CS50's Introduction to Programming with Python

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David J. Malan (https://cs.harvard.edu/malan/)
malan@harvard.edu
f (https://www.facebook.com/dmalan) ○ (https://github.com/dmalan) ○
(https://www.instagram.com/davidjmalan/) in (https://www.linkedin.com/in/malan/)
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Fuel Gauge

Fuel gauges indicate, often with fractions, just how much fuel is in a
tank. For instance 1/4 indicates that a tank is 25% full, 1/2 indicates
that a tank is 50% full, and 3/4 indicates that a tank is 75% full.

In a file called `fuel.py`, implement a program that prompts the user
for a fraction, formatted as `X/Y`, wherein each of `X` and `Y` is an
integer, and then outputs, as a percentage rounded to the nearest
integer, how much fuel is in the tank. If, though, 1% or less remains,
output `E` instead to indicate that the tank is essentially empty. And if
99% or more remains, output `F` instead to indicate that the tank is
essentially full.

Source:
amazon.com/dp/B09C4F
L56G
(https://www.amazon.co
m/dp/B09C4FL56G)

If, though, `X` or `Y` is not an integer, `X` is greater than `Y`, or `Y` is `0`,
instead prompt the user again. (It is not necessary for `Y` to be `4`.) Be sure to catch any
exceptions like `ValueError` (https://docs.python.org/3/library/exceptions.html#ValueError) or
`ZeroDivisionError` (https://docs.python.org/3/library/exceptions.html#ZeroDivisionError).

▶ **Hints**

Demo

```
Fraction: 1/4
25%
$ python fuel.py
Fraction: 1/2
50%
$ python fuel.py
Fraction: 3/4
75%
$ python fuel.py
Fraction: 4/4
F
$
```

Recorded with **asciinema**

Before You Begin

Log into cs50.dev (https://cs50.dev/), click on your terminal window, and execute `cd` by itself. You should find that your terminal window's prompt resembles the below:

```
$
```

Next execute

```
mkdir fuel
```

to make a folder called `fuel` in your codespace.

Then execute

```
cd fuel
```

to change directories into that folder. You should now see your terminal prompt as `fuel/ $`. You can now execute

```
code fuel.py
```

to make a file called `fuel.py` where you'll write your program.

How to Test

Here's how to test your code manually:

- Run your program with `python fuel.py`. Type `3/4` and press Enter. Your program should output:

> 75%

- Run your program with `python fuel.py`. Type `1/4` and press Enter. Your program should output:

> 25%

- Run your program with `python fuel.py`. Type `4/4` and press Enter. Your program should output:

> F

- Run your program with `python fuel.py`. Type `0/4` and press Enter. Your program should output:

> E

- Run your program with `python fuel.py`. Type `4/0` and press Enter. Your program should handle a `ZeroDivisionError` (https://docs.python.org/3/library/exceptions.html#ZeroDivisionError) and prompt the user again.

- Run your program with `python fuel.py`. Type `three/four` and press Enter. Your program should handle a `ValueError` (https://docs.python.org/3/library/exceptions.html#ValueError) and prompt the user again.

- Run your program with `python fuel.py`. Type `1.5/3` and press Enter. Your program should handle a `ValueError` (https://docs.python.org/3/library/exceptions.html#ValueError) and prompt the user again.

- Run your program with `python fuel.py`. Type `5/4` and press Enter. Your program should prompt the user again.

You can execute the below to check your code using `check50`, a program that CS50 will use to test your code when you submit. But be sure to test it yourself as well!

```
check50 cs50/problems/2022/python/fuel
```

Green smilies mean your program has passed a test! Red frownies will indicate your program output something unexpected. Visit the URL that `check50` outputs to see the input `check50` handed to your program, what output it expected, and what output your program actually gave.

How to Submit

In your terminal, execute the below to submit your work.

```
submit50 cs50/problems/2022/python/fuel
```