CPS188 Lab 2 Practice Problems

Problem 1

Base:

Decibels (dB) are used as a measure of sound intensity (I).

$$I = 10^{\frac{dB}{10}} * I_0$$

$$I_0 = 10^{-12}$$

Write a function that calculates how many times more intense sound at 50dB is compared to 10dB using the decibel intensity formula. Return the result. Call the function and print out the result in a formatted sentence.

- Think about what your variable types and function return type will be.

- Hint: Sound at 30 dB is 10 times intense than at 20dB, and sound at 40dB is 100 times intense than at 20dB.
- Hint: Calculate I for both decibel values and find the ratio between the two.

See Intensity.c for the solution.

Challenge 1: Write a modular function to solve the above problem, that accepts any two decibel values.

See IntensityC1A.c for the solution.

- What happens if you swap the order of the two decibel values that are being accepted by your function?
    - See IntensityC1B.c for the solution.

Challenge 2: Calculate the result without calculating the intensity for each decibel separately.

See IntensityC2.c for the solution.

Challenge 3: Ask the user for the two decibel values.