Edinburgh Napier UNIVERSITY

Coursework Report

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1 Introduction

The aim of this assignment is to design and implement an online directory which grants the user several intertwining paths to locate their desired entry. The server side elements are handled by flask where the front end is a series of filled in templates. For persistence I have used a single json file containing a series of entries.
This site has been set up to allow any user to access the site and add new entries.
The topic and content of the site was inspired by the recent resurgence of conspiracy content in mainstream media. I have done some research and there are very few sites that allow users to report their UFO sightings.

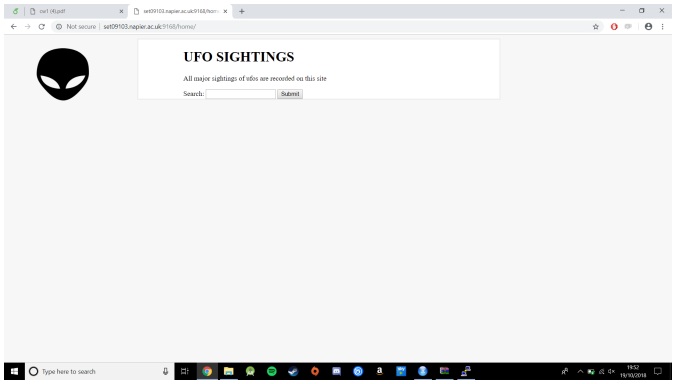

Figure 1: **Home Page** - The home page of my blog)

2 Design

2.1 Server Side

The server aspect of the blog is upheld through Flask. The HTML is generated by several templates that are dynamically populated with 'sighting' objects from a json file.
The entire site was coded on the class development server to ensure that there are no unwanted bugs upon assessment. I initially used the workbook [1] and Flask Documentation [2]to supplement my learning. I followed the tutorials for routing, redirects, error handling, requests and URL variables to create a functioning search feature which allows the user to search for the name of the sighting, the year or the country of origin This then generates a page with the corresponding data in the json file using URL variables. I had previously implemented a redirect only system but that limited me to only hard coded entries so I felt it had to be changed in order for my site to scale. The URL variable method allows user uploaded sightings to be dynamically generated easily and the provided navigation tools make it easy to get where you want to go.

2.2 The HTML

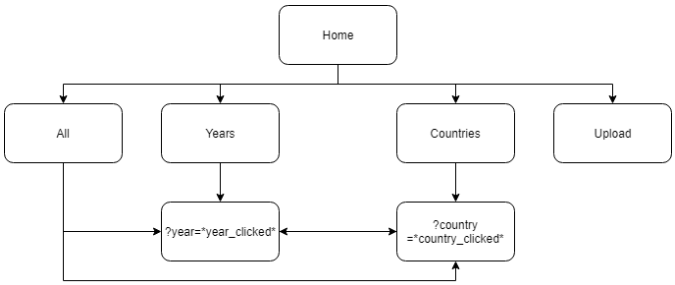

Figure 2: **HTML Navigation Map** - a navigation map representing the URL hierarchy of my site)

There are relatively few URLs in the site, this is because the majority of pages are dynamically generated through URL variables as discussed earlier. I feel that as users mainly use in built navigation as opposed to typing the url in each time this does not make a difference to them. It also made my site scale a lot better than before.
The each page's HTML is generated by Flask templates keeping the same design but showing different information. The main page is simply a search bar with a hovering logo which acts as a drop down menu. The search bar is simply a form with a text box and a button which are taken

All of the relevant information will be centered on the screen with a logo at the left corner. The logo will act as a hidden menu as upon hovering it will display each function available to the user in the form of links. To make use of hidden menus and text I will first inspect websites that I use myself in order to see how they have implemented similar features. I will also make use of the W3 schools tutorials[3].

2.3 The Python

The base of this sites functionality is in three lines of python. Opening a json file, reading from the file and appending to the file. Once this was figured out all I had to do was add a few if statements to allow searching through the data and I had a functioning site.

