Coursework Coversheet

School of Geography

FACULTY OF ENVIRONMENT

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To improve your work for next time:

1.

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Justification of mark (using specific text from criteria)

Additional comments

Report and Documentation: Walks on the Wild Side

1. Summary

Version 1.0.0

This documentation aims to provide an overview of the website and mapping application, "Walks on the Wild Side", that was developed for Assessment 2 of GEOG5870M Web-based GIS.

The website aims to map sites in West Yorkshire that people can visit to see wildlife. Users can choose which sites they would like to visit by clicking on markers and looking at the facilities and site types. Additionally users can contribute to the website by providing details on their suggested wildlife area. Finally there is a page with local events and volunteering opportunities to encourage sustainability by giving back to places that are visited.

This site was developed in Notepad++ and tested in Google Chrome Version 74.0.3729.131 (Official Build) (64-bit), Microsoft Edge 44.17763.1.0 and Internet Explorer 11.437.17763.0. The following documentation describes the website and the development process.

This website is still in development.

Acronyms used throughout the document:

Acronym	Name
LCC	Leeds City Council
NT	National Trust
RSPB	Royal Society for the Protection of Birds
YWT	Yorkshire Wildlife Trust
LNR	Local Nature Reserve
SSSI	Site of Special Scientific Interest
SAC	Special Area of Conservation
SPA	Special Protection Area

2. How to Run

These webpages must be viewed from the dialogplus server at: dialogplus.leeds.ac.uk/geog5870/web39/Assignment2/...

- home.html
- discover.html
- contribute.html
- about.html.

Files required to run from the dialogplus.leeds.ac.uk server:

- 4 html files:
  - home
  - discover
  - contribute
  - about
- 3 css files:
  - home_style
  - map_style
  - contribute_style
- 1 javascript file:
  - script
- 2 php files:
  - fetchData
  - setData

These files can also be found on my GitHub:
https://github.com/hannahwh05/Web-based-GIS-GEOG5870M

3. Website Description

Figure 1. Navigation bar

This website consists of 4 pages: home, discover, contribute, about. These are written in HTML5/CSS/JavaScript and PHP including an interactive map of West Yorkshire. Figure 1, shows the navigation bar on the top left of every page, showing the user what page they are currently on and links them to all other pages. Additionally, there are links, on the top right, to the website's social media pages: Facebook, Twitter and Instagram, allowing users to interact with the webpage by

posting pictures of sites they've visited and any events and volunteering opportunities they would like to share. When the user clicks on the icons, they open up in a new tab using the target attribute: target="_blank".

Links to social media pages:

Facebook: https://www.facebook.com/WalksOWS/

Twitter: https://twitter.com/walksows

Instagram: https://www.instagram.com/walksows/

This application does the following:

1. Maps all the sites in West Yorkshire the public can visit to access wildlife. Each marker gives information on the site and its facilities.

2. Allows users to contribute the website by filling in a form, giving information on sites they think should be included.

3. Gives information on events and volunteering opportunities at these sites.

The homepage describes the website and gives some background to the topic. Events and volunteering opportunities are also linked to here. Discover is the main element of the website, allowing the user to view all the sites in West Yorkshire they can visit to access wildlife. There are markers to show the locations of these sites. Clicking on a marker displays a popup showing information on the site and facilities available. Information on each site includes:

- Site name
- Location i.e. longitude and latitude
- Parking availability
- If dogs are allowed
- If there is a play area
- Disabled access
- If there are toilets
- Designation i.e. LNR, SSSI, SAC, SPA, YWT Reserve, National Trust Reserve, RSPB Reserve
- The owner
- Link to website
- If there is a café
- If there is a visitor centre
- If there is a river or lake/pond
- If there is a woodland

This website allows users to discover nature reserves across West Yorkshire and connect with wildlife. In 2014 over half the world's population lived in urban areas, and by 2050 it is expected to reach 66%. People have become increasingly isolated from experiencing nature due to this rapid urbanisation (Wilson, 1984; Miller, 2005). The amount of green space has quickly declined due to exploitation for development. In urban Britain, many green spaces have historical and cultural value, as well as being noted for their biological importance and role in promoting health and wellbeing. As a result, there has been increased attention paid to urban green space (Sandström, 2008).

