Google Summer of Code 2021

Organization: Python Software Foundation

Sub-Organization: Python Argentina

Project: PyZombis

Continue the implementation of the course in the Runestone environment

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Python Argentina: <PyZombis project> Continue the implementation of the course in the Runestone environment

About me

Hi! My name is Leonardo Cumplido, I am 18 years old and I am from Mexico City. My GitHub username is LeoCumpli21.

I am about to graduate from the Tecnológico de Monterrey high school, in May. I am already accepted into ITESM University, in Campus Guadalajara, to study data science for 4 years. ITESM / University / 08-2021 / 05-2025

I like defining myself as an independent and self-motivated student. A fundamental part of my project of life is to be able to facilitate Mexico and Latinoamerica the same opportunities other countries have regarding software development. That is why, although I am young, PyZombis project seems to be an excellent opportunity for me to begin this journey. Its philosophy of creating tools for Spanish speakers so that they can introduce themselves into the programming world is in perfect syntony with my project of life. For this reason, my basic to intermediate Python programming expertise and my willingness to actively acquire new software skills are ideal to become a collaborator in this project and to help make it a reality for everyone.

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Here a link to my resume

My native language is Spanish.

Code contribution

1. PR #67 to solve issue #61: In it, I suggested using an alternative library for the code to run appropriately in Runestone.
2. PR #68 adding unit-test for automatic grading in lecture TWP18 as stated on issue #7.

3. PR #72 fixing and improving quiz 9.

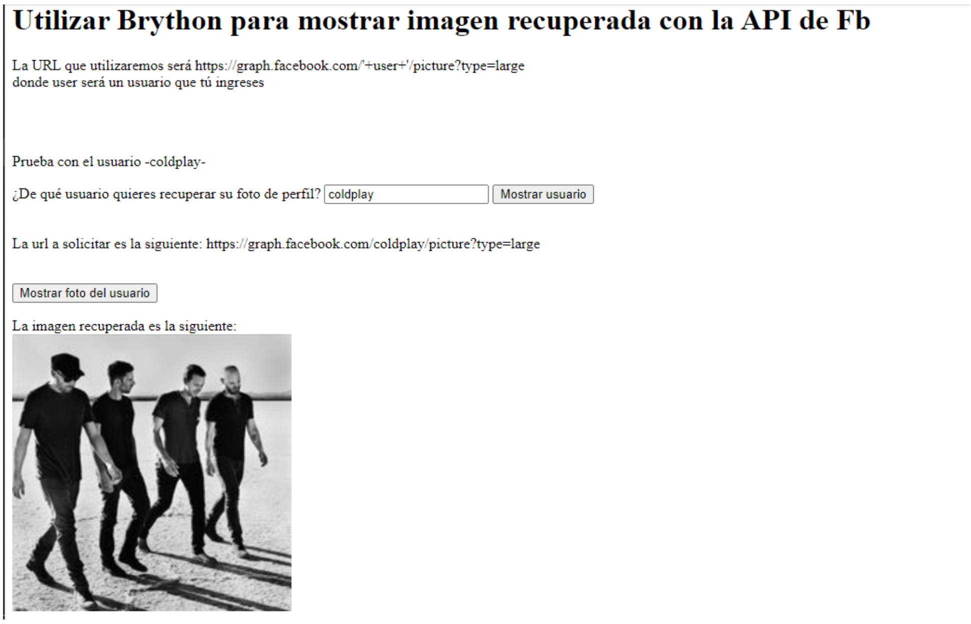
Project Abstract

Continue with the correct implementation of *Python para Zombis* course in Runestone Academy. For those lectures in which some code won't run in the platform due to the modules they use, I have in mind replacing them to teach other modules. The expected outcome is to have the existing lectures fully functional in Runestone with various exercises with automatic grading, have created new lectures teaching other modules, and have implemented Brython code where necessary.