2.4 The CSS

The design of the site was inspired by Wikipedia's list of ufo sightings [4] where sightings appear as pages in front of a slightly off white background. I have complimented this with

a slightly darker border around the post to give the allusion of three dimensions.
I have decided to use a monochrome theme so not to cheapen the look of the site with colourful text. I feel like there is room for improvement with some highlighting colours to take away from the drag of a monochrome theme while maintaining it's professional look. If I were to change the styling in the future I would consider using bootstrap but as the same template is being used so often these days I decided not to in order to stand out.
As far as the menu items are concerned they have a hovering logo that stays in the top left corner which hides the menu items beneath it. This is done through a container holding the logo and each menu item. The menu is then hidden and upon hovering over the container, the menu is released.
The menu is fixed in position and size where everything else on the page is dynamic. This ensures that the menu is always accessible by the user no matter where on the page they are looking.

Figure 3: **All Sightings** - The display all page)

2.5 The Directory

The entire directory of sightings is held in a single json file along with a list of the years and countries of origin. I chose to use a single json file as opposed to separate files per entry as I found through initial testing that it sped up my search feature and made the site generally quicker.
There are a few problems that this could cause in the future of the site for example if I were to remove a certain post without implementing a delete feature I would have to traverse a large json file to find the correct entry. It also means that if a user knew exactly what sighting they were looking for, it would take longer for the page to load as it has to search through a large file to find the correct file. In this case a file per sighting would be the faster option.
I decided that for the purpose of this site the pros outweigh the cons so I have stuck with the single file solution.
I allow users to add their own sightings with an image. This appends their sighting to the existing json file and saves their image to the static folder. I have not allowed the users to edit the sightings as I feel that feature would be abused by the general public. That is the same reason that I removed the delete function. I may add them again in the future but only behind a log in system that authenticates the user and allows them to edit and delete their own sightings.

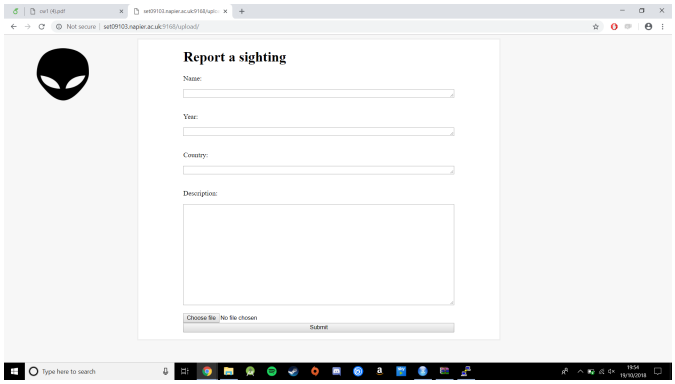

Figure 4: **Upload Page** - The writing page of my site)

3 Implementation

The implementation of this site is very simplistic. Sightings can be viewed, filtered, searched and added all without an sql database. There is no way to format the text like you would in latex. That isn't to say that the site is not well designed and pleasant to use as I have spent a lot of time perfecting the physical design and CSS of the site. I have used a variety of methods such as hover tags, dynamic sizing to make my site look professional and pleasing to the eye. The data it's self has been taken from the Wikipedia list of reported UFO sightings. [4] While this may not be the most accurate or extensive list I feel that on a subject so interpretative as UFO sightings the source it's self does not make a huge effect on the user's perception of the information. For example a user that doesn't believe in UFOs wouldn't place the source of the info as the reason for their disbelief.

I have allowed the user several points of interaction which allow them to navigate the directory easily without fear of getting lost or encountering errors. To ensure this I had potential users try and find sightings using each search method to get their thoughts on each of them. The general consensus was that if you knew exactly what you were looking for to use the search function but the lack of any suggested results mean that unless you know the correct spelling you won't find a thing. In that case they would use the all feature. When users were actively researching and looking for patterns the key feature they used the most was filtering by year or country. It is for this reason that I added that to the search feature along with the existing list of each year and country. If the user could not find something in the search feature they are notified that they could not add what they were looking for they could add it through the upload feature. This use of custom error routing means that the user is never lost in the site. I feel the functionality of the site is it's greatest feature. There are many improvements that can be made to the site which I will discuss bellow however as a beta product I feel that it meets the user's needs and is pleasing to use.

