Hello!

Maroof Shittu

Student, enthusiatic amateur, screen junkie. intern at Thrive Agric

Spends most of his time staring at blinking cursors.

You can find me on-- @maroofshittu and @dbugshe2

- Premium inputs
- Best Practices
- DD advisory
- Premium market
- Crowdfunding
- etc

Building Native Cross-platform Python Applications.

A fun Introduction to the BeeWare project

In This Talk.

1 Python Anywhere

In This Talk..

2

- What is a Beeware,
- How it works,
- a simple cross-platform hello world

In This Talk…

3

Join the Hive.

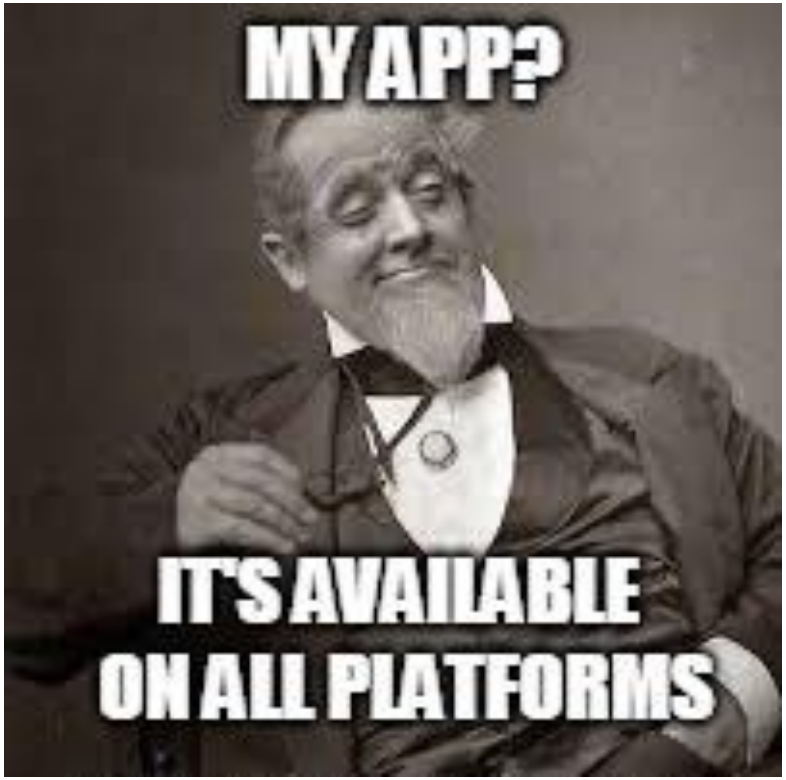
“ask not what the repo can do for you—ask what you can do for the repo”

Python Anywhere?

The Python language is very popular..

But computing is changing

All the platforms



SAMSUNG
tv

1

Python as a Mobile App Development Language

SMARTPHONES
THEY'RE EVERYWHERE
imgflip.com

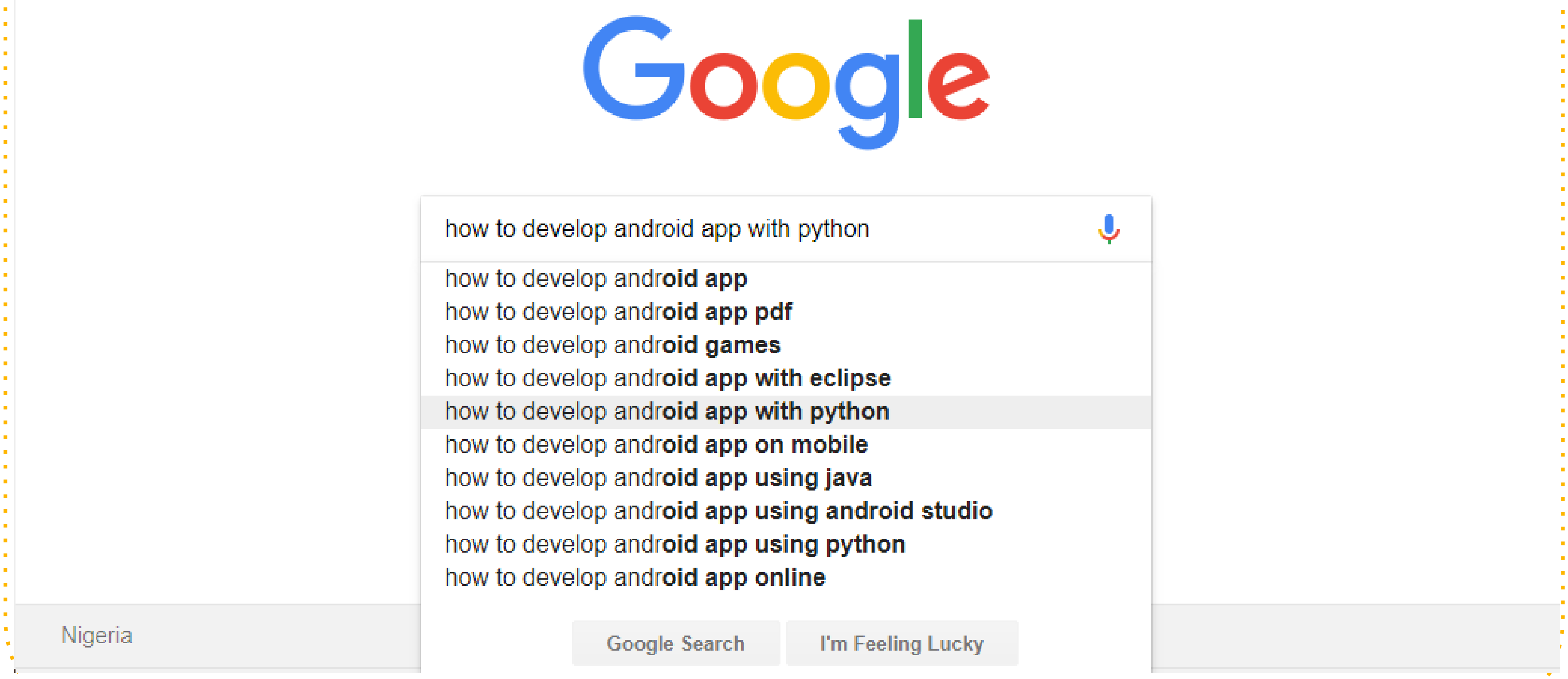
But why Python.

Learning to code():

Learning to code():

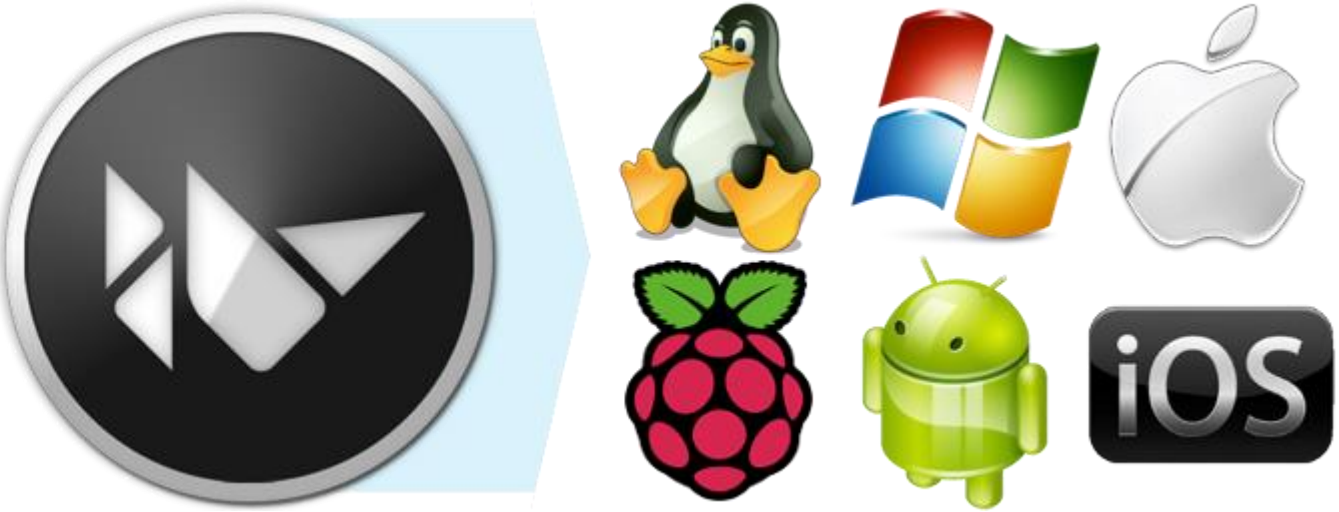
“Wow Now I can create simple console application, time to make an android app”

Mobile Python?



how to develop android app with python

how to develop android app
how to develop android app pdf
how to develop android games
how to develop android app with eclipse
how to develop android app with python
how to develop android app on mobile
how to develop android app using java
how to develop android app using android studio
how to develop android app using python
how to develop android app online



Credits kivy.org

Don’t sue me, please thank you

Everywhere you go

INTRO MIMỌ

Introduction

1

What?

