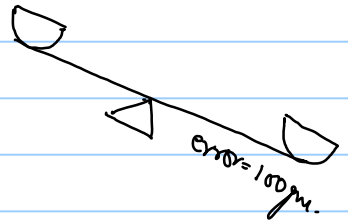
Dynamic offset cancellation

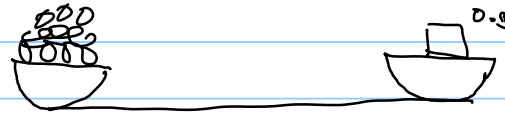


1kg is broken into two half kgs and weights & fruits are swapped for each bot.

(1)

= 400gm due to error.

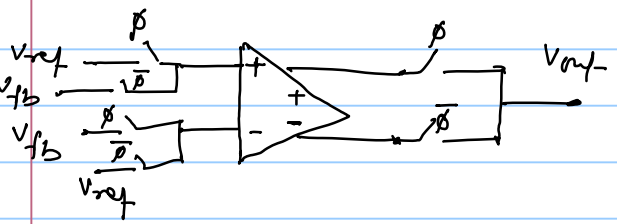
(2)

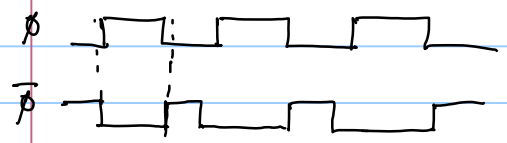


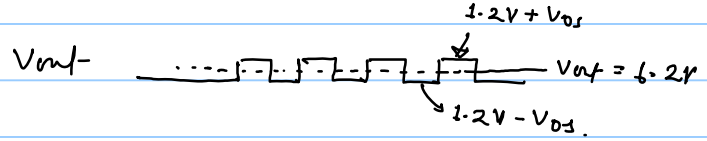
= 600gm due to error.

total = 0.4 + 0.6 = 1kg.

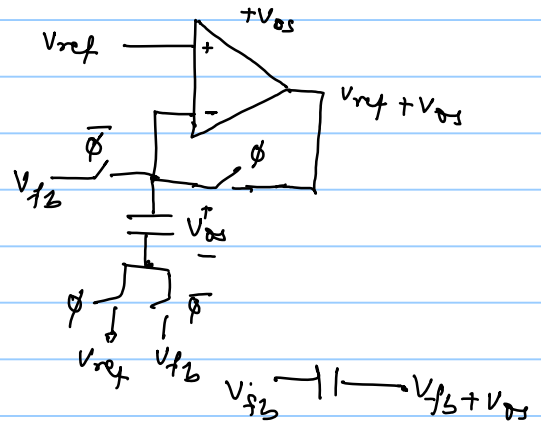
error is cancelled out.



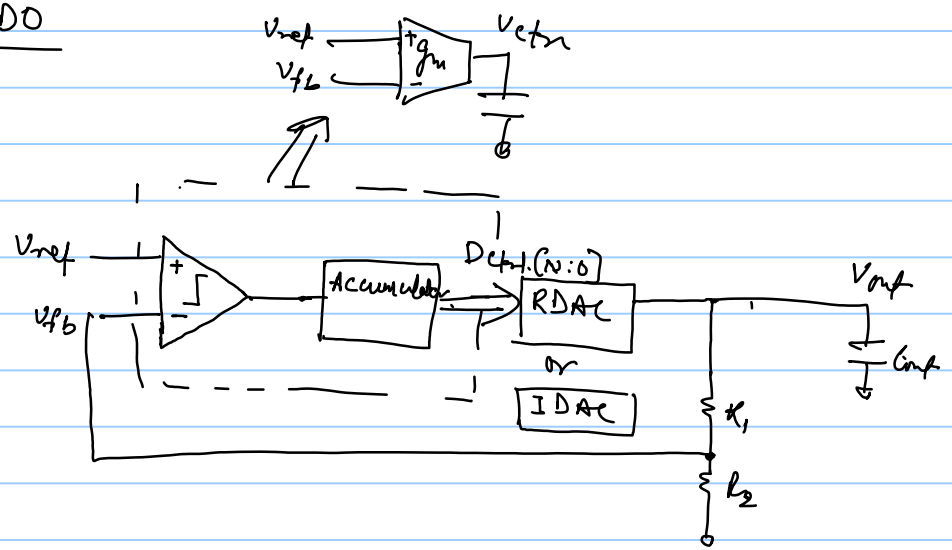


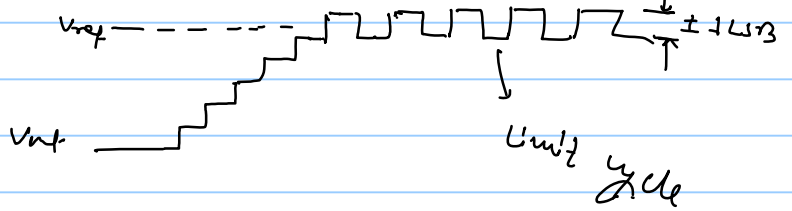


Auto zero offset cancellation

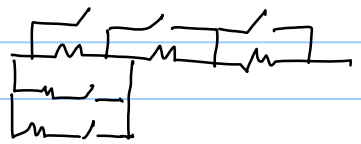


Digital LDO

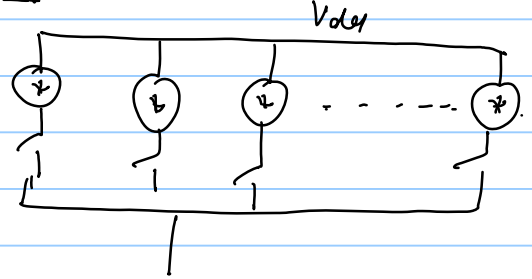


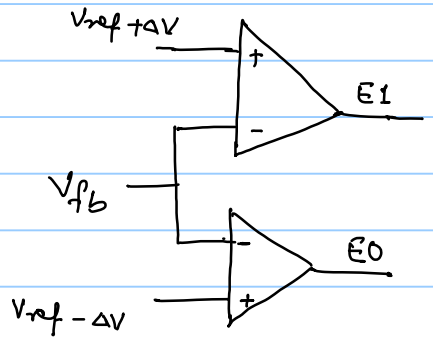


RDAC ⇒



IDAC ⇒





if $V_{fb} < V_{ref} + \Delta V$ but $V_{fb} > V_{ref} - \Delta V$

$E1 = 1, \quad E0 = 0 \quad \Rightarrow 0$

if $V_{fb} > V_{ref} + \Delta V$

$E1 = 0, \quad E0 = 0 \quad \Rightarrow +1$

if $V_{fb} < V_{ref} - \Delta V$

$E1 = 1, \quad E0 = 1 \quad \Rightarrow -1$

$\pm \Delta V = 1$ LSB

Resolution of RDAC or IDAC must be greater than $\pm \Delta V$ to avoid oscillations in the output.