

USING A NEW CMS SYSTEM FOR CREATING WEBSITE OF BATTERSEA DOGS & CATS HOME

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Information Content Management System

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Information Content Management System

Sharepoint Site URL

 $\underline{https://kmdeducation.sharepoint.com/sites/Battersea/SitePages/ProjectHome.aspx}$

Duplicate Site URL

 $\underline{https://kmdeducation.sharepoint.com/sites/Battersea/SitePages/battersea_home.aspx}$

Presentation Video

https://drive.google.com/file/d/13xAacOwoTX2MWMOgGpeAJUkwhFyYUcG9/view?usp=sharing

1. A review of content management system

1.1 Introduction

A content management system allows users to create, modify and maintain the digital contents. It provides many reliable tools to create and design a website simply without writing "numerous versions of code" (Kadam, 2013). But users can also edit and modify site designs in HTML editor if it is needed. CMS platforms provide users with different site themes and web-parts enhancing the flexibility of website development. Moreover, users can manage workflow and manage tasks with the use of CMS platforms hence it improves efficiency. CMS platforms are designed to connect and work together with team easily. A user can create a site and collaborate with team by controlling permissions and roles within the site.

According to the scenario provided by the coursework, researches on websites about "international charity organisation or NGO" are done. After researching, it is planned to create a duplicate site of "Battersea Dogs & Cats Home" which is an animal rescue center for dogs and cats in UK. Battersea site has good user interface and simple functions. Researches, comparisons and evaluation of potential content management systems will be performed according to the suitable criteria.

1.2 Three potential Content Management Systems

Three potential content management systems for this project are chosen as below. Those are the most popular CMS platforms widely used by many organizations. Advantages and disadvantages of those CMS platforms are discussed based on their flexibility, functions, costs, security and plugins.

- WordPress
- Joomla
- Drupal

1.2.1 WordPress

WordPress is one of the most popular content management system and it provides great flexibility in creating and hosting websites.

Pros

- Wordpress is very user friendly and it allows site owners to create and maintain the website without any coding knowledge.
- Wordpress has more than 45,000 plugins available (Anon., 2020) and it provides great functionality for maintaining website.

- Wordpress is an open-source platform therefore it reduces cost which can be used in further purposes.
- Most of the website created with wordpress are responsive in most platform, i.e., it works well in different devices such as laptops, mobiles, tablets, etc.

Cons

- Being an open-source platform, the plugins are created by different people which can contain malicious functions (subsign, 2017) and making the website vulnerable.
- Wordpress provides limited SEO (Search Engine Optimization) and make poor ranking of website.
- Having a lot of plugins and media contents in the site makes web pages run slow.

1.2.2 Joomla

Joomla is also a popular content management system used for developing websites with multiple purpose.

Pros

- Joomla is very simple and users can easily manage web contents without much coding knowledge. (Gaille, 2016)
- Joomla supports development of website with more than 70 languages. Having many reliable extensions and technical supports are also benefits of using Joomla.
- Joomla is an open-source platform and users can freely manage contents.
- It provides abundance of extensions and those extensions greatly support creating e-commerce websites.

Cons

- Having too much extensions and functions make Joomla complicated to use.
- Joomla has compatibility issues according to very frequent updates (Ivankov, 2018).
- Joomla has security risk of vulnerable to some malwares because of its extensions and plugins.
- Joomla needs a lot of improvements in Search engine optimization (SEO) since it works poorly than other CMS platforms.

1.2.3 Drupal

Drupal is one of the most popular and open-source content management system widely used by many organizations.

Pros

- Drupal is an open-source CMS platform and it allows creating and modifying webpages for free.
- Creating and managing sites is very comfortable because it helps site owners by listing the posts by categories. (Anon., 2017)
- Drupal provide a reliable security for the website since it does not use any free third-party plugins.
- Drupal allows creating responsive web designs that work well in almost every device.

Cons

- Building and modifying sites can be difficult for non-technical persons and it may take much time to fully understand the functions of Drupal.
- It provides poor performance compared to other CMS platforms (e.g., The site takes too much time to load.)
- Using Drupal can be complicated since there are many difficulties when making installation and updating

1.3 Comparison of three CMS

According to pros and cons discussed above, three content management systems are compared in the following table. The CMS platforms are rated by Bad(B), Normal(N), Good(G).

