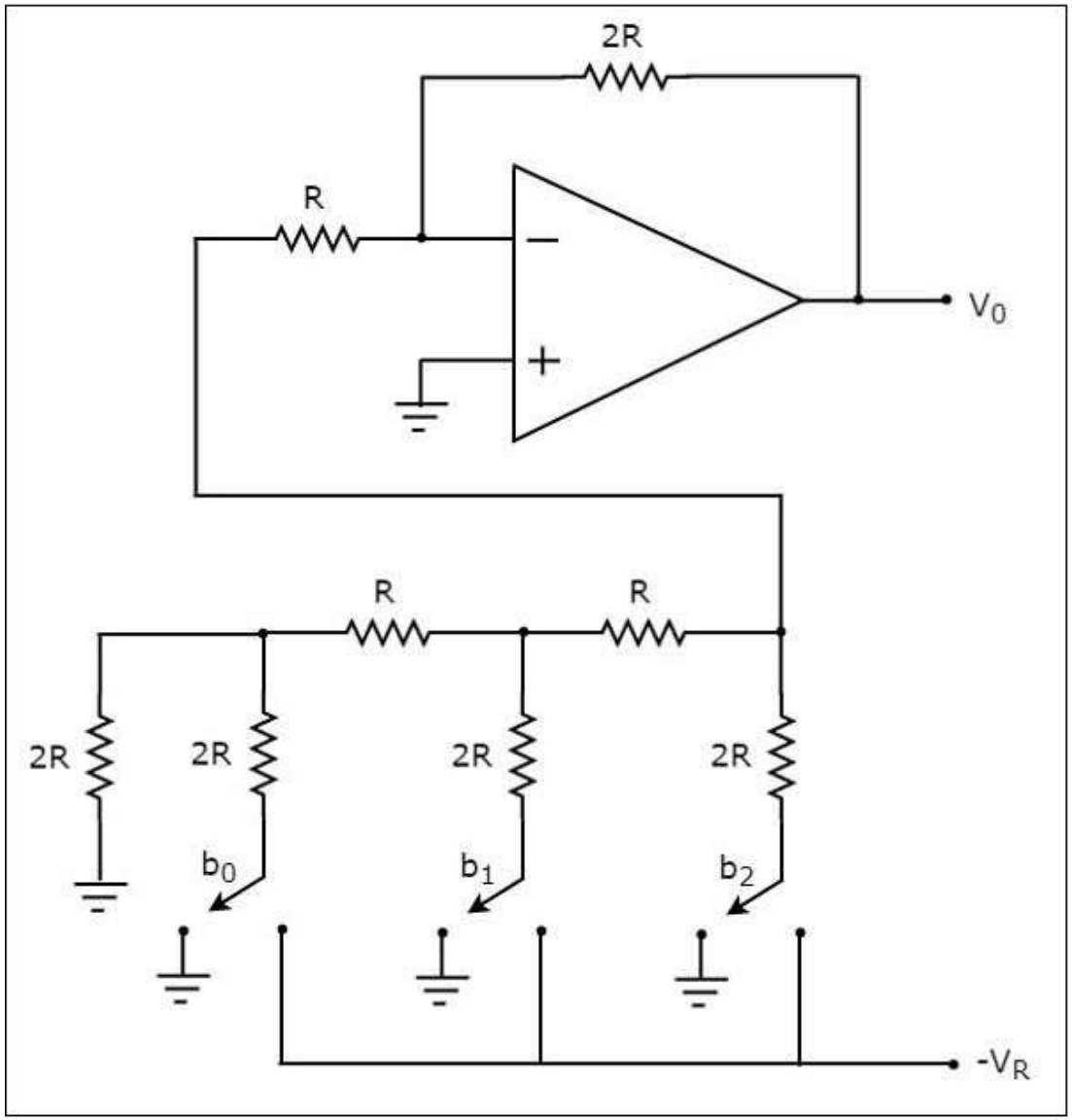
Embedded Systems Hardware
(EED-308)

Data Converters

Digital to Analog Converters (DAC)

R-2R Ladder DAC



$$V_0 = \frac{V_R}{2}\left\{\frac{b_{N-1}}{2^0} + \frac{b_{N-2}}{2^1} + \ldots + \frac{b_0}{2^{N-1}}\right\}$$

R-2R Ladder DAC

Advantage:

- ✓ Only two resistor values
- ✓ Does not need as precision resistors as Binary weighted DACs
- ✓ Cheap & easy to manufacture
- ✓ Faster response time

Disadvantages

- ✓ Slower conversion rate
- ✓ More confusing analysis


THANK
YOU