TEST DRIVEN PYTHON!

WHO IS THIS FOR?

- Beginning coders
- Aspiring polyglots
- Teachers

OBJECTIVES

- Teach python basics
- Progressively harder lessons
- Teach TDD principles by doing

INITIAL DESIGN:

Test Driven Python

github

Home

Lessons:

- Lesson 0: Hello World
- Lesson 1: Greetings
- Lesson 2: FizzBuzz
- Lesson 3: Calculator
- Lesson 4: Temperature
- Lesson 5: Pig Latin
- Lesson 6: Books
- Lesson 7: Anagrams

Credits

FizzBuzz

Fizzbuzz is a common coding challenge that teaches control flow and use of the modulus operator.

Some FizzBuzz challenges you can find online will have you print out the result for each number from 1 to x. In this challenge, however, we'll save all of the 'Fizzbuzzed' results to a list and return the list at the end of the function.

Lesson objectives

- Understand how to assign variables within a function
- Understand how to use the mouduls operator
- Get comfortable with basic control flow
- Understand how to initialize and add items to a list

Modulus operator

Modulus is a useful mathematical operation available in Python using the `%` symbol. It returns the remainder of two numbers when you divide x by y. For example:

```
10 % 2 # == 0 because 10 is divisible by 2
8 % 3 # == 2 because 2 is the remainder of 8 / 3
```