we are talking about

1. Applications
2. Libraries
3. Tools
4. Widgets
5. and bridges

we are talking about

- Russell Keith-Magee
- Many wonderful contributors
- The bee team

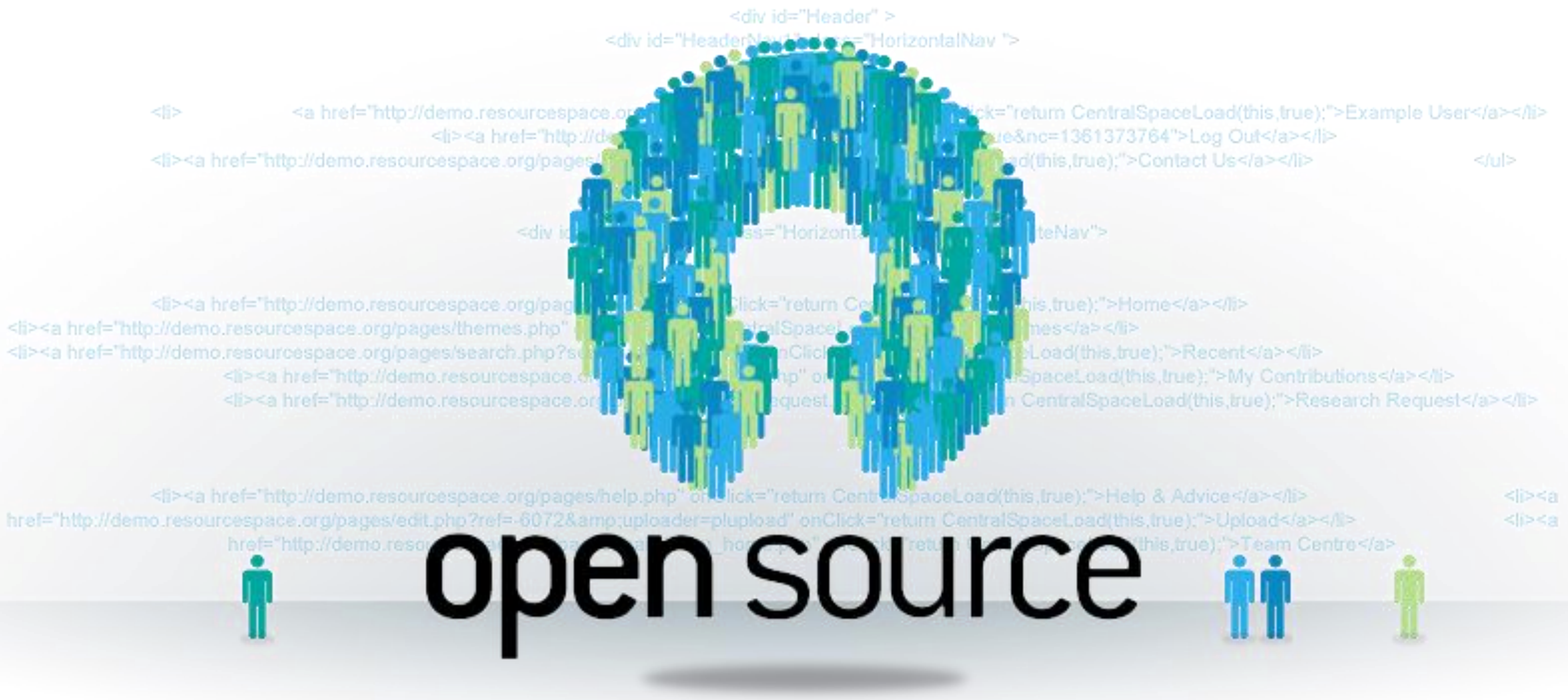
1. BeeWhat?

www.pybee.org

1. The Goal…

a. run python on different devices
b. Package python projects for those devices
c. Access native widgets and capabilities
d. Help develop, debug, analyse projects.

1. It is open



1. It is python native

2 VS 3

It is native everywhere

For Developers

1. pip install and nothing more.

For Users

1. End users shouldn't know that you've written the application in Python.

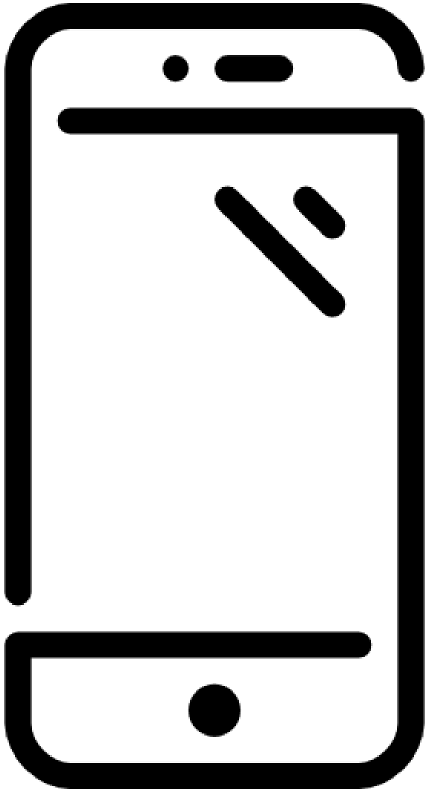
2

How?

Many shiny parts

What is it you want?

