CHEAP/EASY WAY TO GET LOUDER AUDIO FROM MICROCONTROLLER

Choose $V_S$ based on speaker power rating:

$$P_{\text{max}} = \frac{V_S^2}{R}$$

$$\Rightarrow V_S < \sqrt{R \cdot P_{\text{max}}}$$

Choose $f_c < f_{\text{audio}}$

$$\Rightarrow C > \frac{1}{2\pi R f_{\text{audio}}}$$

Select transistor w/ adequate current capacity:

$$I_{\text{max}} = \frac{V_S}{R}$$

HIGH-PASS FILTER w/:

$$\omega_c = \frac{1}{RC}$$

$$f_c = \frac{\omega_c}{2\pi} = \frac{1}{2\pi RC}$$