CS50's Introduction to Programming with Python

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David J. Malan (https://cs.harvard.edu/malan/)
malan@harvard.edu
(https://www.facebook.com/dmalan) (https://github.com/dmalan)
(https://www.instagram.com/davidjmalan/) (https://www.linkedin.com/in/malan/)
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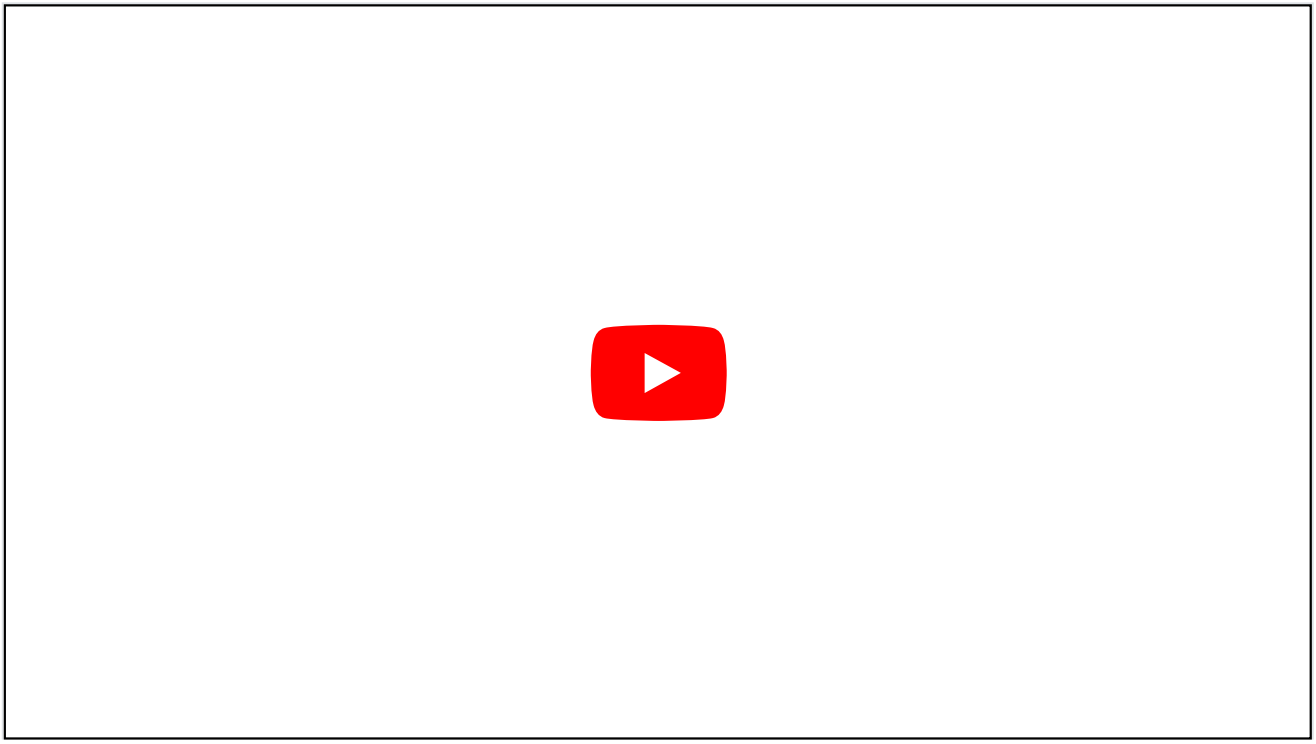
Pizza Py



Perhaps the most popular place for pizza in Harvard Square (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.

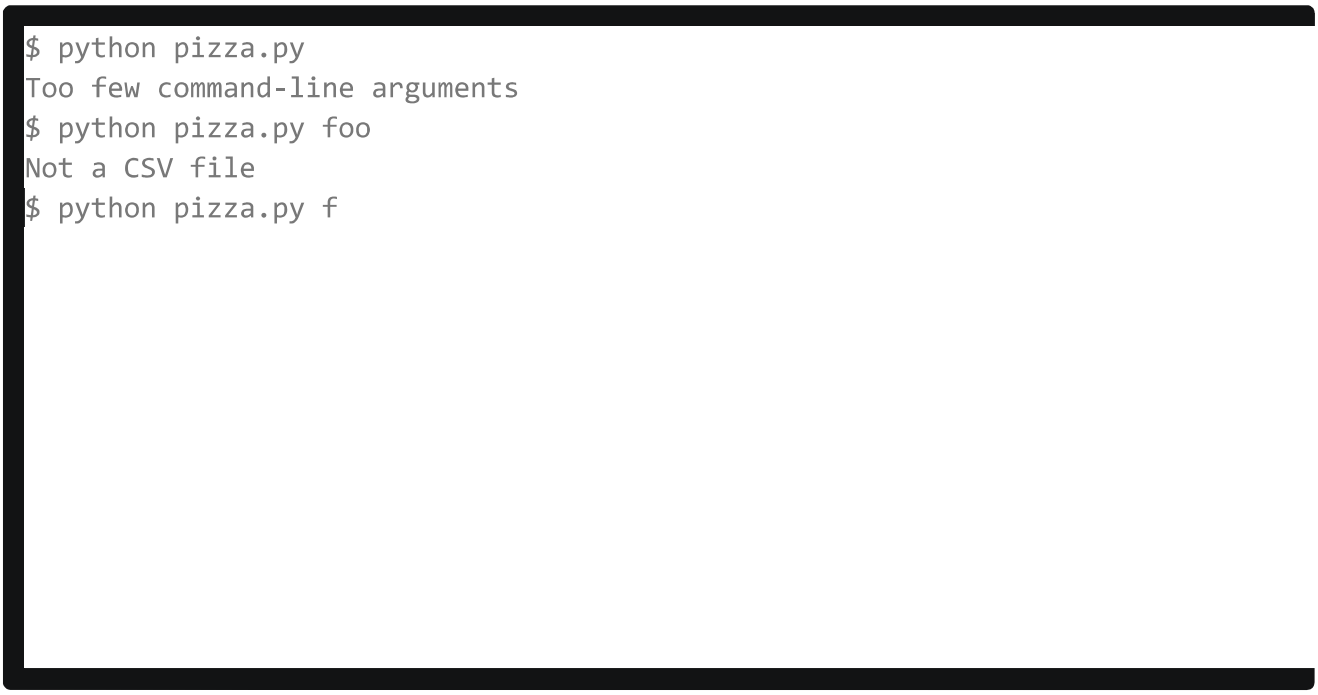
Of course, a CSV file isn't the most customer-friendly format to look at. Prettier might be a table, formatted as ASCII art (https://en.wikipedia.org/wiki/ASCII_art), like this one:

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

In a file called `pizza.py`, 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 `tabulate`, a package on PyPI at pypi.org/project/tabulate (https://pypi.org/project/tabulate/). Format the table using the library's `grid` format. If the user does not specify exactly one command-line argument, or if the specified file's name does not end in `.csv`, or if the specified file does not exist, the program should instead exit via `sys.exit`.

▶ **Hints**

Demo



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 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 regular.csv and sicilian.csv, 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          | $13.50  | $18.95  |
  +-----------------+---------+---------+
  | 1 topping       | $14.75  | $20.95  |
  +-----------------+---------+---------+
  | 2 toppings      | $15.95  | $22.95  |
  +-----------------+---------+---------+
  | 3 toppings      | $16.95  | $24.95  |
  +-----------------+---------+---------+
  | Special         | $18.50  | $26.95  |
  +-----------------+---------+---------+
  ```

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
```