I want to write a **native iOS** app

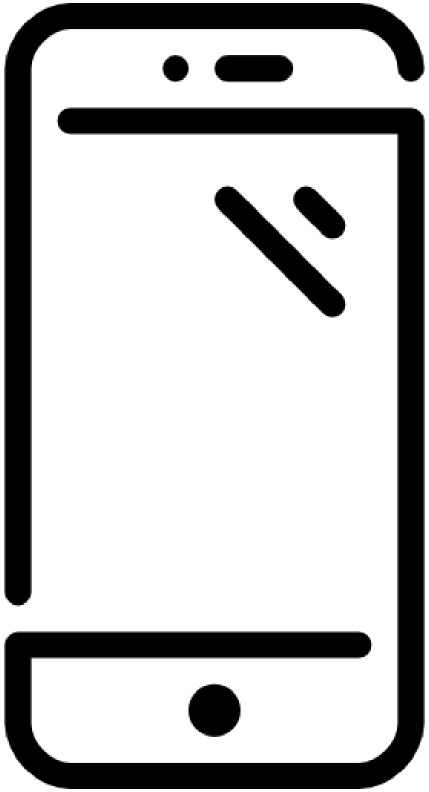


Swift

or

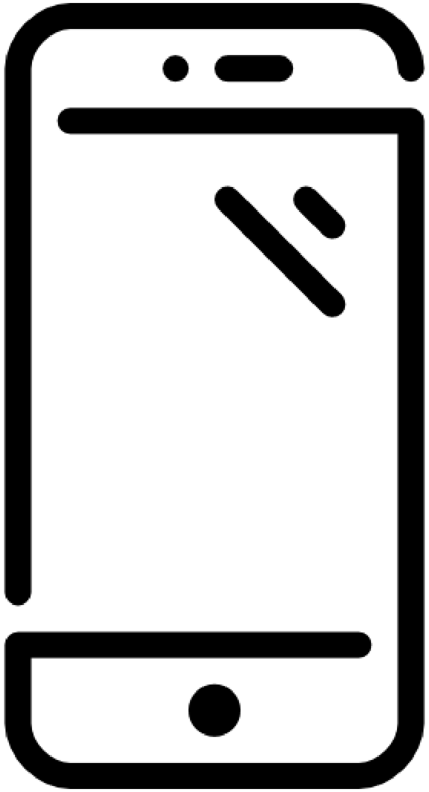
Objective - C

I want to write a native iOS app



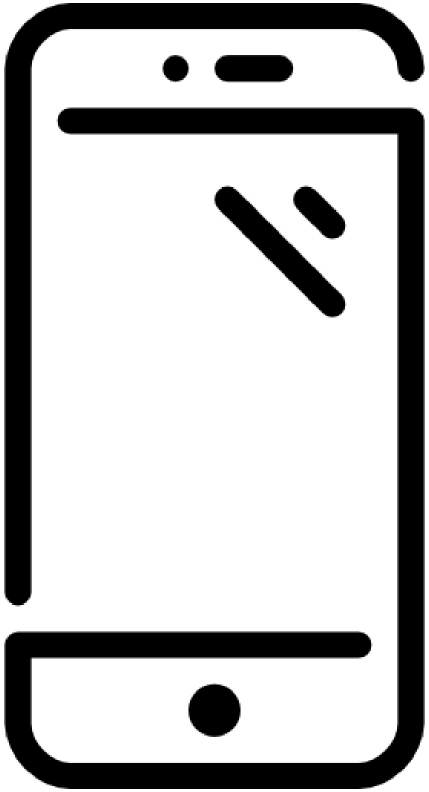
Python apple support

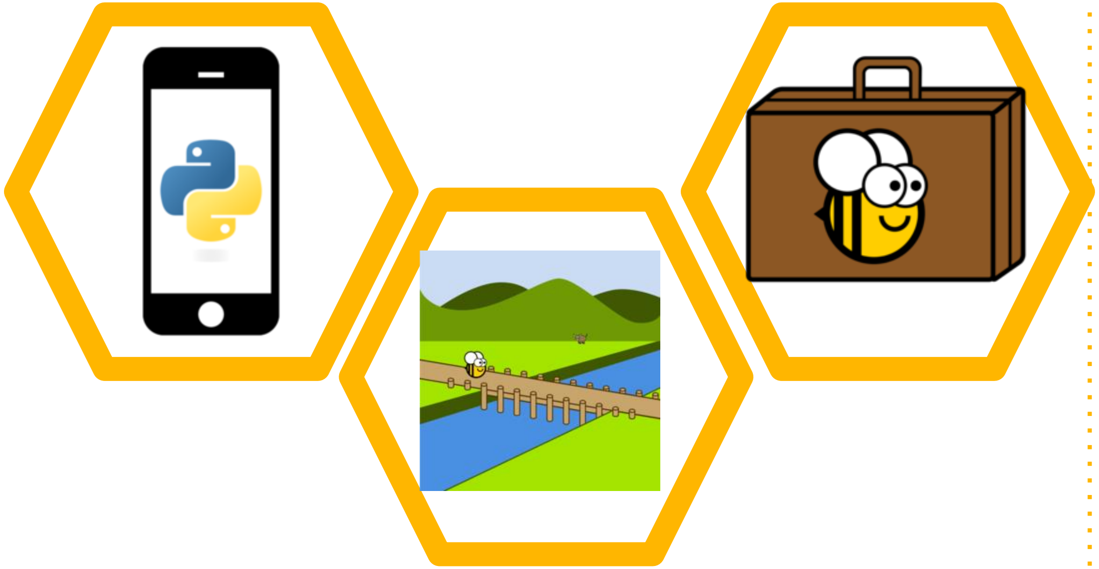
I want to write a native iOS app



Rubicon

I want to write a native iOS app





Briefcase

Template it!

COOKIECUTTER

Template it!

COOKIECUTTER

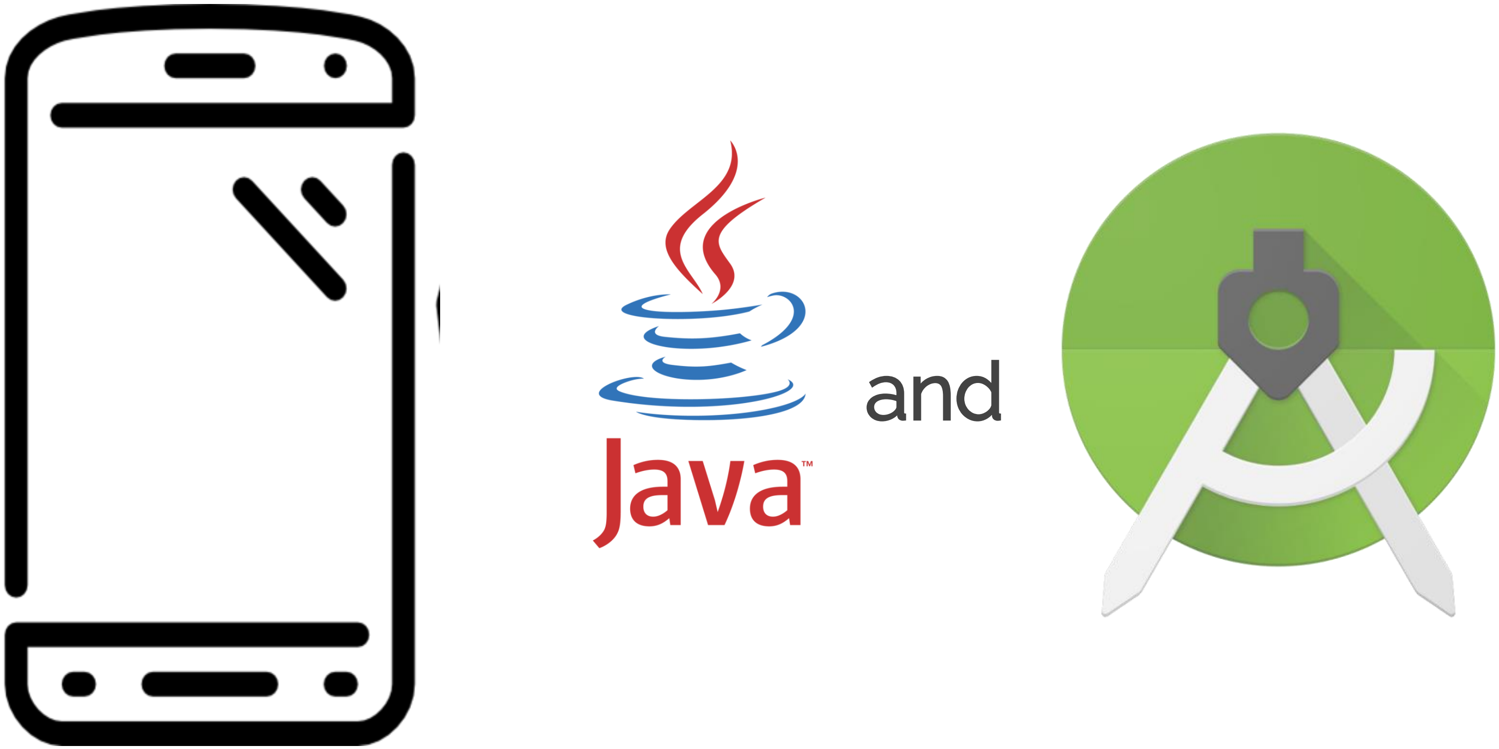
Briefcase template

https://github.com/pybee/briefcase-template

Python-iOS-Template

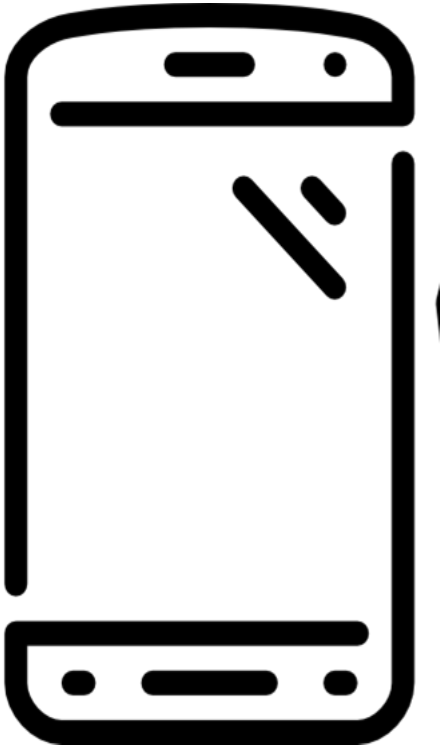
https://github.com/pybee/python-ios-template

