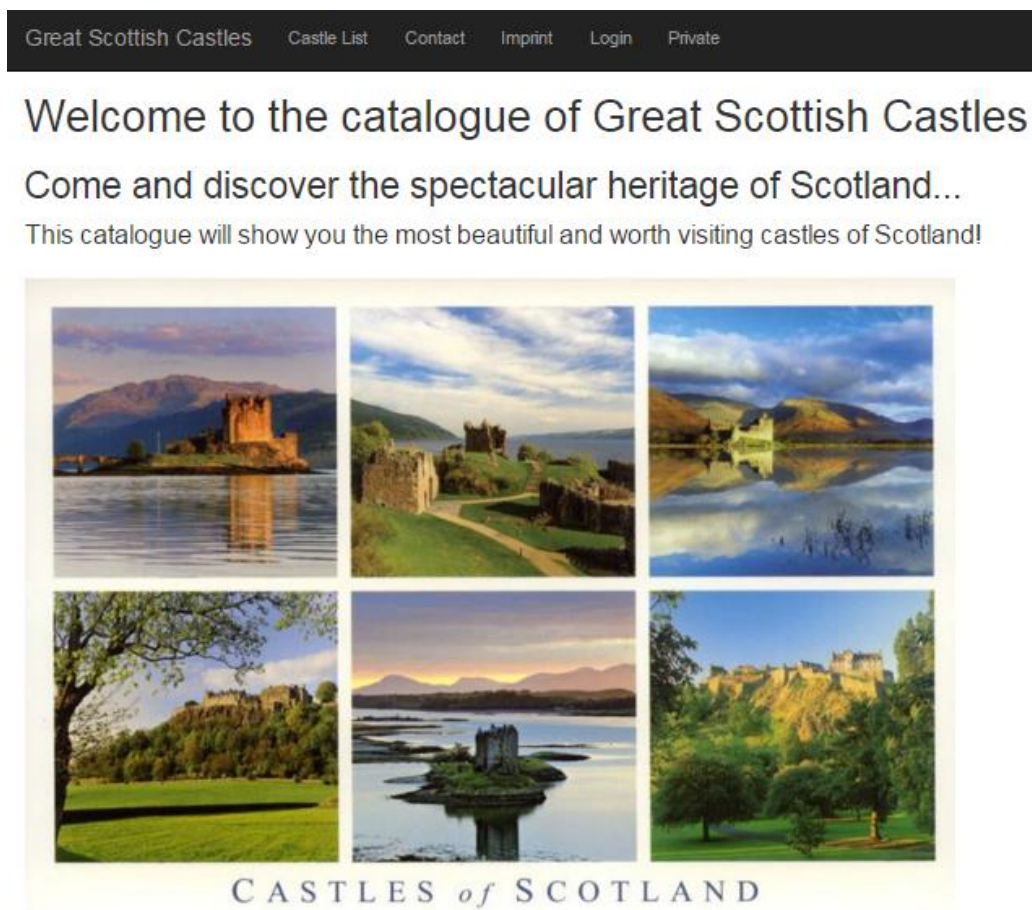


# Advanced Web Technologies - SET09103

Module leader: Dr Simon Wells

## Coursework 1

### Web-app: Scottish Castle Catalogue



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# Introduction

As part of the lecture “Advanced Web Technologies – SET09103” at Edinburgh Napier University, the students’ task was to develop an online catalogue in the style of a web-app. The aim of this coursework has been implemented by using the given learning environment.

This web-app is an online catalogue of the greatest Scottish castles. In Scotland there are more than thousand castles. In every corner of Scotland you can find one. Therefore, it is very difficult for travellers to decide which castle they want to visit. This web-app will give people a short overview about the most famous, worth visiting and spectacular castles of Scotland. The aim is to compare them easily and facilitate the decision of choosing a castle to visit.

The greatest selection is listed on the castle list page together with a small picture of each castle. Furthermore, there exists an own page for each castle. There, interested people can find a description, picture, opening hours, admission fee and the address of the castle to gain essential information in order to plan their trip properly. Furthermore, a link to the official castle website is given for further information, if required.

In order for the castle catalogue to grow and improve, there is also a contact page provided that invites everyone to give requests and feedback about the web-app.

For building the web-app application such tools as Python, Python Flask, Jinja2, HTML, CSS or JS have been used.

# Design

For this webpage a menu template called 'menu.html' is used as templated inheritance. With this template the navigation bar at the top is repeated on every page of the web-app. The main routes can be chosen in this menu ('castle list', 'contact', 'imprint', 'login', 'private') and you can go back to the starting page with the button 'Great Scottish Castles'. All other templates extend this navigation bar from the menu template.

The architecture of the web-app starts with a welcome page. This page can be seen by navigating to 'http://localhost:5000' on the browser. Based on this there are different routes designed.

The route '/castles' leads to a list showing the greatest Scottish castles. Here, the name of each castle is linked to an own page for each castle. The route in this case is as follows: '/castles/castlename'. Please be aware that this route is only an example and does not exists. Instead of 'castlename' the name of the castle for example 'blair' has to be written.

Every page of the castles, for example Blair Castle with the route '/castle/blair', contains information about the castle as described in the introduction.

Furthermore, an external link, which opens the official castle website in a new window, is embedded.