Figure 5: **The Logo** - The logo for my site

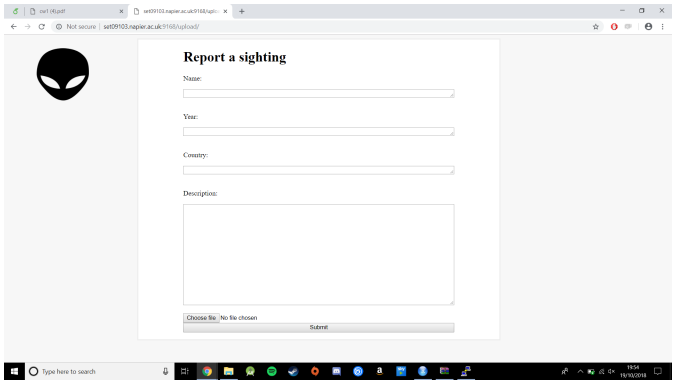

Figure 6: **Upload Page** - The writing page of my site)

4 Implementation Evaluation

4.1 Does It Meet The Spec?

The User is able to navigate throughout a directory of UFO sightings with ease. They have several ways of doing this: either through a search bar where they can search for a given sighting name, country or year, a list of all years in which sightings have taken place, and a list of each country with UFO sightings. This allows the user to see every reported UFO sighting and filter by the year of the sighting and the country of origin. There is also a page that displays all of the reported sightings and if you cannot find what you are looking for you can report one yourself. I feel that the plethora of options for the user to navigate the site make it a pleasant site to use and will satisfy all of the intended user's needs.

The sightings can be viewed easily on the site through the view all feature. This shows each and every UFO sighting reported to the site. The user can then find more information about what else has happened at the given time or place of the sighting by clicking whichever key they want to research for example the time or place and a list of all sightings with that given key will be displayed for their enjoyment. This means that users can easily spend a ridiculous amount of time invested into my site discovering new sightings, discovering patterns and forming their own theories all without the possibility of getting lost or frustrated.

The writing portion of the site has similar styling to Microsoft word with the white text area over the slightly off-white background. It contains the same style sheet and logo for design continuity and brand recognition. through research I have found that users respond better to web pages keeping the same design with only subtle changes. As far as advertising and brand recognition goes, a well designed, subtle, ever present logo has proved one of the most effective ways to drill your brand, site or application to your user to keep them coming back. That is why I have implemented similar ideology for my directory.

The Server persists the sightings within the json file along with a list of years in which sightings took place and the countries of origin. This is done so that the user can easily search by year or country by either using the search bar, clicking each year or country will take you to every sighting that took place at that given tag. This allows the user to navigate throughout my site with ease using only the tags provided. This is before we start looking into the search feature that allows the user to find exactly what they are looking for.

4.2 Potential Enhancements

I could add a log in system so that only users registered to the site can upload UFO sightings. The reason I have not implemented this is that I believe every voice should be heard in this site and that many potential users would be put off by the need to create an account before describing their UFO sighting in part due to their questioning over the privacy of the site. As you may guess, many of the potential users of this site believe that the government are spying on everything we do and would prefer to remain anonymous. I feel that the absence of a log in system in this instance increases the potential user base of the site. The drawbacks of this is that I have had to remove the delete and edit function as there were no ways for the user to be verified as the author of the sighting. In the future if this site were to scale I would add a log in system so that these functions could return and grant the user more control over their posts.

The formatting of text, while it is adequate for smaller descriptions which this site centers around. If the user were to enter a detailed description it would be displayed without new line characters. This problem was only discovered after I submitted a rather large place holder that you would never see in real life use. Despite this I feel that due to the nature of the content displayed on the site it is not essential and therefor has not been implemented. This is something I would add to the site before it went live though as I would like all accounts of ufo sightings to display seamlessly on the site despite how detailed they are.

5 Personal Evaluation

While I am proud of what I have achieved, I would not let this site go live as there are too many features left on the shelf. The only issue that I am yet to resolve is the lack of ability to format your text. If I were to scale the site I would write a function that would replace new line characters with html tags that are compatible with the template. This would

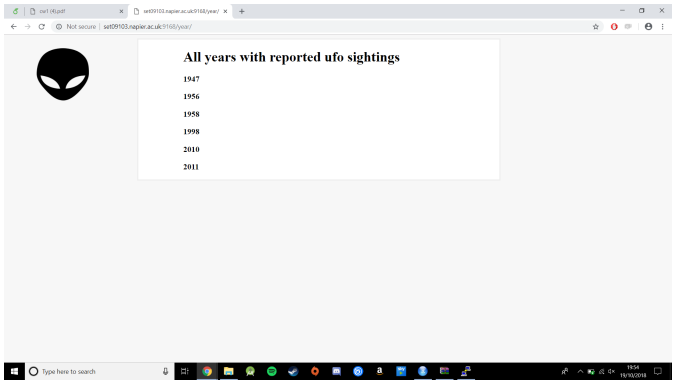

Figure 7: **All Years** - A list of all years in which sightings were reported

allow users to add more detail to the descriptions of each sighting.