Detailed Description

NOTE: I intend to use Brython where needed because Brython is designed to replace Javascript as the scripting language for the Web. Instead of Javascript, you will find Python code in a script of type "text/python". https://brython.info/index.html

- ❖ The first milestone will be having lessons 1 (Variables y entrada de datos) to 14 (Revisión general 3) fixed. By fixed I mean:
    - ➢ Make every snippet work correctly.
    - ➢ Create new practice exercises within these lessons if needed, with automatic grade using unit-test, as the quizzes already do; like I did on PR #68.
    - ➢ Quizzes 1, 2, 4 and 8 are missing, so during this period I will add them; if translation from Portuguese to Spanish is not clear, I will create similar exercises.
    - ➢ Finally, all static snippets will be changed into ActiveCode, and theory may be added if time allows me to.
- ❖ For the second milestone, I will focus on the rest of the lectures. Most of them require modules that are not supported by the in-web version of Python in Runestone.
    - ➢ Facebook's API lesson needs to be fixed. I can accomplish that by using Brython (cause Runestone does not allow retrieved images to be shown):



Utilizar Brython para mostrar imagen recuperada con la API de Fb

La URL que utilizaremos será https://graph.facebook.com/'+user+'/picture?type=large
donde user será un usuario que tú ingreses

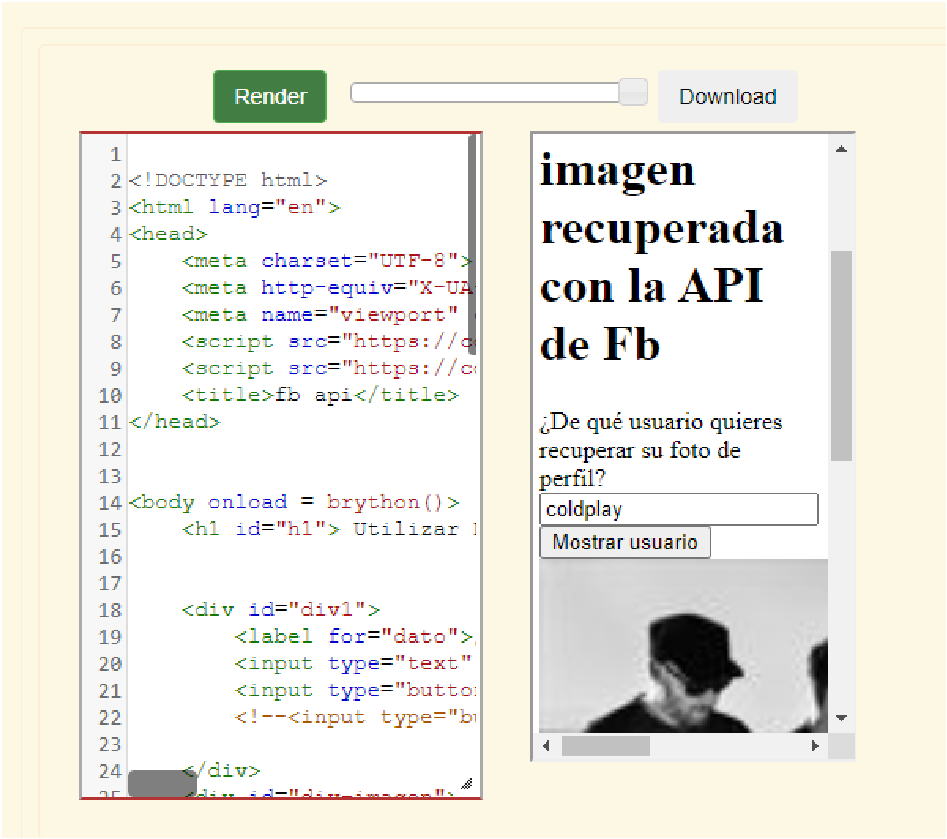
Prueba con el usuario -coldplay-

¿De qué usuario quieres recuperar su foto de perfil? coldplay

La url a solicitar es la siguiente: https://graph.facebook.com/coldplay/picture?type=large

La imagen recuperada es la siguiente:

