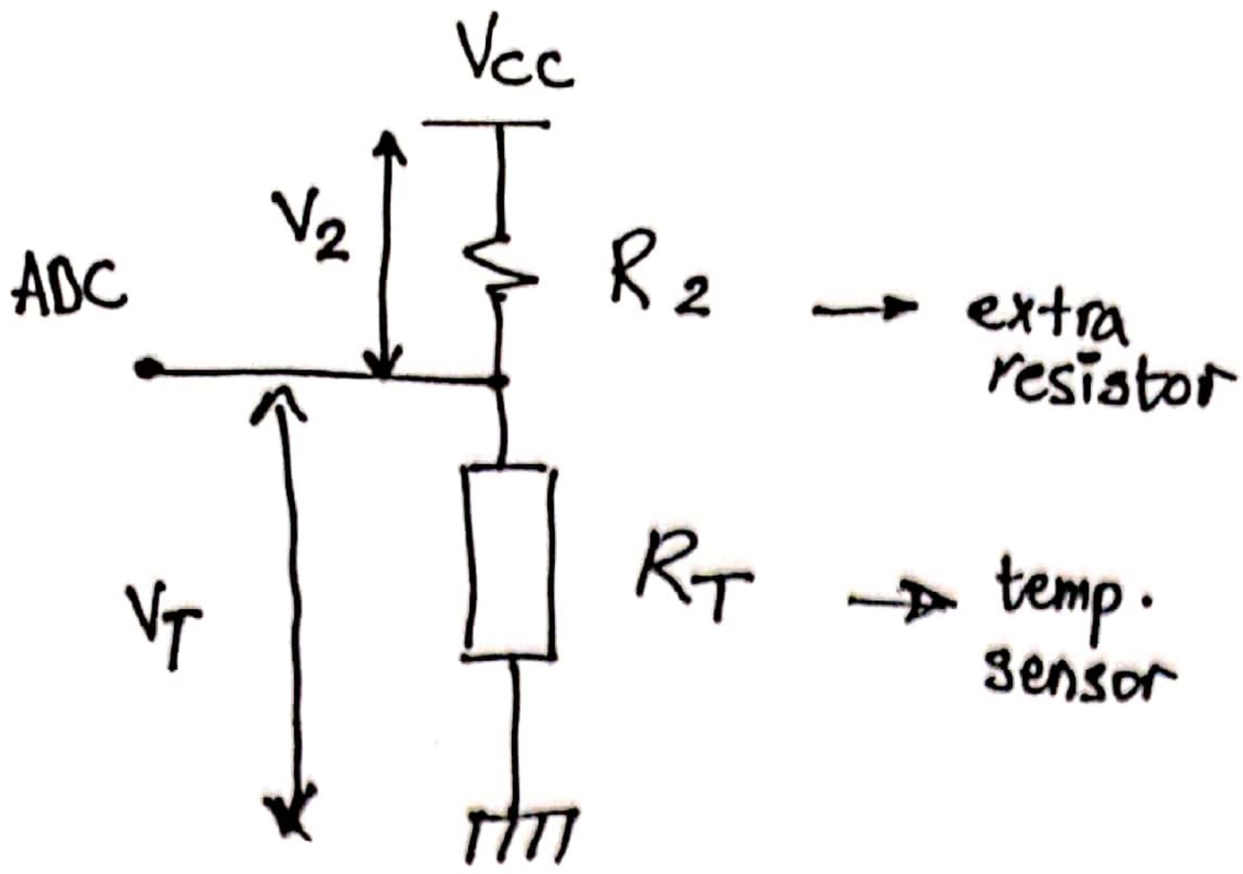

total voltage drop is Vcc → $V_T + V_2 = V_{cc}$

from Ohm's law → $V = IR$ → $I = \frac{V}{R}$

current running through both resistances

$$I = \frac{V_{cc}}{R_T + R_2} \rightarrow ①$$

Voltage drop on temp. resistance/sensor

$$V_T = I\,R_T \rightarrow ②$$

① & ② → $V_T = V_{cc}\left(\frac{R_T}{R_T + R_2}\right)$

$V_T(R_T + R_2) = V_{cc}\,R_T \rightarrow V_T R_T + R_2 V_T = V_{cc} R_T$

$R_2 V_T = V_{cc} R_T - V_T R_T \rightarrow R_2 V_T = (V_{cc} - V_T) R_T$

$$\Rightarrow \boxed{R_T = \frac{R_2\,V_T}{V_{cc} - V_T}}$$

if ESP32 (w/ 11dB attenuation) $0V \leq V_t \leq 3.3V$

$0 \leq \text{ADC value} \leq 4095$

→ $V_T = \frac{\text{ADC value}}{4095} * 3.3$ ($3.3 \uparrow V_{cc}$)

→ Pick any value for R_2

→ get temp. by getting R_T (from data sheet)