CS50's Introduction to Programming with Python

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Pizza Py



Perhaps the most popular place for pizza in <u>Harvard Square</u>

(https://en.wikipedia.org/wiki/Harvard_Square) is Pinocchio's Pizza & Subs

(https://www.pinocchiospizza.net/), aka Noch's, known for its Sicilian pizza

(https://www.pinocchiospizza.net/sicilian_vs_regular.html), which is "a deep-dish or thick-crust pizza."

Students tend to buy pizza by the slice, but Pinocchio's also has whole pizzas on its menu (https://www.pinocchiospizza.net/menu.html) too, per this CSV file of Sicilian pizzas, sicilian.csv, below:

```
Sicilian Pizza, Small, Large
Cheese, $25.50, $39.95
1 item, $27.50, $41.95
2 items, $29.50, $43.95
3 items, $31.50, $45.95
Special, $33.50, $47.95
```

See regular.csv for a CSV file of regular pizzas as well.

Of course, a CSV file isn't the most customer-friendly format to look at. Prettier might be a table, formatted as ASCII art (https://en.wikipedia.org/wiki/ASCII_art), like this one:

Sicilian Pizza	Small	Large
Cheese	\$25 . 50	\$39.95
1 item	\$27.50	
2 items	\$29.50	•
3 items	\$31.50	
Special	\$33 . 50	•

In a file called <code>pizza.py</code>, implement a program that expects exactly one command-line argument, the name (or path) of a CSV file in Pinocchio's format, and outputs a table formatted as ASCII art using <code>tabulate</code>, a package on PyPI at <code>pypi.org/project/tabulate</code> (https://pypi.org/project/tabulate/). Format the table using the library's <code>grid</code> format. If the user does not specify exactly one command-line argument, or if the specified file's name does not end in <code>.csv</code>, or if the specified file does not exist, the program should instead exit via <code>sys.exit</code>.

▼ Hints

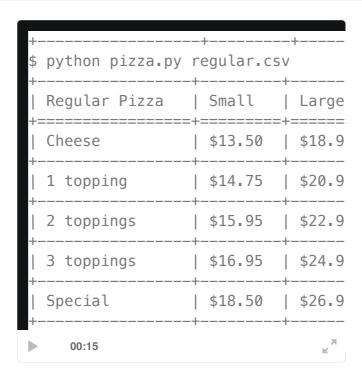
- Recall that the csv module comes with quite a few methods, per docs.python.org/3/library/csv.html (https://docs.python.org/3/library/csv.html), among which are reader, per docs.python.org/3/library/csv.html#csv.reader (https://docs.python.org/3/library/csv.html#csv.reader), and DictReader, per docs.python.org/3/library/csv.html#csv.DictReader (https://docs.python.org/3/library/csv.html#csv.DictReader).
- Note that open can raise a FileNotFoundError, per docs.python.org/3/library/exceptions.html#FileNotFoundError

(https://docs.python.org/3/library/exceptions.html#FileNotFoundError).

Note that the tabulate package comes with just one function, per <u>pypi.org/project/tabulate (https://pypi.org/project/tabulate/)</u>. You can install the package with:

```
pip install tabulate
```

Demo



Recorded with asciinema

Before You Begin

Log into <u>cs50.dev</u> (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 pizza

to make a folder called pizza in your codespace.

Then execute

cd pizza

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

```
code pizza.py
```

to make a file called pizza.py where you'll write your program. Be sure to run

```
wget https://cs50.harvard.edu/python/2022/psets/6/pizza/sicilian.csv
```

to download sicilian.csv into your folder. Also run

```
wget https://cs50.harvard.edu/python/2022/psets/6/pizza/regular.csv
```

to download regular.csv into your folder.

How to Test

Here's how to test your code manually:

Run your program with python pizza.py . Your program should exit using sys.exit and provide an error message:

```
Too few command-line arguments
```

Be sure to download <u>regular.csv</u> and <u>sicilian.csv</u>, placing them in the same folder as pizza.py. Run your program with python pizza.py regular.csv sicilian.csv. Your program should output:

```
Too many command-line arguments
```

Run your program with python pizza.py invalid_file.csv .Assuming invalid_file.csv doesn't exist, your program should exit using sys.exit and provide an error message:

```
File does not exist
```

Create a file named sicilian.txt Run your program with python pizza.py sicilian.txt Your program should exit using sys.exit and provide an error message:

```
Not a CSV file
```

Run your program with python pizza.py regular.csv. Assuming you've downloaded regular.csv, your program should print a table like the below:

```
+----+
| Regular Pizza | Small | Large |
+======+
```

Cheese \$1	13.50 \$	18.95
1 topping	14.75 \$	20.95
2 toppings	15.95 \$	
3 toppings	16.95 \$	
Special \$1	18.50 \$	

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/pizza

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/pizza