	WordPress	Joomla	Drupal
Functionality and user-friendliness	G	G	N
Cost	G	G	G
Flexibility with devices	G	N	G
Security	N	В	G
Speed of work	N	N	В

1.4 Summary

According to pros and cons discussed above, all of three CMS platforms are open-source and work flexibly in creating websites. Wordpress provides numerous plugins and Joomla has great efficiency in languages and supports. Drupal provides comfort in managing webpages and it is flexible with any devices. But Wordpress and Joomla have security risk according to numerous plugins. Drupal's security system is reliable but its performance is poor compared to other CMS platforms.

In this project, Microsoft Sharepoint will be used to create an international charity organization or NGO site. Site pages and site assets can be managed using Sharepoint site and it provides reliable planning tools such as Gantt Charts, countdown, and so on. To manage source code of the site, "Sharepoint Designer" will be used as text editor. Since sharepoint doesn't allow creating an entry forms, Microsoft PowerApp will be used in this project.

2. Testing

2.1 Test Plan

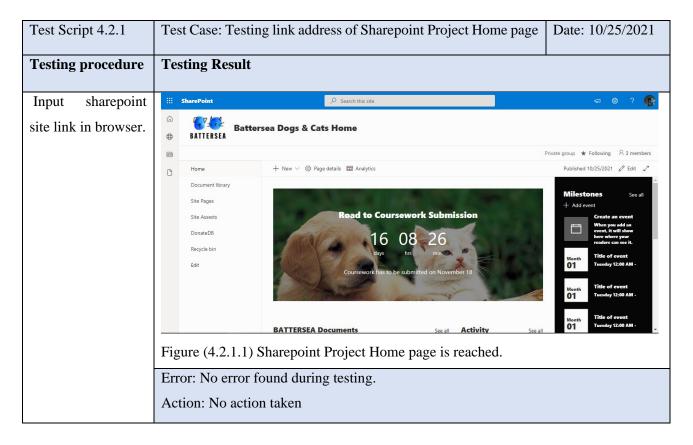
Before evaluating the duplicated site, all the links, buttons and functions in site pages will be tested. A plan for testing will be created in details and testing will be perform according to the test plan.

No.	Testing	Process of testing	Expected Result
1.	Testing link address of	Input sharepoint site link in	Sharepoint team site is reached
	sharepoint team site	browser.	
2.	Testing link address of	Input duplicated site link in	Duplicated site home page is
	duplicated site	browser.	reached.
3.	Testing all active links in	Click active links in	Respective pages of the links are
	navigation bar.	navigation bar.	reached.
4.	Testing inactive links in	Click on inactive links in	Under development page is
	navigation bar.	navigation bar.	reached.0020
5.	Testing buttons in home page.	Click and hover on buttons	Hover effects in all buttons should
		in home page.	work correctly.
6.	Testing buttons in dogs home	Click and hover on buttons	Hover effects in all buttons should
	page.	in dogs home page.	work correctly.
7.	Testing buttons in cats home	Click and hover on buttons	Hover effects in all buttons should
	page.	in cats home page.	work correctly.
8.	Testing buttons in dogs rehome	Click and hover on buttons	Hover effects in all buttons should
	page.	in dogs rehome page.	work correctly.
9.	Testing buttons in cats rehome	Click and hover on buttons	Hover effects in all buttons should
	page.	in cats rehome page.	work correctly.
10.	Testing buttons in Jobs page.	Click and hover on buttons	Hover effects in all buttons should
		in Jobs page.	work correctly.
11.	Testing buttons in about us	Click and hover on buttons	Hover effects in all buttons should
	page.	in about us page.	work correctly.
12.	Testing buttons in support us	Click and hover on buttons	Hover effects in all buttons should
	page.	in support us page.	work correctly.
13.	Testing "Back to home" button	Click on "Back to home"	Home page will be reached.
	in Underdevelopment page.	button in under development	
		page.	

14.	Testing donation entry form.	Navigate to donation entry	All data should be submitted and
		page and fill all data in entry.	success screen will be reached.
		Then, click submit button.	
15.	Testing donation list display	Navigate to donation list	All the data about donations
	page.	page.	should be displayed correctly.
16.	Testing workflow in	Navigate to donation entry	An email should be sent to site
	Sharepoint site.	page and fill all data in entry.	owners to notify about data entry.
		Then, click submit button.	

2.2 Test cases

The process of testing is done according to the test plan table shown below. The flow of testing, result and actions are included in each test case.