I want to write a **native Android** app



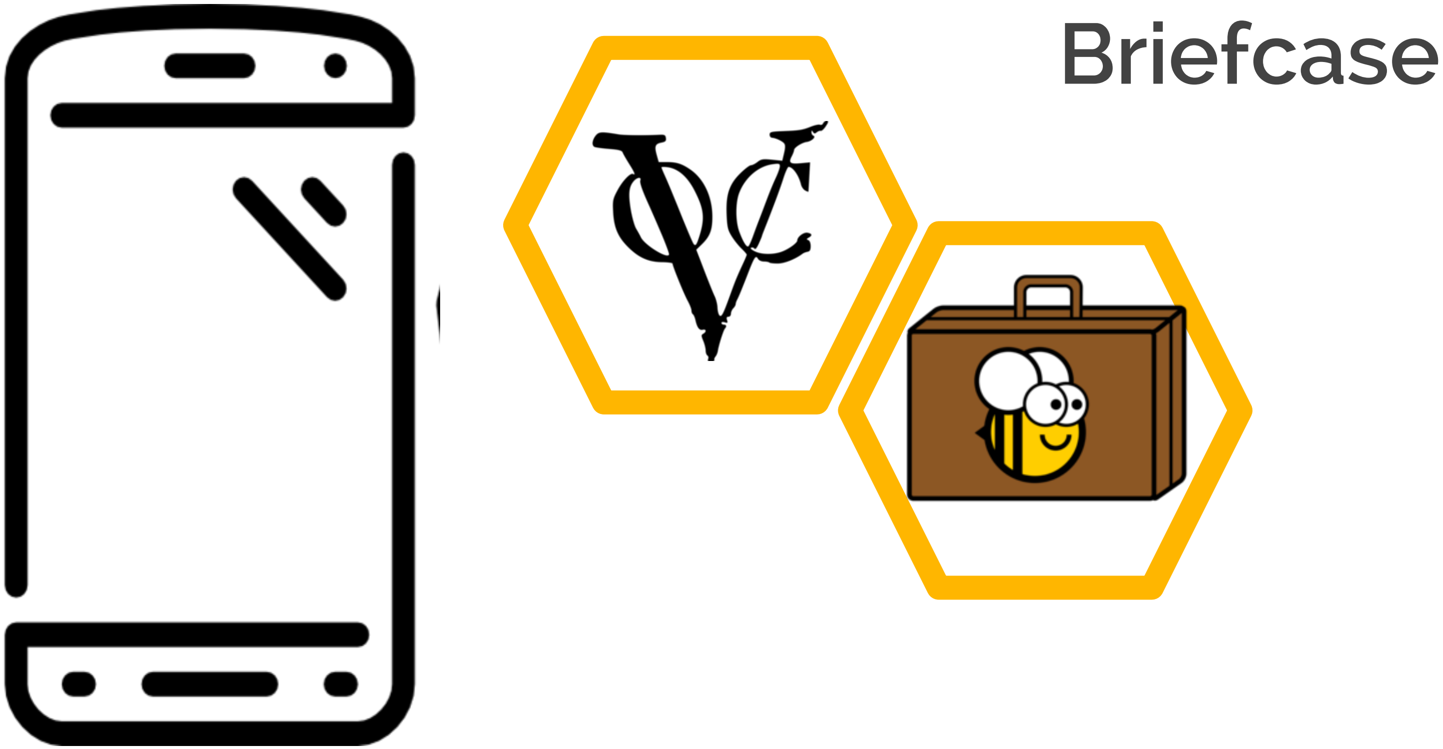
and

I want to write a **native Android** app



VOC

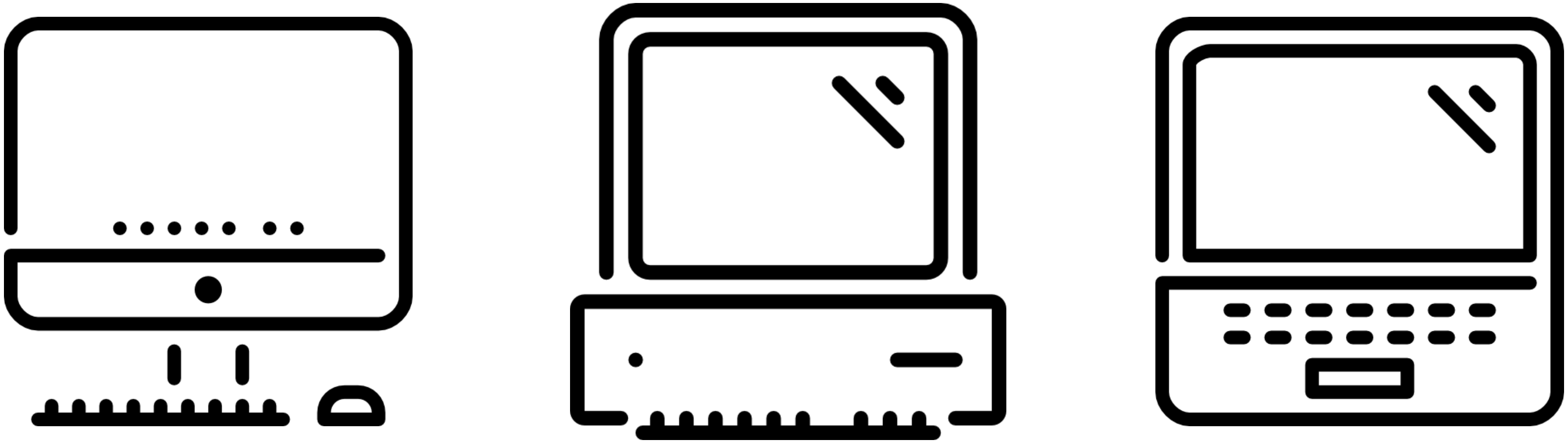
I want to write a **native Android** app



Python android template

https://github.com/pybee/python-android-template

I want a **native Desktop** app



I want a native Desktop app

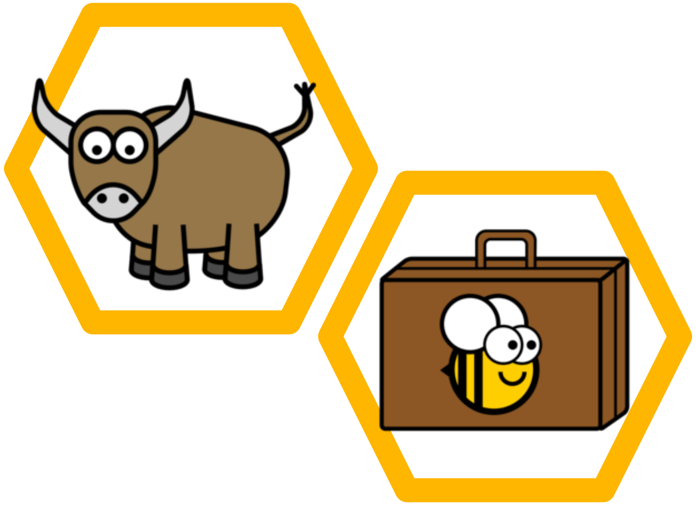
Toga

OH YES
YET ANOTHER WIDGET TOOLKIT
imgflip.com

I want a native Desktop app

Toga

I want a native Desktop app



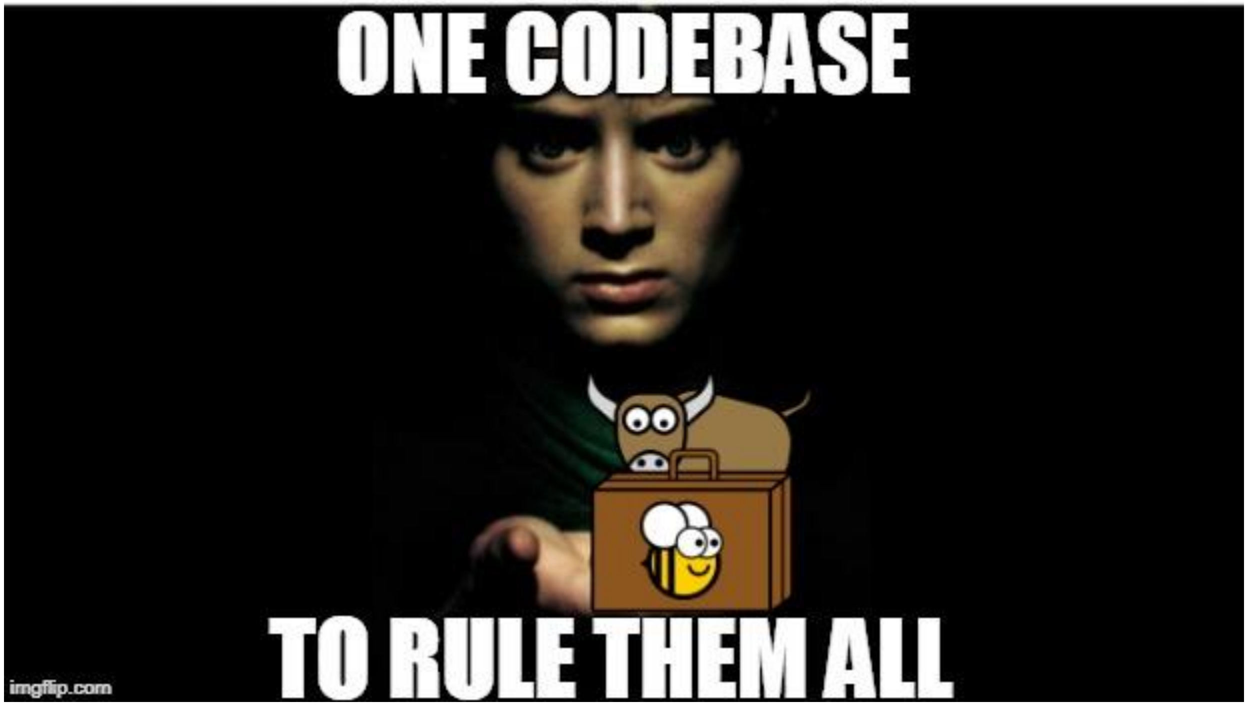
Briefcase

I want a native cross-platform mobile app

I want it on the web

Batavia

Finally....

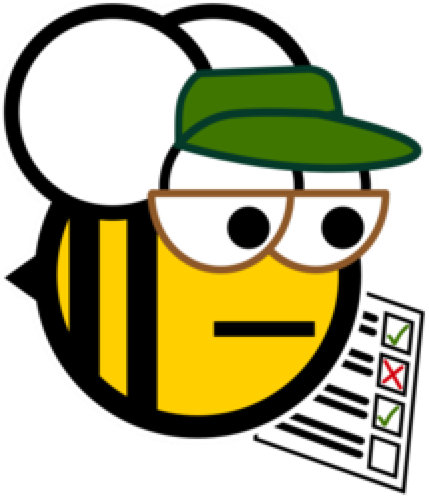


But wait there's more

- Beefore
- Cricket
- Duvet
- Bugjar
- Galley

But wait there's more

- Beefore



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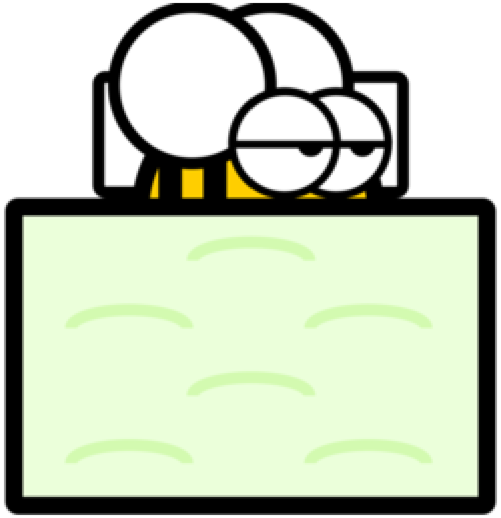