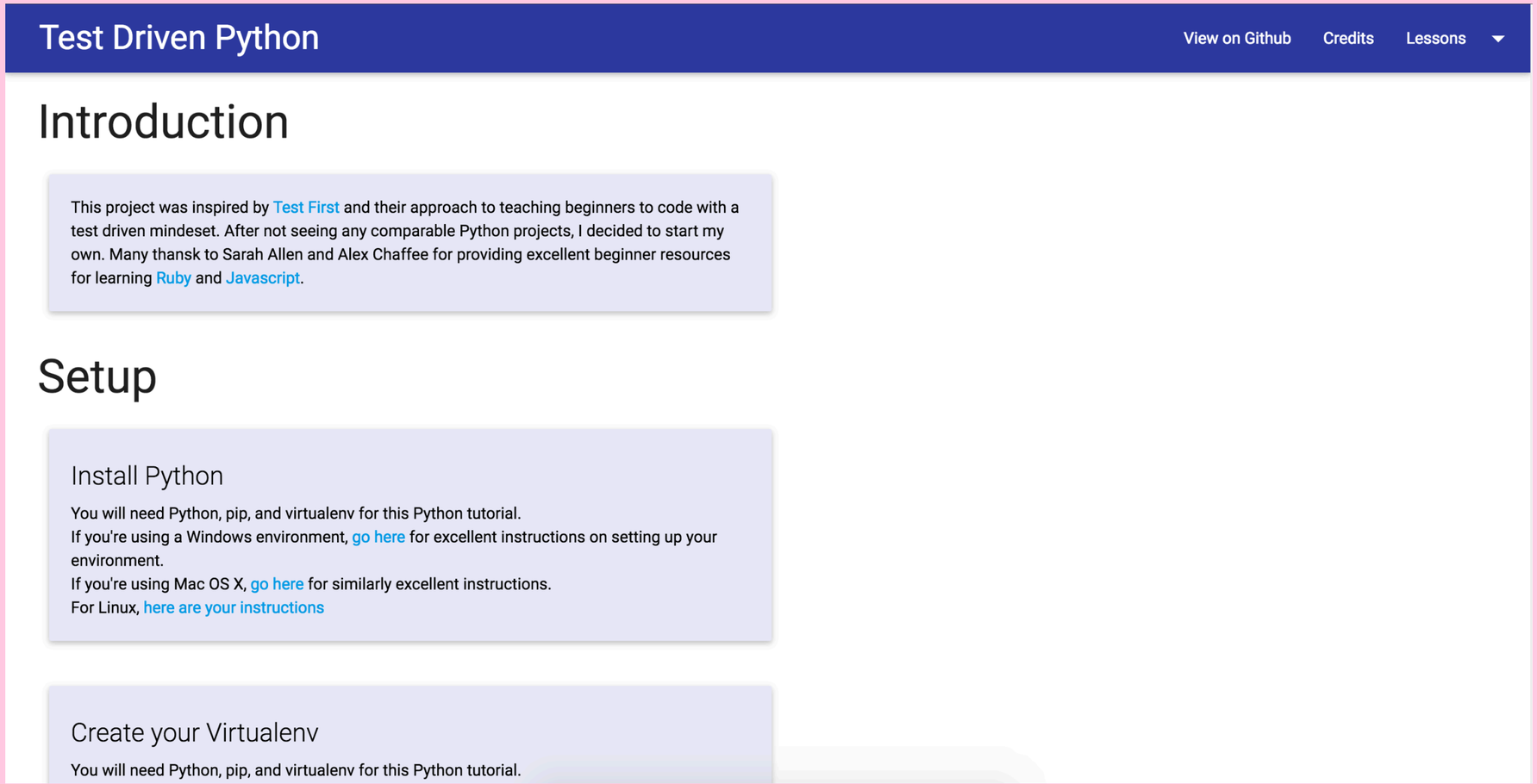
TESTS!

```
class FizzBuzzTestCase(unittest.TestCase):
    def test_fizzbuzz_returns_list(self):
        twelve = fizzbuzz.fizzbuzz(12)
        self.assertIsInstance(twelve, list)


    def test_fizzbuzz_list_is_the_correct_length(self):
        twelve = fizzbuzz.fizzbuzz(12)
        self.assertEqual(len(twelve), 12)
        eighty = fizzbuzz.fizzbuzz(80)
        self.assertEqual(len(eighty), 80)

    def test_fizzbuzz_handles_multiples_of_3(self):
        up_to_twelve = fizzbuzz.fizzbuzz(12)
        self.assertEqual(up_to_twelve[2], "Fizz")
        self.assertEqual(up_to_twelve[5], "Fizz")
        self.assertEqual(up_to_twelve[8], "Fizz")
        self.assertEqual(up_to_twelve[11], "Fizz")

    def test_fizzbuzz_handles_multiples_of_5(self):
        up_to_twenty_five = fizzbuzz.fizzbuzz(25)
        self.assertEqual(up_to_twenty_five[4], "Buzz")
        self.assertEqual(up_to_twenty_five[9], "Buzz")
        self.assertEqual(up_to_twenty_five[19], "Buzz")

    def test_fizzbuzz_handles_multiples_of_3_and_5(self):
        up_to_eighty = fizzbuzz.fizzbuzz(60)
        self.assertEqual(fizzbuzz[14], "FizzBuzz")
        self.assertEqual(fizzbuzz[29], "FizzBuzz")
        self.assertEqual(fizzbuzz[44], "FizzBuzz")
        self.assertEqual(fizzbuzz[59], "FizzBuzz")

    def test_fizzbuzz_saves_non_fizzbuzzable_integers_to_list(self):
        up_to_seventy_three = fizzbuzz.fizzbuzz(73)
        self.assertIsInstance(up_to_seventy_three[0], int)
        self.assertEqual(up_to_seventy_three[0], 1)
        self.assertIsInstance(up_to_seventy_three[12], int)
        self.assertEqual(up_to_seventy_three[12], 13)
        self.assertIsInstance(up_to_seventy_three[-1], int)
        self.assertEqual(up_to_seventy_three[-1], 73)
```

CONFERENCE ACCOMPLISHMENTS

- Regained momentum on project
- Visual redesign (Thanks Stephanie!)
- Decided on next several lessons
- Set next steps

NEW DESIGN!


Test Driven Python
View on Github
Credits
Lessons
Introduction
This project was inspired by Test First and their approach to teaching beginners to code with a test driven mindeset. After not seeing any comparable Python projects, I decided to start my own. Many thansk to Sarah Allen and Alex Chaffee for providing excellent beginner resources for learning Ruby and Javascript.
Setup
Install Python
You will need Python, pip, and virtualenv for this Python tutorial.
If you're using a Windows environment, go here for excellent instructions on setting up your environment.
If you're using Mac OS X, go here for similarly excellent instructions.
For Linux, here are your instructions
Create your Virtualenv
You will need Python, pip, and virtualenv for this Python tutorial.

NEXT STEPS

- Flesh out lessons
- Get feedback from coding newbies
- Get feedback from non-Python coders
- Get feedback from other Python teachers
- Schedule Chicago PyLadies intro to python workshop

LINKS

- These slides: github.com/thejessleigh/talks
- TDP Repo: github.com/thejessleigh/test_driven_python

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