For more test cases, see Appendix A.

3. Evaluation of product and process

After creating pages, there was some changes in the interface of original site. So, duplicated site pages and its functions will be evaluated against current interface of original site.

3.1 Evaluation of duplicated site against original site

Header

Search bar and buttons with relevant icons are put in header of duplicated site. UI of original site's header has only buttons. Using icons in this place helps users to recognize the functions more easily. There is not much difference in navigation links. But font-family and font sizes are not the same. Similar font-style is applied in duplicated site because the same font-style cannot be found.



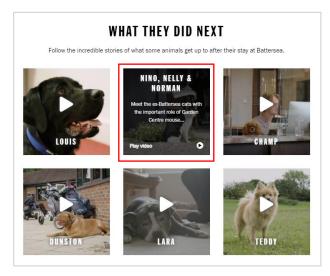
Figure 3.1 (i) Header section of Original site's Home page



Figure 3.1 (ii) Header section of Duplicated site's Home page

Grid display section

Original site of Battersea had some interface changes in this section. Before, instructions of animal treats were displayed with grid in this section. But later, they displayed stories of ex-cats in this section using same interface and functions. In duplicated site, to help visibility of the texts, text shadows are added and font-awesome cdn is used to implement icons. The hover effects in all treats are written with pure CSS.



MADE IN BATTERSEA Give your four-legged friend something special with our recipes for homemade treats CUPS

Figure 3.1(v) Grid display section of Original site's Figure 3.1 (vi) Grid display section of Duplicated Home page

site's Home page

3.2 Under Development Page

Under Development page will be shown if an unfinished page is opened. All of the uncreated page links will be directed to this page. This page has a link button which will redirect visitors to "Home Page" as shown in Figure 3.2 (i). The background color of the button is implemented the same with buttons in other pages to keep consistency of the site.

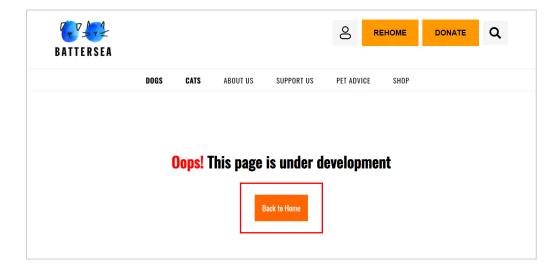
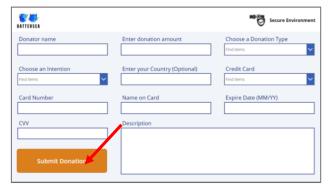


Figure 3.2 (i) Underdevelopment page of duplicated site.

3.3 Database for Donation Entry

Donation pages are made with PowerApp. The UI designs of PowerApp entry form is made as similar as other site pages. There is an icon and text showing users that this page is safe to input payment information as show in Figure 3.3 (i). When the form is submitted successfully, success screen will be shown and users can view donation lists as shown in Figure 3.3(ii).



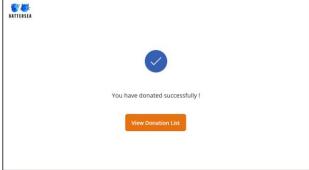


Figure 3.3 (i) Donation entry form of Duplicated site

Figure 3.3 (ii) Donation entry form of Duplicated site

A list named "DonateDB" is created in sharepoint and it is connected to entry form created in PowerApp. It is not easy to use PowerApp to create entry form. The tools and functions of PowerApp is a bit complex.

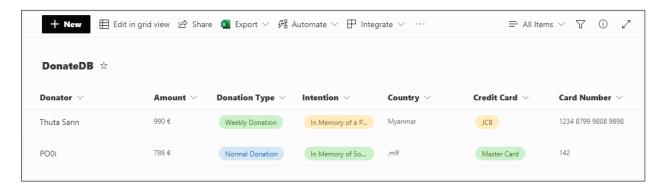
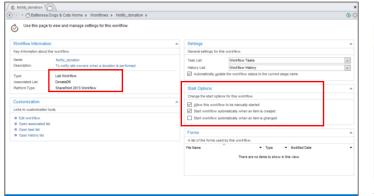


Figure 3.3 (iii) List with data columns in sharepoint

3.4 Workflow for notifying

A workflow is applied in duplicated site to notify site owners when a donation is done. An email will be sent to site owners' mail with the information about donation. When choosing email address, site owners' mail addresses cannot be found. So, all the site owners and members are chosen instead of selecting specific email.