But wait there's more

- Beefore
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- Duvet
- Bugjar

But wait there's more

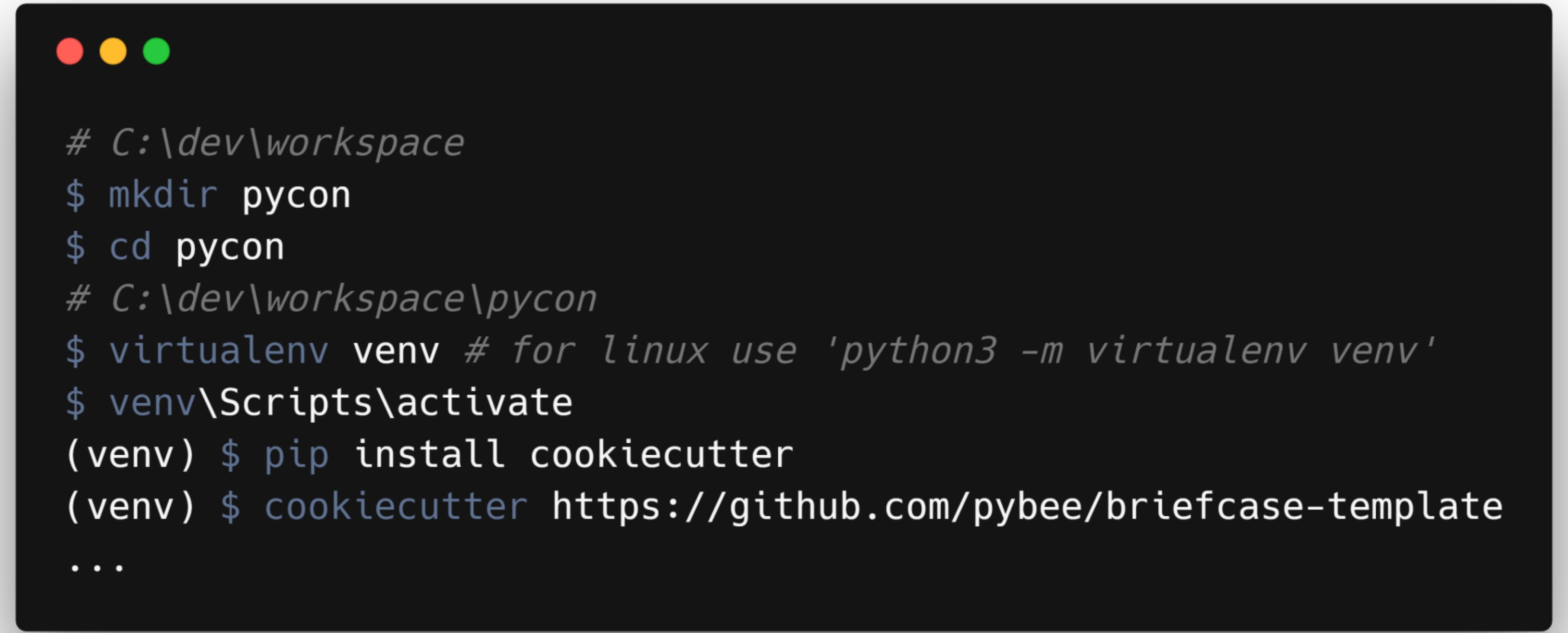
- Beefore
- Cricket
- Duvet
- Bugjar
- Galley

Let's Get Started!

What are we making.....

Fahrenheit to Celsius converter

Setup.

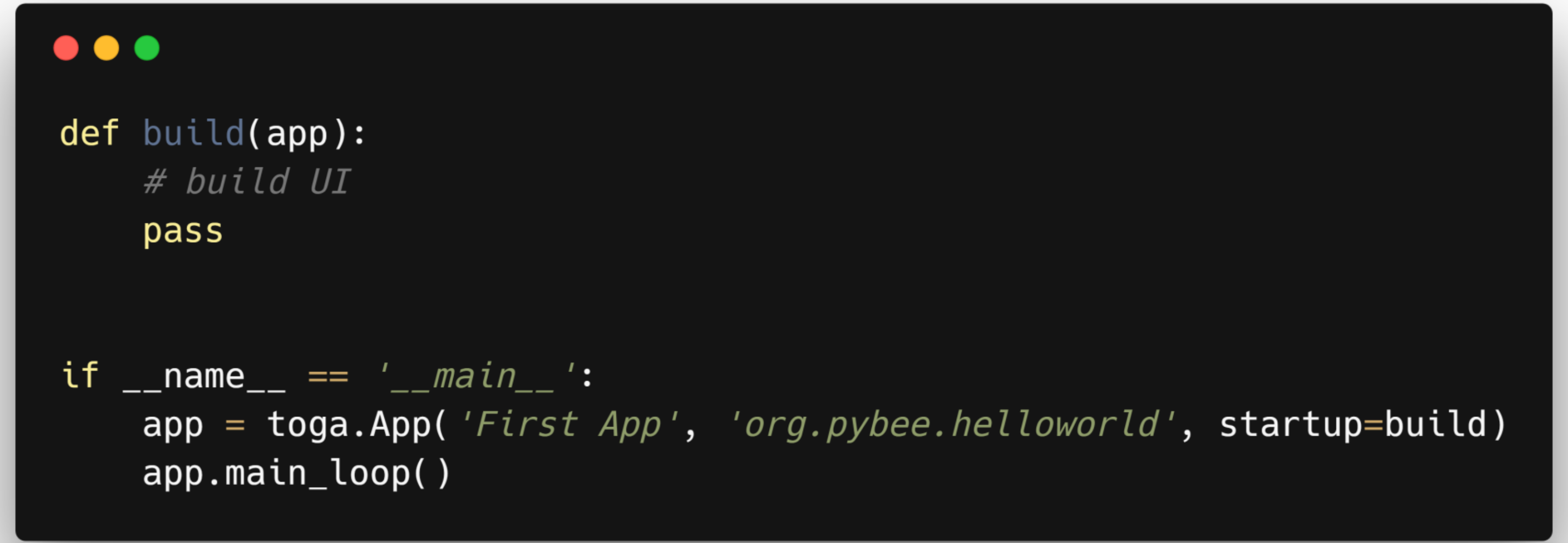


```
# C:\dev\workspace
$ mkdir pycon
$ cd pycon
# C:\dev\workspace\pycon
$ virtualenv venv # for linux use 'python3 -m virtualenv venv'
$ venv\Scripts\activate
(venv) $ pip install cookiecutter
(venv) $ cookiecutter https://github.com/pybee/briefcase-template
...
```

My folder Structure..

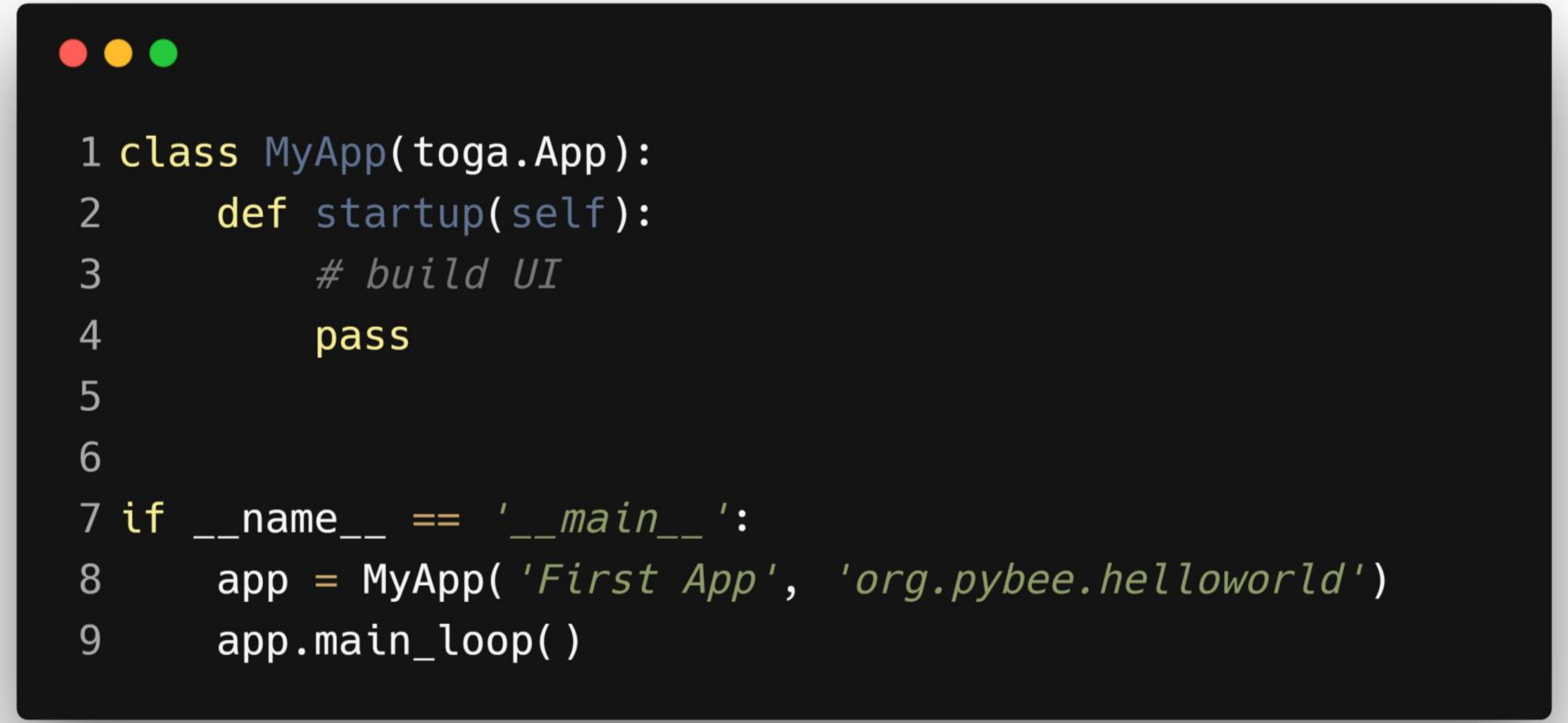
- Tempconverter/
    - __init__.py
    - __main__.py
    - app.py
- .gitignore
- LiCENSE
- README.rst
- Setup.py *