Other than that I feel that I have performed well especially in the physical design of the site. The design in terms of user interaction is what I am most proud of. I feel that the research and experimentation payed off and have made the site look pleasing and professional and these skills will stick with me throughout future projects.

The server side aspects of the site were completely new to me and I am pleased that I have managed to develop a site that not only generates the HTML from a series of HTML templates that I didn't even know was possible beforehand but that it also manages to enable you to store and write new entries to the directory all without the use of a database with full persistence on the site. I couldn't be happier with the server side of the site.

I have faced many challenges throughout the making of this site. The most notable of which is to do with editing and deleting of posts. I effectively searched through sightings, changed their attributes and appended to the json file exactly like adding a new entry. The problem came when I had subjects test my site. They had deleted several sightings that I had made and edited sightings with certain obscenities that shall not be repeated. This is obviously not ideal for a site about such a controversial subject like UFO sightings I decided that it was best left out of the site. If I were to add these again in the future I would lock them behind a log in system so that only the administrator and the author could edit and remove posts. I decided that adding this system into the site in its current state would over complicate the directory its self and would alienate many users that do not want to release personal data.

My second challenge was with dynamically shaping the background. to begin with everything was fixed meaning if you have a 1080p display you would find the website pleasing to use but if the site was windowed or used on a lower resolution display, the border will extend past the screen. This makes my site almost inaccessible to anyone with different specifications to myself. As I am unaware what computers my site will run on I had to make the text's border dynamically fill the screen. This caused me a multitude of problems as initially my border would fit in the screen but would shift my text too far to one side. In order to then center my text I had to put my background on a second div two above the body so that it would not affect the layout of the text.

Placing a drop-down menu under my logo was another challenge as it would not allow me to hover over the image id as I then wouldn't be able to select an option whereas if I were to set a div, the border that was surrounding the logo it would be an awkward shape and would still not fit the entire menu.
Eventually I set a div around the logo and drop-down menu, set an on hover which would make the drop down menu appear and removed the border which actually made the site look better.

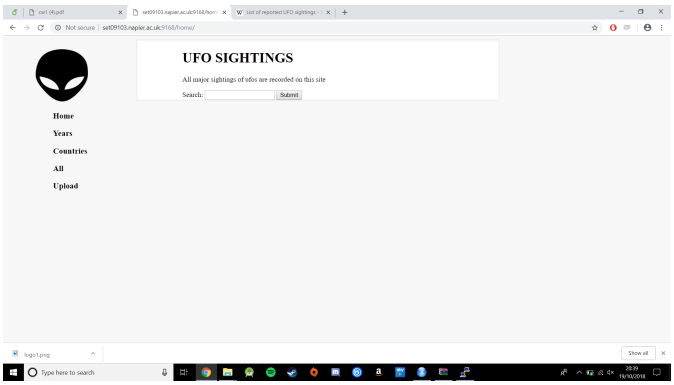

Figure 8: **The Drop down Menu** - The drop down menu)

Possibly the biggest challenge has been searching through the json document to find an entry. I began with a simple collection of pre-made routes however as I began to experiment with user added entries I discovered that this solution was not viable and would not scale well. For this reason I added a query using URL parameters that would search through the json file to find what the user is looking for and display a populated template. This took slightly longer than the routing option and requires case sensitivity but I feel that the pros of the scale-ability outweighs the cons so I stuck with it.
These cons are compensated for by the several other ways for the user to navigate the site for example they can see a list of every year that sightings have taken place and display all sightings that happened in that year. The same can be done with the country of origin. This means that the search engine is more of a secondary solution for navigating the site and is more focused towards users that know what they are looking for.

References

[1] S. Wells, *Advanced Web Tech Workbook*. 2018.

[2] P. Team, "Flask documentation," 2018.

[3] w3schools, "The world's largest web developer site," 2018.

[4] Wikipedia, "List of ufo sightings," 2018.