Flask Python (1 – Starting out)

Tekkie Tools

For this overview section of the course you have some options for developing you code. You can use some online editing tools such as https://repl.it but this can be a bit slow. There are plenty of other online html tools out there for basic html development or you can use Notepad++ which I do!

It might be worth installing python 3.8 on your computer if you haven't done so already. Make sure you tick the "PATH" box so that library installs work smoothly!

Eventually, we will be using https://github.com (sign up online and download the desktop app) and https://pythonanywhere.com which will host you final website and database.

Overview

For this course you should have (or eventually will have) a working knowledge of:

Python – basic constructs, classes and libraries

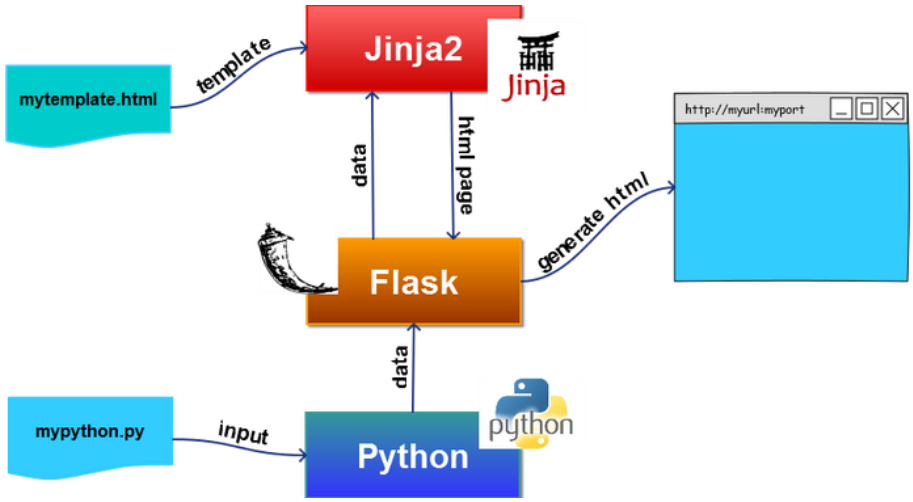
HTML – use of tags including forms

CSS – Bootstrap and CCS

Databases - MySQL

Flask is a python API (Application Programming Interface) and it is used by some of the biggest companies in the world such as Samsung, Netflix and Uber.

As you can see below, we will be producing a web application using python, flask with the Jinja2 template rendering engine.



At this point if all seems a little complex and daunting do not worry, we will take each of these one step at a time and by the end you will have a dynamic, responsive website up and running.

What follows on from this is up to you, but you may wish to delve into the more exotic Django in due course. But for the moment flask is nice and lightweight and quite easy to learn so you can get up and running.

Task 1 - HTML

Let's begin with some basic HTML as that is what we eventually want to output. Using some resources and your previous knowledge try the following task:

Create a web page using standard HTML tags which asks a user to register for a website by giving their First Name, Surname, email address and password. There will be a button on the page which will submit the form. You will need the <label> <input>, <form> and <button> tags in addition to the usual <p>, <h2>, tags etc.

For reference this site may be helpful to remind you about basic tags.

https://www.w3schools.com/html/

Task 2 - Python

To brush up on your python, write a python program which does the following

- Defines the class (Users) with attributes *first_name* (string) *surname* (string), *email* (string) and *password* (string). It should have a constructor function which allows the attributes to be set when an object is created.
- There should also be two functions (methods) of the class:
    - *check_email (email):* Checks the *email* attribute of the class is in the correct format and returns true if it is and False if it isn't. [You can define the format]
    - *check_password (pass):* Checks the *password* attribute to ensure it is between 6 and 12 characters in length, contains a lowercase letter, contains an uppercase letter and contains a digit between 0 and 9.

Task 3 - CSS and Bootstrap

In order to make or websites responsive and attractive we will need a combination of HTML and bootstrap. Here is a task:

Write a web page as follows:

- Has a title – Animal Magic
- Has a horizontal navigation bar linking to other zoos etc
- Has two columns. In each column is a "card" that has a title and a picture and some explanatory text on animals and a button to link to a relevant website.
- At the bottom is a message area where you can send your email address and comments on the page to the designer.

Here are some useful tools and tips to help:

Bootstrap

Bootstrap help you create neat designs and responsive web pages. You will need two links for your bootstrap the CSS and the bundle in the page head. Here's the link to get those bits of code.

Introduction · Bootstrap v5.0 (getbootstrap.com)

Try the following features of bootstrap from the documentation. You can just copy and amend the code from the site.

Container – a container which can make the website responsive

Nav and Tabs – navigation bar formatting

Card – see image below

Forms - to collect data

Grids – to set columns and grids and improve layout.

CSS

Use the following attributes to build on bootstrap with some inline css:

padding – put space inside an element

margin - puts space around an element

background-color - sets the background -colour of an element

height - sets the height of an element

text-align - aligns the text left right or centre in an element

Here are some examples to help:

https://www.w3schools.com/css/

Colours

A wheel chart will give the hex code for colours.

HTML Color Picker (w3schools.com)

Images

The following site is useful for free images

Beautiful Free Images & Pictures | Unsplash

Result

Here's what the site might look like. Not perfect but took about 15 minutes to create from scratch!