How to start an App #1



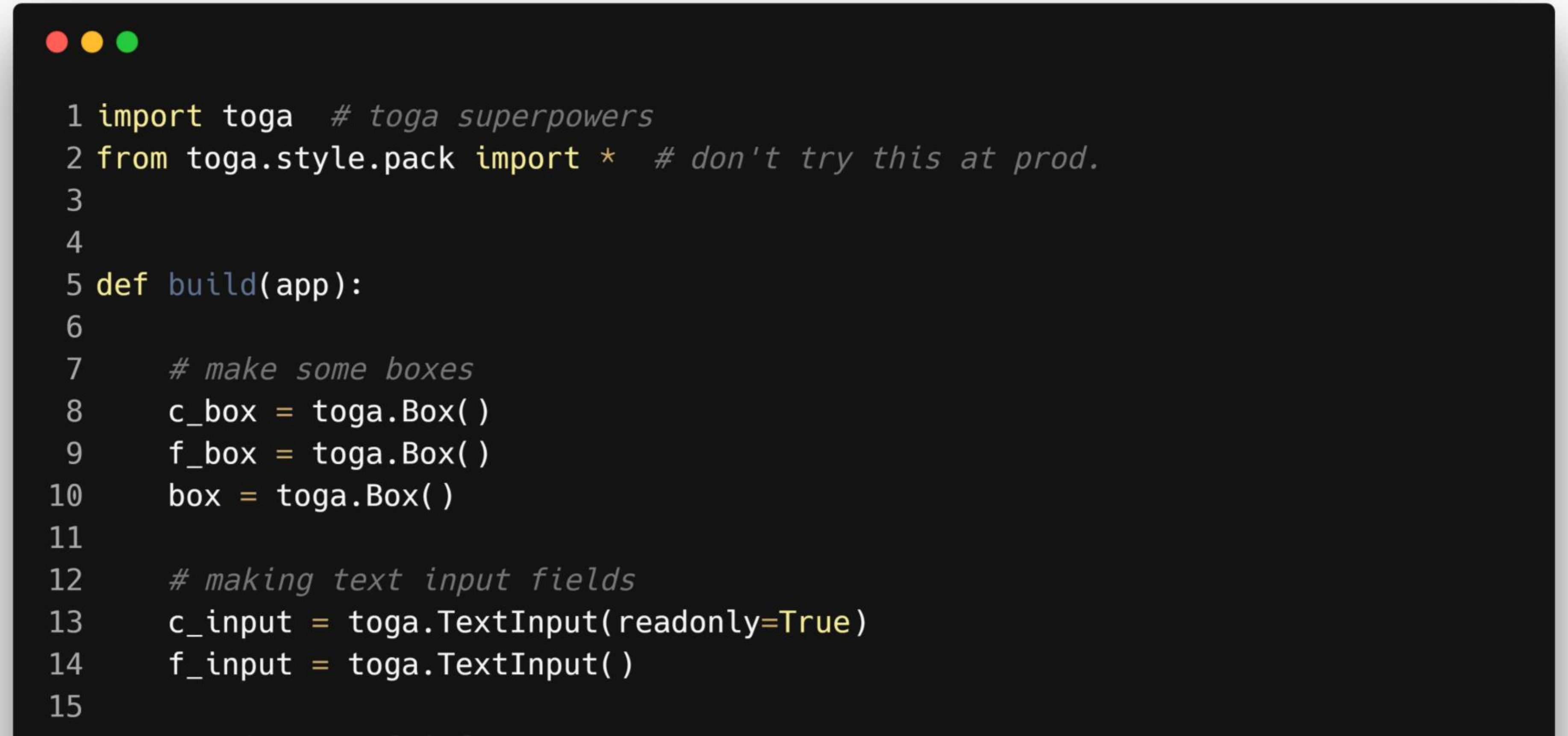
```
def build(app):
    # build UI
    pass


if __name__ == '__main__':
    app = toga.App('First App', 'org.pybee.helloworld', startup=build)
    app.main_loop()
```

How to start an App #2



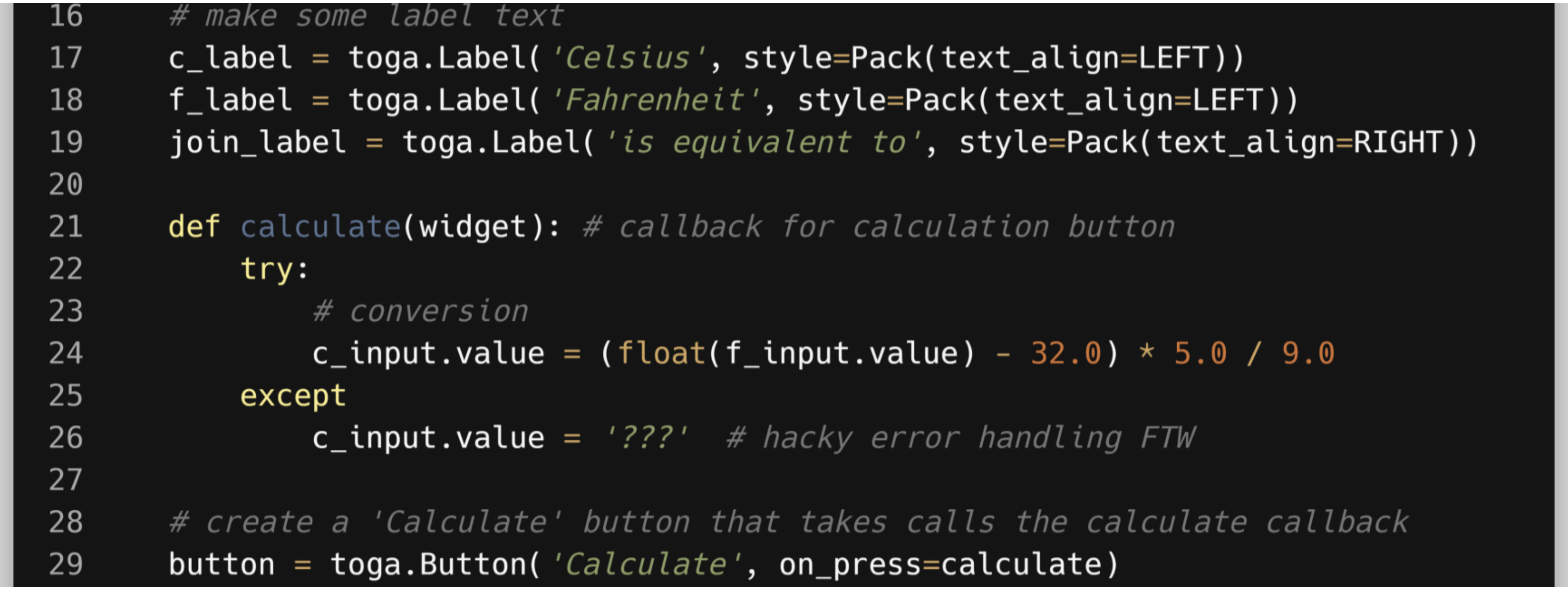
```python
class MyApp(toga.App):
    def startup(self):
        # build UI
        pass


if __name__ == '__main__':
    app = MyApp('First App', 'org.pybee.helloworld')
    app.main_loop()
```

Start building...