➢ Same Brython code into an HTML snippet in Runestone



```

<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA
    <meta name="viewport" 
    <script src="https://c
    <script src="https://c
    <title>fb api</title>
</head>


<body onload = brython()>
    <h1 id="h1"> Utilizar I


    <div id="div1">
        <label for="dato">,
        <input type="text"
        <input type="butto
        <!--<input type="bu

    </div>
    <div id="div-imagen">
```

imagen recuperada con la API de Fb

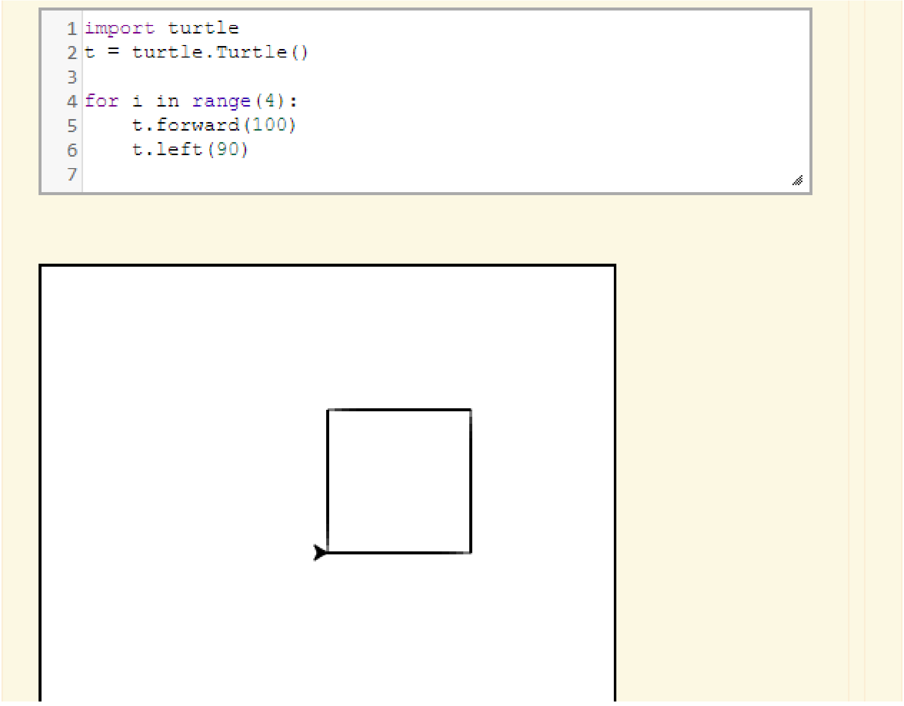
¿De qué usuario quieres recuperar su foto de perfil?

coldplay

➢ Create another lesson using another API which exercises can completely be done in Runestone: for example the iTunes API or the tastedive API.

➢ *Banco de datos, Interfaz gráfica, MVC, DJ Mix 1, DJ Mix 2 revisión orientada a objetos, Pygame* and *Introducción al desarrollo web* lessons do not run in

Runestone due to the modules they use. Instead of them, I will implement a lesson teaching the built-in Turtle Graphics library from Runestone.

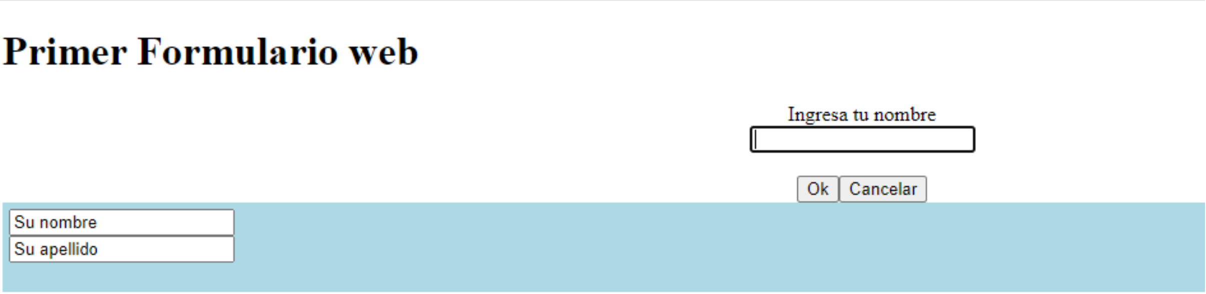


```
import turtle
t = turtle.Turtle()

for i in range(4):
    t.forward(100)
    t.left(90)

```

- ➢ The lesson teaching Exceptions also needs improvement and I will tackle that as well during this period.

