_1 & G_2+sC_1 & -G_2 & 0 \\ -G_1 & -G_2 & G_1+G_2-sC_2 & -sC_2 \\ 0 & 0 & -sC_2 & +sC_2 \end{bmatrix}$$

Y_{11}, Y_{12}, Y_{21}

$$Y_{2\text{-port}} = Y_{11} - Y_{12} Y_{22}^{-1} Y_{21}$$

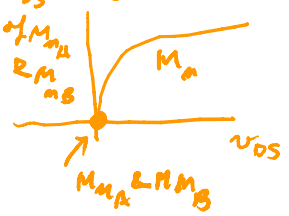
$$= \begin{bmatrix} sC_1+G_1 & -sC_1 \\ -sC_1 & G_2+sC_2 \end{bmatrix} - \begin{bmatrix} -G_1 \\ -G_2 \end{bmatrix} \frac{1}{G_1+G_2+sC_2} \begin{bmatrix} -G_1 & -G_2 \end{bmatrix}$$

p. 967 = NOR gate made with inverters

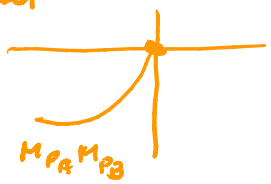


if $v_A = v_B = V_{DD} \Rightarrow v_0 = 0$
then M_{nA} & M_{nB} are fully on

$v_0 = v_{DS}$ of M_{nA} & M_{nB}



if $v_A = v_B = 0$ then
M_{nA} & M_{nB} have no current
but M_{pA} & M_{pB} are on
$\Rightarrow v_0 = V_{DD}$

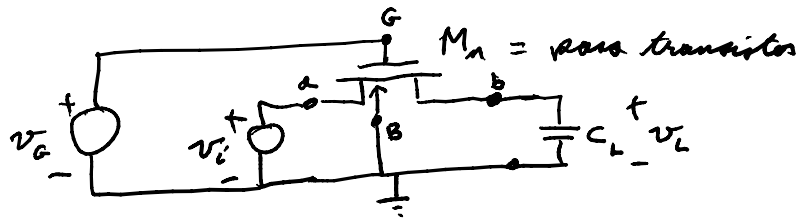


if $v_A = 1$, $v_B = 0$ then
M_{nB} is off
M_{pB} is on
then $v_0 = 0$

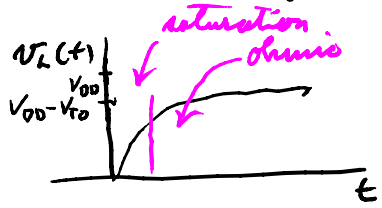
M_{nA} = on

but with no current
or M_{pA} is off

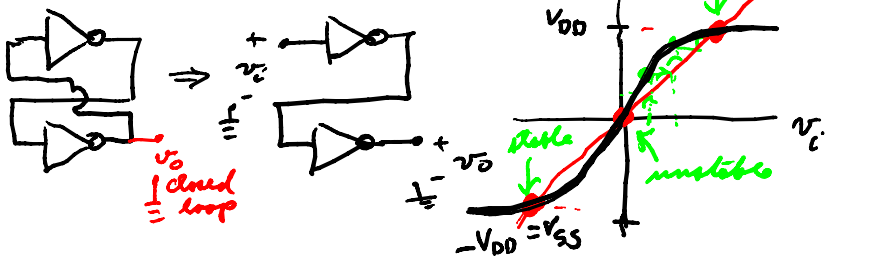
P. 982 = pass transistor



If $v_L = 0$ at $t = 0$
& $v_i = V_{DD}$ at $t = 0$
then M_n will switch on if $v_G = V_{DD}$
as $v_{Gb} > V_{TO}$
& then v_i attaches to v_L

Here 

P. 1014 = latch



When close the loop $v_o = v_i$

To turn into a flip-flop, make the inverters with nor gates