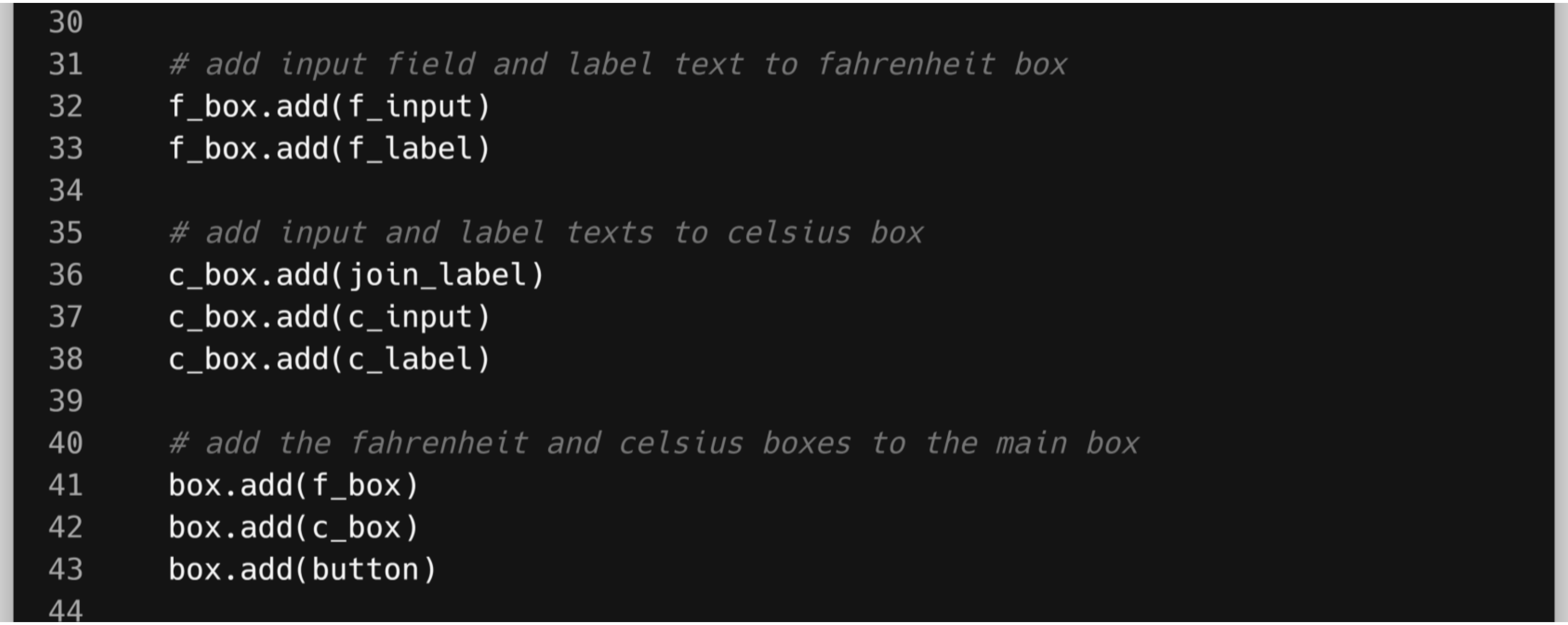
```python
import toga  # toga superpowers
from toga.style.pack import *  # don't try this at prod.


def build(app):

    # make some boxes
    c_box = toga.Box()
    f_box = toga.Box()
    box = toga.Box()

    # making text input fields
    c_input = toga.TextInput(readonly=True)
    f_input = toga.TextInput()

```

Label and Calculate.



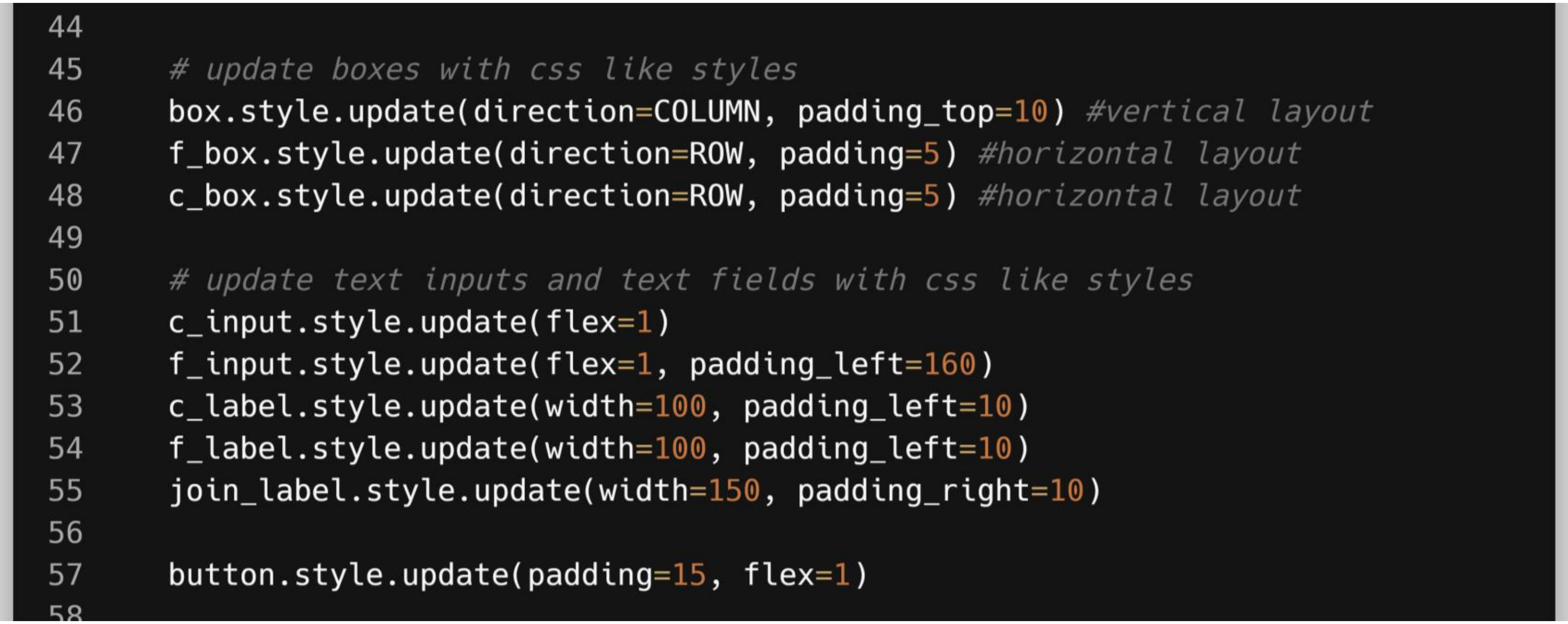
```
    # make some label text
    c_label = toga.Label('Celsius', style=Pack(text_align=LEFT))
    f_label = toga.Label('Fahrenheit', style=Pack(text_align=LEFT))
    join_label = toga.Label('is equivalent to', style=Pack(text_align=RIGHT))

    def calculate(widget): # callback for calculation button
        try:
            # conversion
            c_input.value = (float(f_input.value) - 32.0) * 5.0 / 9.0
        except
            c_input.value = '???'  # hacky error handling FTW

    # create a 'Calculate' button that takes calls the calculate callback
    button = toga.Button('Calculate', on_press=calculate)
```

Add widgets to boxes



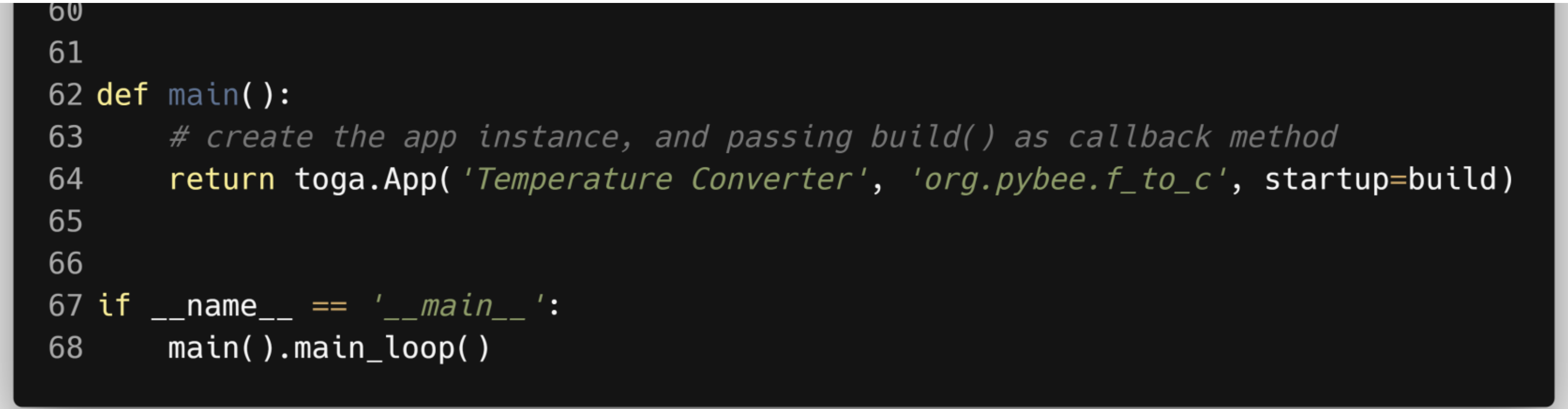
```
    # add input field and label text to fahrenheit box
    f_box.add(f_input)
    f_box.add(f_label)

    # add input and label texts to celsius box
    c_box.add(join_label)
    c_box.add(c_input)
    c_box.add(c_label)

    # add the fahrenheit and celsius boxes to the main box
    box.add(f_box)
    box.add(c_box)
    box.add(button)
```

Style it up.