The route button 'contact' opens a page for requests and feedback. Users are able to write their ideas or requests in a text field and can submit them to the email address of the web-app developer. A link to '/contact/upload' is given. Here users can upload a picture of their choice and after that a redirection shows the uploaded picture on the path '/contact/upload/userpicture'.

The button 'imprint' contains a page with information about the web-app.

There are two more buttons in the navigation bar. One called 'Login', which leads to the admin login with the path '/login'. With the following credentials it is possible to sign up.

Username: admin              Password: castle

After login, page is redirected to the private sector with the path `'/private'`.

There you get also with the last button `'private'`, but you need to sign up to see the content.

Last but not least, two error pages has been created for the 404 error and the 401 error. The first one can be tested with the route `'/force404'` or with any not existing route like `'/errortest'`. The error page shows that the entered path does not exist and one is asked to go back to the welcome page of the web-app. It also contains a direct link leading back to the starting page. The second one will be displayed on the path `'/private'` without logged in before. The user will be required to log in otherwise he is not authorized to see the content. A direct link leading to the `'/login'` path is given as well.

# Enhancements

Because of the limited time frame that is given to work on the coursework, this web-app catalogue includes only a few great castles. Considering the great diversity of Scottish castles, a lot more castles could be integrated and added to this catalogue. Another idea is to given more information and show more pictures of the castles to enable the web page visitor to make a good decision on which castle to visit.

For getting a well overview of each castle's location, it would be suitable to insert a Google Static Maps-API on the respective site.

By the same token it will be a good idea to expand the URL hierarchy with a route like '/region'. But this new site should be prefixed, for example the new path could look like this: '/region/castle/castlename'. There, the user could select first the region he wants to go and after that, he could find the castles in the selected region.

A further idea is to create a list of all Scottish castles which can be seen in a new route. This could be realized by using a database.

In addition, it could be necessary to integrate a search function in the navigation bar, if all of above-named features are fulfilled.

There are an Admin Login for the private section of the web-app. In the moment, there is not really a content on the private site. This should be enlarged.

Also, an user login system could be conceivable, with the aim that users can create their own account for bookmarking their favourite castles and commenting them. Other users could see the comments and take them into consideration.

Finally, the appearance of the web-app could be changed for a better web-design. There are so many ways to do this.

# Critical Evaluation

The critical evaluation of this coursework is very difficult for me. Because I don't know exactly how complex the web-app has to be.

All requirements of the task have been fulfilled. For the chosen catalogue of castles all really needed information has already been implemented.

The web application is easy to operate and self-explanatory, special knowledge to use it is not needed, except using the learning environment.

An important feature of this web-app is that, users are able to provide constructive feedback. This helps to extend the web-app in a direction the users would like to see. With this information the web application should be improved.

As already mentioned, the web application will get more efficient with the named improvements in the enhancements section. For example the missing search function would enrich the catalogue.

# Personal Evaluation

For this coursework it was essential to be familiar with the given learning environment. I never used 'levinux', 'putty' and 'github' before and in the beginning it seemed to be difficult. With the help of the workbook I became acquainted with the learning environment. For example, I understood how helpful it is to organize all routes properly for developing a well-designed web-app.

Equally I didn't know the Python language, Flask and Jinja2. I learned to work with them. During the design of the web-app I had to learn a lot of HTML and CSS tags, there were many things, I used a long time before, but I forgot them.

To create a Login feature was a further challenge that lasted longer than I expected.

The biggest challenge was to create the layout. Therefore I used bootstrap like it is demonstrated in the workbook.

In conclusion, I can say that I tried to keep it simple and simultaneous I learned lot of things of Web Technologies from this coursework and I have enjoyed the work with it. I think I have demonstrated in my web-app all aspects of Flask that we have covered and created a well-designed URL hierarchy as well as associated routes.

Because of the github connection doesn't work on my computer, I couldn't push the files regularly to my github account. So I only pushed the final versions to github at the Kilby Computing Centre.

# Resources and References

## Information about the learning environment:

Workbook (Notes & Workbook 2015-2016) SET09103 – Advanced Web Technologies

<http://chrm.info/dokus/vim-anleitung.txt>

<http://www.fullstackpython.com/flask.html>

## Information about HTML:

<https://wiki.selfhtml.org/wiki/HTML>

<http://www.webmaster-crashkurs.de/externe-links-erstellen.htm>

## Information about the castles:

<http://www.blair-castle.co.uk/>

[http://www.historic-scotland.gov.uk/propertyresults/propertyoverview.htm?PropID=PL\\_047](http://www.historic-scotland.gov.uk/propertyresults/propertyoverview.htm?PropID=PL_047)

<http://www.nts.org.uk/Property/Culzean-Castle-and-Country-Park/>

<http://www.dunvegancastle.com/content/default.asp>

<http://www.edinburghcastle.gov.uk/>

<http://www.eileandonancastle.com/>

<http://www.nts.org.uk/Property/Fyvie-Castle>

<http://www.glamis-castle.co.uk/>

<http://www.stirlingcastle.gov.uk/>

<http://www.visitscotland.com/see-do/attractions/great-scottish-castles>

<http://positivelypostal.com/wp-content/uploads/2015/04/castles.jpg>