Natural England's ANGSt (Accessible Natural Green Space Standard) recommends that everyone, should be within 300m of green space of at least 2 hectares in size. It is based upon three principles:

- improving access,
- naturalness (including the biodiversity) and
- connectivity (Natural England, 2010).

Urban dwellers expect good access to green spaces (Rebele, 1994). Green spaces are a fundamental part of cultural life, however, the accessible green spaces are unevenly distributed and there is a significant variation in the quality and facilities available. This was the motivation for developing this website.

4. Development and Issues

4.1   Website Design:

The design of the website and stylisation with css took quite a lot of time. It was important to give the website a professional feel and look, along with an easy flow from page to page with the help of a navigation bar. The addition of social media buttons makes users feel more connected to the site and more likely to get involved and contribute. The aim was to have a clean website using a green colour scheme due to its connotations with nature and wilderness. When the user hovers their mouse over buttons, they turn a more translucent colour to indicate that the button can be clicked. The website is also responsive to window size so the user can snap the page alongside another window.

4.2   Data collection and gathering process:

Finding, collecting and organising the data into a format that could be stored on the database was very time-intensive. Data and their sources are shown in Table 1 below. The area of interest is West Yorkshire. Shapefiles were downloaded from JNCC and RSPB websites. These were added to ArcGIS and polygons that were located within the West Yorkshire boundary were selected. LNRs and YWT reserves were located manually using information on LCC, NT and YWT websites.

Coordinates were obtained using Bing Maps (2019). By going to the relevant websites, information on each site and its facilities were noted and added to the csv file. This csv file was then added as a table to the geog5871 database hosted on the dialogplus server.

Table 1. Data and sources.

Data	Source
SSSI	JNCC (2019)
SAC	JNCC (2019)
SPA	JNCC (2019)
LNR	LCC (2019)
NT	NT (2019)
RSPB Reserves	LCC (2019)/ RSPB (2019) / RSPB Open Data (2019)
YWT Reserves	YWT (2019)/ LCC (2019)

Photos were also taken at several sites which could be added to the social media pages. One photo was used as the logo and to create the markers on the map.

4.3   Technologies used:

A WAMP (Windows, Apache, MySQL/PostgreSQL, PHP) web-service software solution stack was used to compile this website. pgAdmin was used as the administration and development platform for PostgreSQL.

The open source JavaScript mapping library, Leaflet, was used to map the walks. Mapbox was used to create a specific style for the map which can be viewed here: https://api.mapbox.com/styles/v1/gy18hoae/cjvgl9i0j08a91gqd073kg411.html?fresh=true&title=true&access_token=pk.eyJ1IjoiZ3kxOGhvYWUiLCJhIjoiY2pzeWhuY3Q4MGJ5bjQ3cm5naWdmdmhzcyJ9.zFVmqo1q2wvoI1dHIBzoXw#14/37.2686/-112.9425

4.4   Security considerations:

To protect the server from attacks when users upload to the database, the 'setData.php' file has been sanitised and queries have been parameterised.

4.5   Problems encountered:

When adding the website link to the popups it does not link to the website variable, instead it just links to the current page. More research needs to be done into how

to insert a JavaScript result as a link into html. Unfortunately the contribute form does not seem to work giving this error:

"Insert Query failed: ERROR: invalid input syntax for type numeric: "" " from line 45 in the setData.php file.

The array may need to be converted to string and there were some attempts to do this. A login page was also attempted to increase security but was difficult to produce in the time as it required more php coding.

WMS layers were added to the map but it the background covered the mapbox basemap tiles so these were commented out. MaxBounds has also been included to try to set a zooming boundary of Great Britain on the map, however, it does not seem to work.

5. Future Additions

It would be great to add a user location API to the map to zoom in to where user is, improving practicality. Additionally a weather API from the Met Office would add to the user experience. Finally adding images, like those included in the images folder would be good to add to the marker popups to make it clearer what facilities are available at each site, rather than just text.

6. Information about the Developer

I am a current University of Leeds MSc GIS Student (2018-19) learning Web-based GIS. I graduated from University of Southampton in 2016 with a 2:1 in BSc Geography.

Link to my website: https://hannahwh05.github.io/

7. References

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