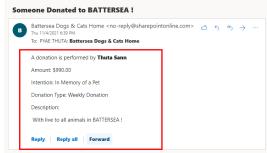


Figure 3.5 (ii) Email sent into outlook mail

Figure 3.5 (i) Workflow setting in SharePoint Designer.

3.5 Summary

There are 10 pages in the duplicated site of "Battersea Dogs & Cats Home". "Oswald" font-family is used in the duplicated site since the same font-family as the original site cannot be found. A database and workflow are implemented in the site when creating donation entry form. It is not easy to make PowerApp entry form same design as other site pages. So, it is created as similar as other sites pages. The original site doesn't have much icons usage, but font-awesome icons are applied in the duplicated site so that users will not confuse the functions of site. All pages are implemented in same header, footer, button color and background color to keep consistency. The site pages have simple design and familiar look but there are not much functions. Search functions and more animation can be implemented in site pages if there is more time.

According to the testing, some maintenances are made. There was a problem in submitting data because of "Title column" in list. So, title column is renamed and changed as "Donator" column. Another maintenance is done since hover effects on some buttons are not working. Other animations, links and data displaying functions are working very well.

4. Legal, social, professional issues and maintenance recommendations

a) Legal guidelines for staff/users

Nowadays, social media and web-based system are taking parts in daily life of most people and in business. So, the possibility of staffs facing legal issues is growing bigger and bigger. The followings are legal guidelines for staffs to avoid possible issues.

Data privacy

Sometimes, staffs may share privacy data of company on social media such as Facebook, Twitter, Slack, etc. Staffs sharing organization's data such as images, logos, or personal information of other staffs may deal with "Data Protection Act 2018" (GOV.UK, 2018). So, staffs must not misuse organization's data or personal data of other staffs without permission by owners. They must avoid uploading serious information on social media without any credits.

Computer security

Computer Misuse Act (1990) protects organizations data from unauthorized accesses (BBC, 2021). Staffs may encounter legal issues such as unauthorized accesses to computer data. Moreover, staffs must not use devices having virus or malware to protect computer components. Company should have proper training for staffs on handling and protecting computer software and hardware so that staffs can check the quality and security of devices before using.

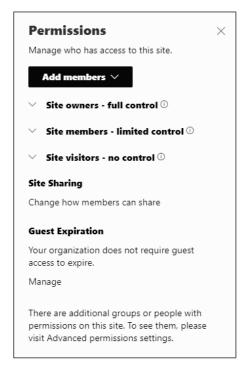
Sharing fake news within organization

Staffs form the organization might share false information or news on social media and other web-based systems. Those information can be serious and taint organization's image. At that times, staffs may have to deal with legal acts such as "The Protection from Online Falsehoods and Manipulation Act (POFMA)" enacted by Singapore Government (Watch, 2021). Therefore, organization should train staffs to understand and those laws and regulation.

b) Guidelines for the organization's management

Permission control

It is important to control accesses and permissions within the site. In sharepoint, there are 3 roles: Site owners (having full control), Site members (having limited controls) and site visitors (no controls). Only organization owners and admin staffs should be site owners and general staffs should be site members. Those roles can be given in by clicking setting icons at the top right of sharepoint site and clicking "Site permissions" *See Figure 7.1.1*. Moreover, site owners can toggle Private and Public mode of site in the "Site Information" *See Figure 7.1.2*.



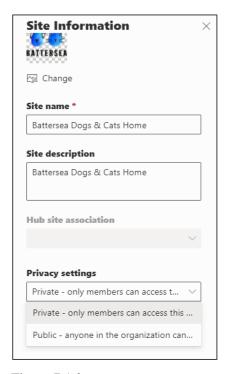


Figure 7.1.1

Figure 7.1.2

Site Maintenance

There are a lot of site templates available in sharepoint or header and themes can be changed manually in "Change the look" setting. Versioning is a helpful tool in keeping the quality of site pages, lists and documents. Versioning should be enabled for all documents and site pages to be able to recover the previous versions of the data if required. Versioning can be set up in Setting>Library Setting> Version setting. Content approval and number of version to retain can also be set up there. Moreover, site owners can view site usage analytics such as traffic, popular contents and usage by devices or time in "Site usage".