❖ For the final milestone:

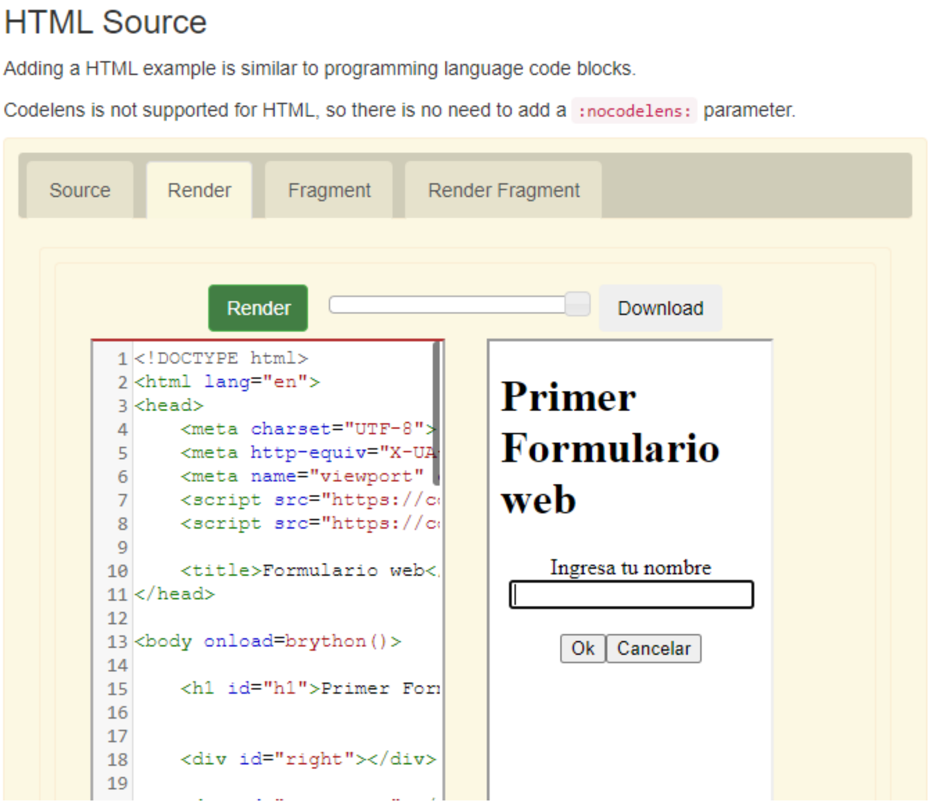
- ➢ I will implement a module on tests, using the test library from Skulpt cause it captures the overall idea of testing your code, and it is implemented in Runestone.
- ➢ I will also make a lecture on “formularios web” using Brython, inspired by the exercises from the final lecture, *Introducción al desarrollo web*, and from the MVC lecture.
    - Proof of concept



Primer Formulario web

2 ways of requesting the same thing - using Brython

- Same code into an HTML snippet in Runestone:



HTML Source

Adding a HTML example is similar to programming language code blocks.

Codelens is not supported for HTML, so there is no need to add a `:nocodelens:` parameter.

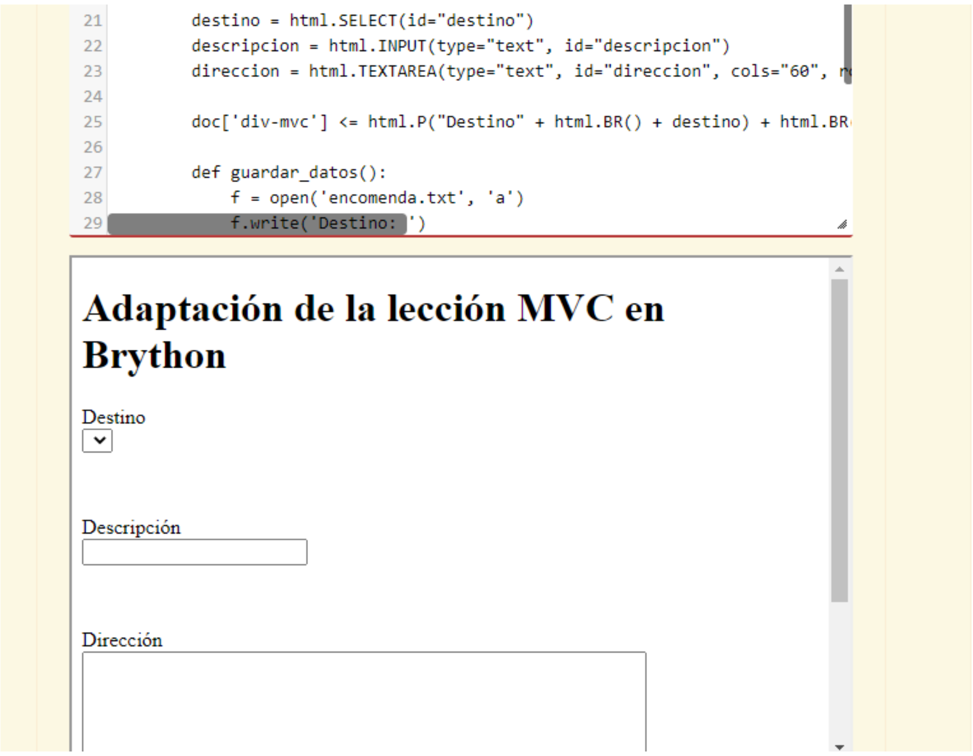
```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA
    <meta name="viewport"
    <script src="https://c
    <script src="https://c

    <title>Formulario web<
</head>

<body onload=brython()>

    <h1 id="h1">Primer For


    <div id="right"></div>

