Binary.89p

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This program converts traditional decimal, or base 10, numbers to binary, or base 2. It does this using a backwards "for" loop to repeat the basic conversion template for decimal to binary. It uses logarithms to determine the correct power of 2 to start with for the conversion. This is very important, because starting too high slows down the program, and starting too low makes it produce inaccurate results for higher numbers.

The user need only enter the decimal number to be converted.

Formulas used:

$$\text{decimal} = 2^x$$

$$x = \log_2(\text{decimal})$$

$$x = \frac{\ln(\text{decimal})}{\ln 2}$$