## CS50's Introduction to Programming with Python

OpenCourseWare

Donate (https://cs50.harvard.edu/donate)

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/) (https://www.linkedin.com/in/malan/) (https://orcid.org/0000-0001-5338-2522) (https://www.quora.com/profile/David-J-Malan) (https://www.reddit.com/user/davidjmalan) (https://www.tiktok.com/@davidjmalan) (https://twitter.com/davidjmalan)

# Frank, Ian and Glen's Letters

FIGlet (https://en.wikipedia.org/wiki/FIGlet), named after Frank, Ian, and Glen's letters (http://www.figlet.org/faq.html), is a program from the early 1990s for making large letters out of ordinary text, a form of ASCII art (https://en.wikipedia.org/wiki/ASCII art):

Among the fonts supported by FIGlet are those at figlet.org/examples.html (http://www.figlet.org/examples.html).

FIGlet has since been ported to Python as a module called pyfiglet (https://pypi.org/project/pyfiglet/0.7/).

In a file called figlet.py, implement a program that:

- Expects zero or two command-line arguments:
  - Zero if the user would like to output text in a random font.
  - Two if the user would like to output text in a specific font, in which case the first of the two should be -f or --font, and the second of the two should be the name of the font.
- Prompts the user for a str of text.
- Outputs that text in the desired font.

If the user provides two command-line arguments and the first is not -f or --font or the second is not the name of a font, the program should exit via sys.exit with an error message.

#### **▼** Hints

You can install pyfiglet with:

```
pip install pyfiglet
```

■ The documentation for pyfiglet isn't very clear, but you can use the module as follows:

```
from pyfiglet import Figlet
figlet = Figlet()
```

You can then get a list of available fonts with code like this:

```
figlet.getFonts()
```

You can set the font with code like this, wherein f is the font's name as a str:

```
figlet.setFont(font=f)
```

And you can output text in that font with code like this, wherein s is that text as a str:

```
print(figlet.renderText(s))
```

■ Note that the random module comes with quite a few functions, per docs.python.org/3/library/random.html (https://docs.python.org/3/library/random.html).

#### Demo

This demo's first output used a random font. Your output may vary.

Recorded with asciinema

### **Before You Begin**

Log into code.cs50.io (https://code.cs50.io/), 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 figlet

to make a folder called figlet into your codespace.

Then execute

cd figlet

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

code figlet.py

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

### **How to Test**

Here's how to test your code manually:

■ Run your program with python figlet.py test . Your program should exit via sys.exit and print an error message:

Invalid usage

■ Run your program with python figlet.py -a slant. Your program should exit via sys.exit and print an error message:

```
Invalid usage
```

■ Run your program with python figlet.py -f invalid\_font. Your program should exit via sys.exit and print an error message:

```
Invalid usage
```

■ Run your program with python figlet.py -f slant. Type CS50. Your program should print the following:

■ Run your program with python figlet.py -f rectangles. Type Hello, world. Your program should print the following:

■ Run your program with python figlet.py -f alphabet. Type Moo. Your program should print the following:

You can execute the below to check your code using <a href="check50">check50</a>, 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/figlet
```

Green smilies mean your program has passed a test! Red frownies will indicate your program output something unexpected. Visit the URL that <a href="https://check50">check50</a> outputs to see the input <a href="https://check50">check50</a> 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/figlet
```

https://cs50.harvard.edu/python/2022/psets/4/figlet/