```

Primer Formulario web

Ingresa tu nombre

➢ The expected outcome here will be making an *email contact form*, a *quiz form*, and the form from the MVC lesson but instead of Tkinter, Brython.

- MVC lesson form proof of concept on Brython:



```
        destino = html.SELECT(id="destino")
        descripcion = html.INPUT(type="text", id="descripcion")
        direccion = html.TEXTAREA(type="text", id="direccion", cols="60", r

        doc['div-mvc'] <= html.P("Destino" + html.BR() + destino) + html.BR

        def guardar_datos():
            f = open('encomenda.txt', 'a')
            f.write('Destino: ')
```

Adaptación de la lección MVC en Brython

Destino

Descripción

Dirección

- ➢ Finally, in *Introducción al desarrollo web* there is a link to a sudoku solver on web2py. If time allows me to, I can make a sudoku solver on Brython. I already have a sudoku solver code (see my resume): I can adjust it to Brython and place it into an HTML snippet in Runestone. This could be sort of a "final project" for people who have completed the PyZombis course.

Weekly timeline

Community Bonding (May 17-June 7):

Before coding starts:

- I intend to look at both the Runestone's Guide and the ReST documentation for me to understand how to read .rst files and how to write and modify them correctly. I will also read Brython documentation to learn how to use Brython. Finally, I will also take a look at the Style Guide for Python Code to follow a pythonic way in which I write all Python code the following weeks.

NOTE: Every week: the necessary typos will be fixed. I will change static snippets into ActiveCode when necessary and I will also add practice exercises.

- Week 1 (June 7-14):

Work on lessons 1, 2, 3, 4, 5, and implement quizzes 1 & 2

- Week 2 (June 14-21):

Work on lessons 6, 7, 8, 9, 10, and implement quizzes 4 & 8

- Week 3 (June 21-28):

Work on lessons 11, 12, 13, 14. If I finish early, I'll start with next week's assignments

- Week 4 (June 28-5):

Fix the Fb API lesson; Brython. Make new exercises with another API directly in Runestone

- Week 5 (July 5-12):

Fix and improve the Exceptions lesson.

- Week 6 (July 12-19):

Work on implementing a lesson teaching Turtle graphics library.

  - July 12-16: submit first evaluation

- Week 7 (July 19-26):

If the turtle lesson is finished, check previous work and start the next week's assignments.

- Week 8 (July 26-2):

Implement a lesson teaching tests and their importance. Use test library (from Skulpt) cause it is easy to use and the general idea about testing your code can be taught with it.

- Week 9 (August 2-9):

Work on *formularios web* using Brython: Make both the email contact form template and the quiz form. Reproduce the MVC Tkinter lesson with Brython.

- Week 10 (August 9-16):

Finish *formularios web*. Make a sudoku solver in Brython. Check all previous work.

Other Commitments

My University classes start the first week of August, meaning that in the final 2 weeks of GSoC I will already be taking classes. As they are the first two weeks of classes, they presumably won't mean a heavy workload.