5. Conclusion and recommendation

5.1 Microsoft Sharepoint

Microsoft sharepoint is highly flexible and easy to manage site pages without having much coding knowledge. It provides various webparts which are ready-to-use and can easily be implemented. For example, a countdown timer for coursework deadline is applied in SharePoint site's project page. So, it is easy to recognize the deadline of coursework every time SharePoint Project page is opened. SharePoint is well-designed to meet most of users' requirements. Users can easily modify themes and site designs from "Change the look" setting. Site owners can choose and apply desire themes in their sites. And it allows site owners to control the permissions within the site. Site owners can control the access of every members within the site and also remove members. But according to its numerous functions, sharepoint is a bit complex to use. Staffs need a proper training to use Microsoft Sharepoint well. Compared to other CMS platforms like Wordpress, Sharepoint provides a reliable security system by deploying a firewall. So, it prevents websites from unauthorized accesses.

5.2 Recommendation of a Content Management System

For Battersea, security is very important because the website contains payment information. Microsoft sharepoint designer is the most suitable CMS for this organization due to following reasons.

- Microsoft Sharepoint provide a strong and reliable security system for customers' and organization's data
- It is very easy to manage task and workflow can be applied by using SharePoint. For example: assigning tasks to site members and creating Gantt Chart for a project or task.
- Sharepoint provides abundance of useful tools and webparts which can be implemented easily by non-technical users.
- The created website can be hosted via Sharepoint online service by subscribing Office 365.
- Microsoft Sharepoint allows collaborative team work. So, it actually improves the performance of working and speed up the development.

5.3 Future Development

If there is more time, the search functions and data displaying functions can be implemented to make the website more dynamic. Current pages of duplicated site are not very responsive. So, the web-pages would be more responsive and more animations can be implemented. Under development pages can be implemented providing wide variety of features.

6. Self-reflection on skills and a CMS implementation project team

6.1 Self-evaluation

As a CMS consultant, I had to make a lot of researches. I collected 5 NGO sites and choose a suitable one according its design and functions. Then, Coursework deadline countdown, document libraries and side bar items are added in Sharepoint project page. When implementing site pages, Sharepoint designer didn't work well on my device. It is not a familiar text editor and it actually slow down the process. Versioning helps a lot in this stage by supporting recovery of previous versions. Original site of Battersea had some changes in Texts and Images after my duplicated site was completed. So, evaluation of duplicated site had to be made against current design of original site. There is not much difference between the original site and duplicated site. But, button color, font-size and navigation style are changed to make the site more comfortable to use. The same font-family as the original one cannot be found. So, the similar font-family is applied in the duplicated site.

When creating an entry form for donation page, PowerApp has to be used applying lists created in SharePoint. It is not easy to make PowerApp entry page the same design as other site pages to keep consistency. All the links, buttons, animations and entry form are tested according to the test plan. The error found during testing are fixed and the completed site is evaluated against original site.

6.2 lessons learnt

Difficulties found during this project can be considered as experiences or lessons learnt. Managing a project and workflow is quite interesting and it can be applied in other upcoming projects. Moreover, It is very satisfying to create an entry form without any coding. The biggest knowledge got from this project is that it is not necessary to understand all the coding to implement a website. Using content management system is very helpful since it saves time. This project teaches a lot in managing tasks with a timetable. It is very interesting to browse wide variety of features provided by Content management system. As a CMS consultant, it is necessary to know those legal laws and statements since those can lead to serious problems.

6.3 Conclusion

As a conclusion, this project of creating and managing a site using a content management system is done very well. A lot of knowledge is got from this project and difficulties found can be considered as lessons learnt. Legal guidelines and maintenance guidelines are researches and written well as a CMS consultant. All the tasks are done with less problems and the problems found during the project are solved successfully. More functions and animations would be implemented in the site to make it more responsive and usable if there is more time.