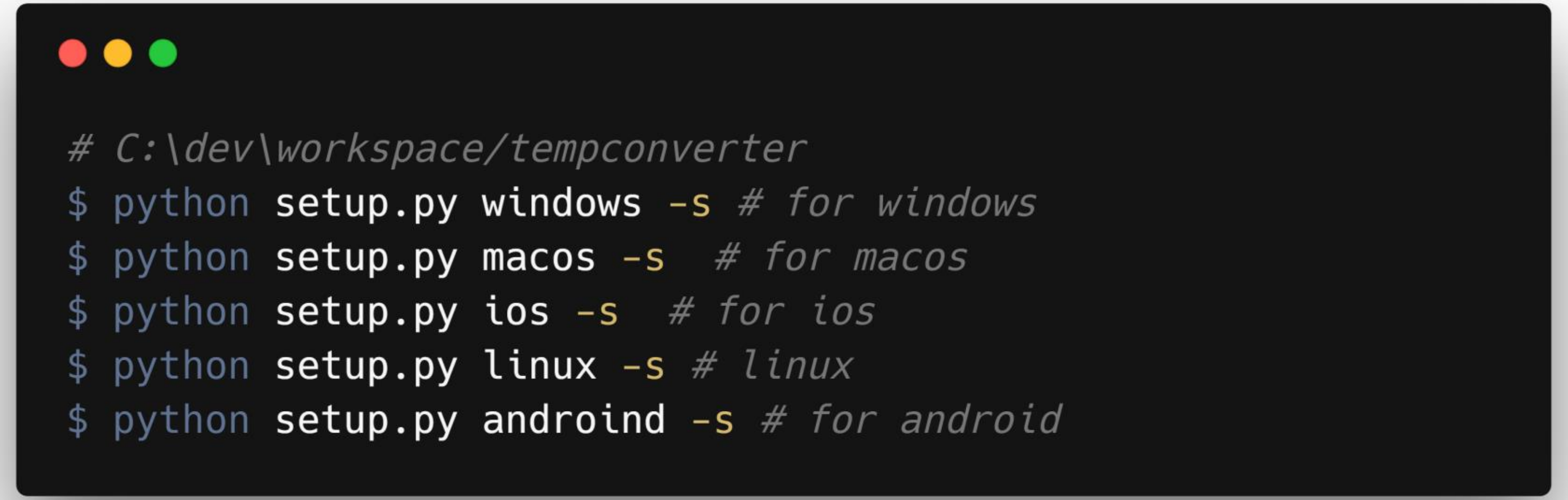
```
    # update boxes with css like styles
    box.style.update(direction=COLUMN, padding_top=10) #vertical layout
    f_box.style.update(direction=ROW, padding=5) #horizontal layout
    c_box.style.update(direction=ROW, padding=5) #horizontal layout

    # update text inputs and text fields with css like styles
    c_input.style.update(flex=1)
    f_input.style.update(flex=1, padding_left=160)
    c_label.style.update(width=100, padding_left=10)
    f_label.style.update(width=100, padding_left=10)
    join_label.style.update(width=150, padding_right=10)

    button.style.update(padding=15, flex=1)
```

Instantiate app.



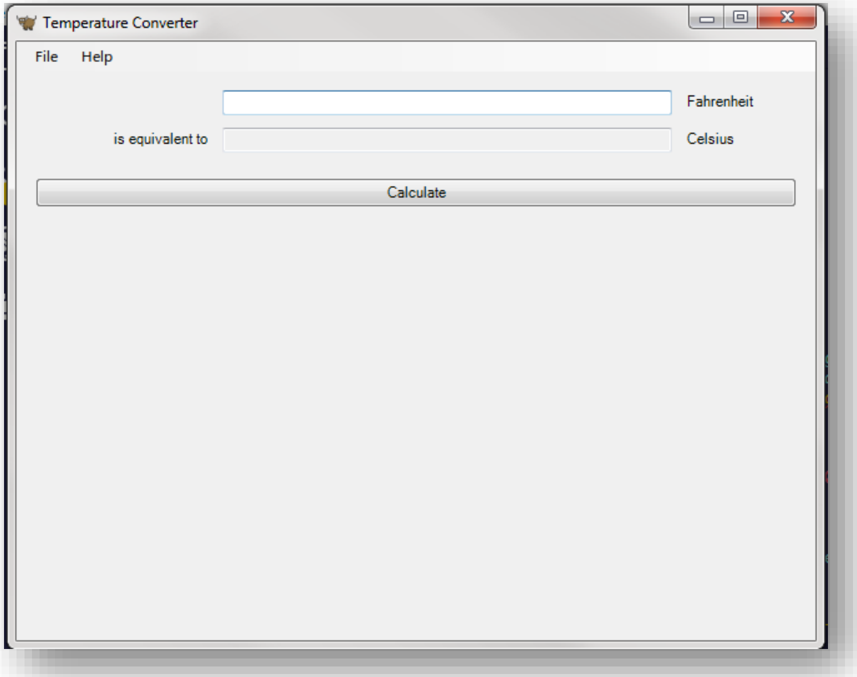
```python


def main():
    # create the app instance, and passing build() as callback method
    return toga.App('Temperature Converter', 'org.pybee.f_to_c', startup=build)


if __name__ == '__main__':
    main().main_loop()
```

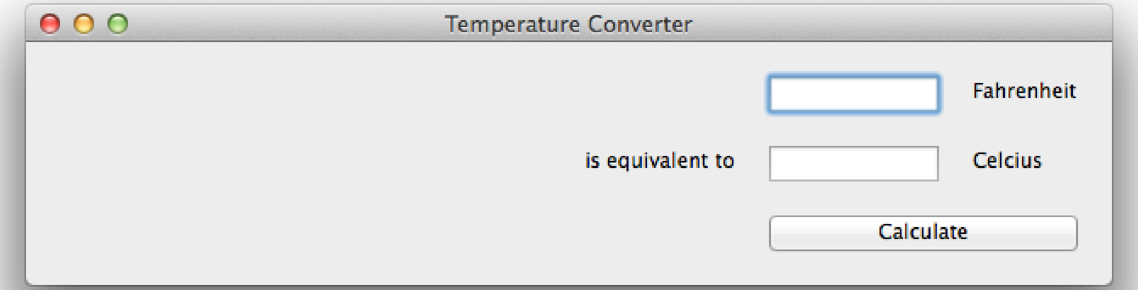
Run it!



```
# C:\dev\workspace/tempconverter
$ python setup.py windows -s # for windows
$ python setup.py macos -s  # for macos
$ python setup.py ios -s  # for ios
$ python setup.py linux -s # linux
$ python setup.py androind -s # for android
```

Tada!


Temperature Converter
File
Help
Fahrenheit
is equivalent to
Celsius
Calculate


Temperature Converter
Fahrenheit
is equivalent to
Celcius
Calculate

Work in progress,

but you can help!

Want to contribute to BeeWare? **Anyone is welcome** to help out!

What can you do to help?

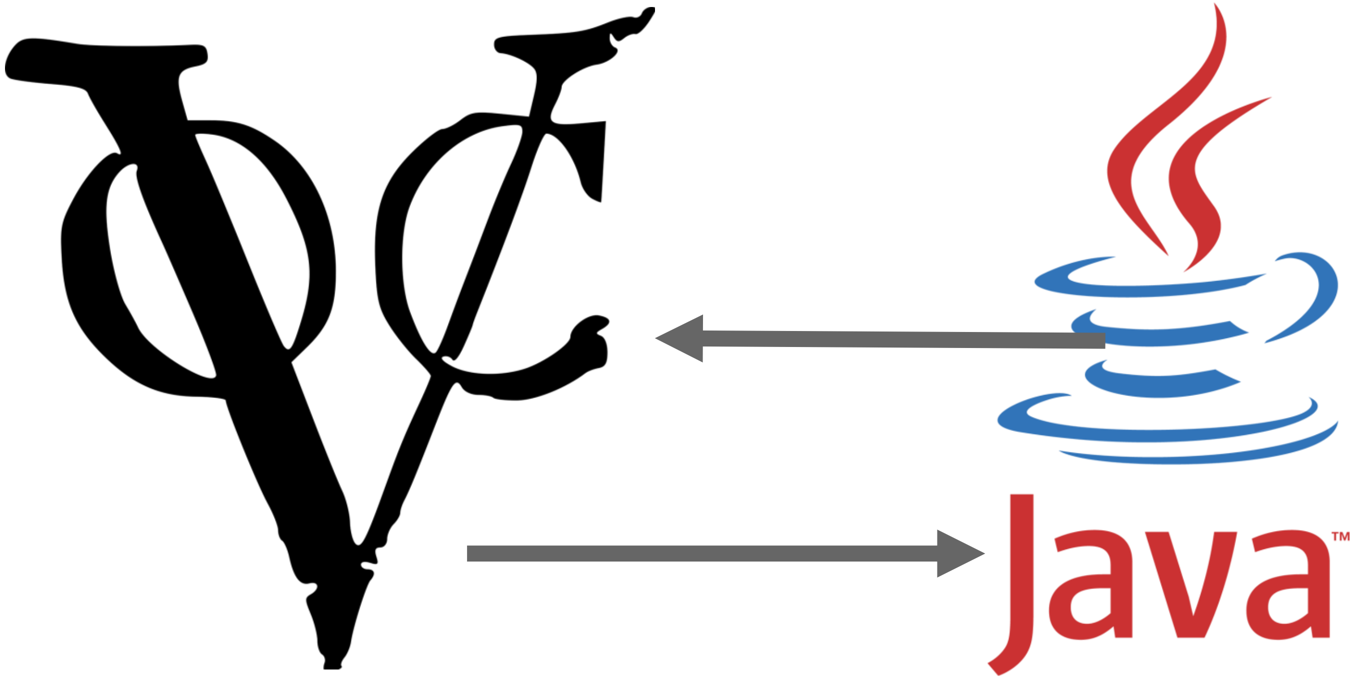
Python & colloseum

https://github.com/pybee/colosseum

GUI Programming

https://pybee.org/project/projects/libraries/toga/

Android and Java



JavaScript and Browsers

Batavia

Tutorials & Usage

First time contributors' guide

https://pybee.org/contributing/how/first-time/

Once you've poked about a bit in the tutorials, check out the BeeWare issues marked first-timers-only

Thank You!

Questions?