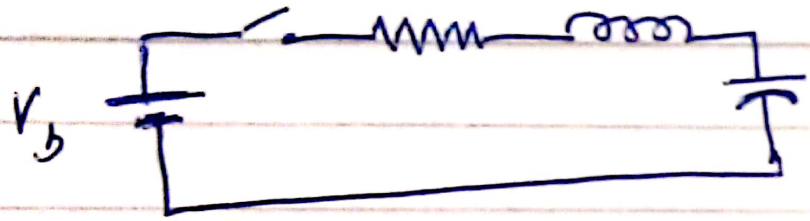

$$V_b = iR + L\frac{di}{dt} + \frac{1}{C}\int_0^t i\,dt$$

$$V_b = \frac{i_{n+1} + i_n}{2} \cdot R + L \cdot \frac{i_{n+1} - i_n}{dt} + \frac{1}{C}\,\frac{i_{n+1} + i_n}{2} \cdot dt + V_c(n)$$

Rearranging:

$$i_{n+1} = \frac{i_n\left(\frac{L}{dt} - \frac{R}{2} - \frac{dt}{2C}\right) + V_b - V_c(n)}{\frac{L}{dt} + \frac{R}{2} + \frac{dt}{2C}}$$