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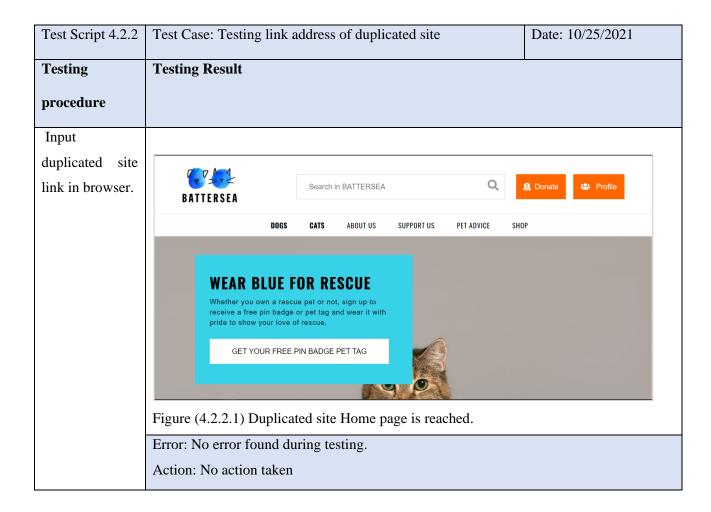
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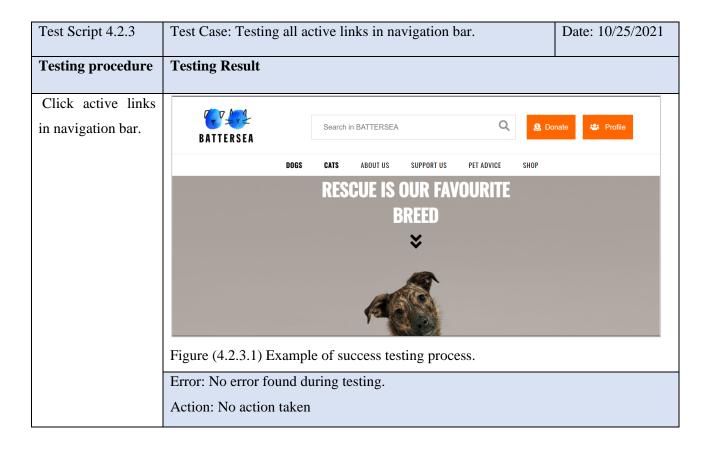
Information Content Management System

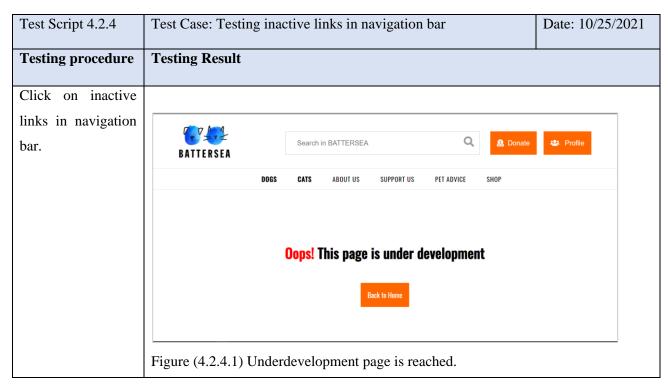
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Appendices

Appendix A



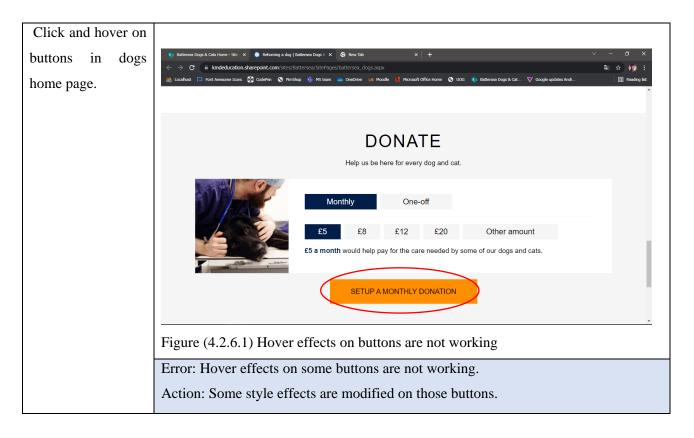


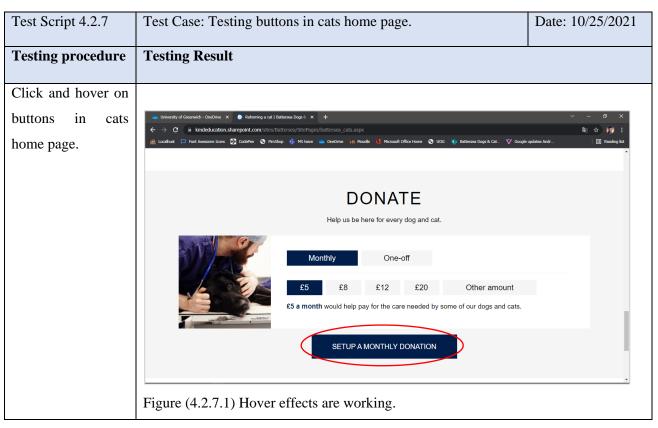


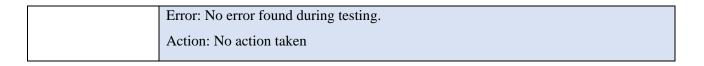
Error: No error found during testing.
Action: No action taken

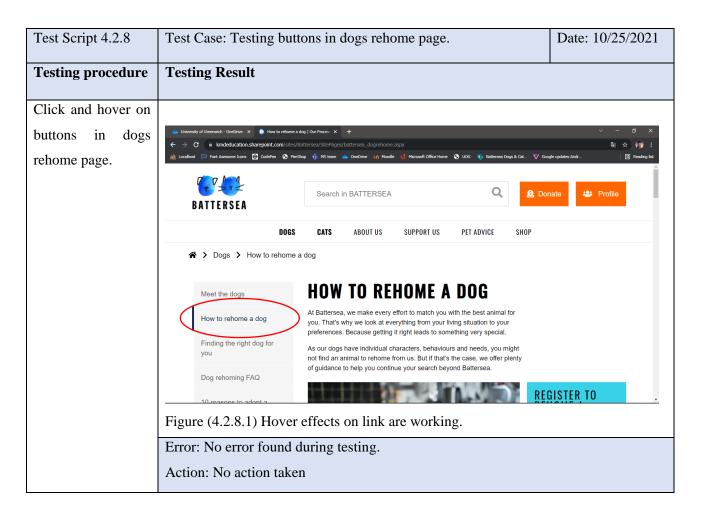
Test Script 4.2.5	Test Case: Testing buttons in home page.	Date: 10/25/2021
Testing procedure	Testing Result	
Click and hover on		
buttons in home		100
page.	WEAR BLUE FOR RESCUE	
	Whether you own a rescue pet or not, sign up to	
	receive a free pin badge or pet tag and wear it with pride to show your love of rescue.	
	GET YOUR FREE PIN BADGE PET TAG	
	MADE IN BATTERSEA	
	Figure (4.2.5.1) Hover effects are working.	
	Error: No error found during testing.	
	Action: No action taken	

Test Script 4.2.6	Test Case: Testing buttons in dogs home page.	Date: 10/25/2021
Testing procedure	Testing Result	

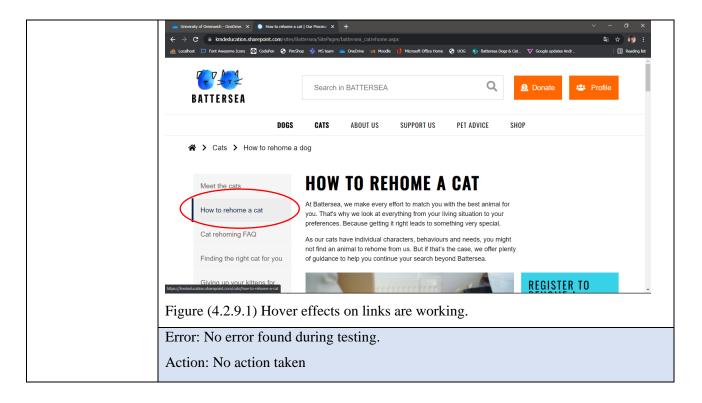


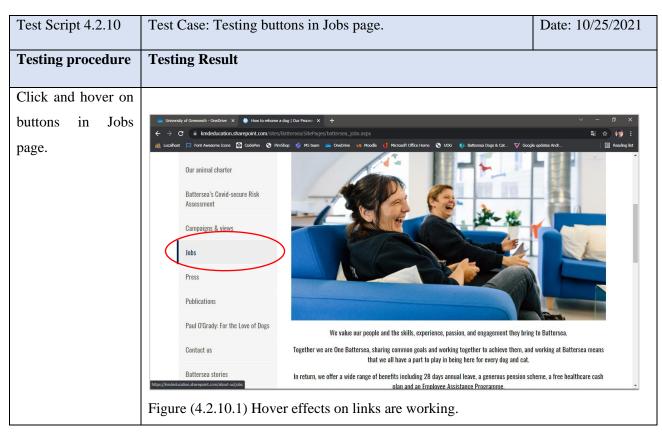




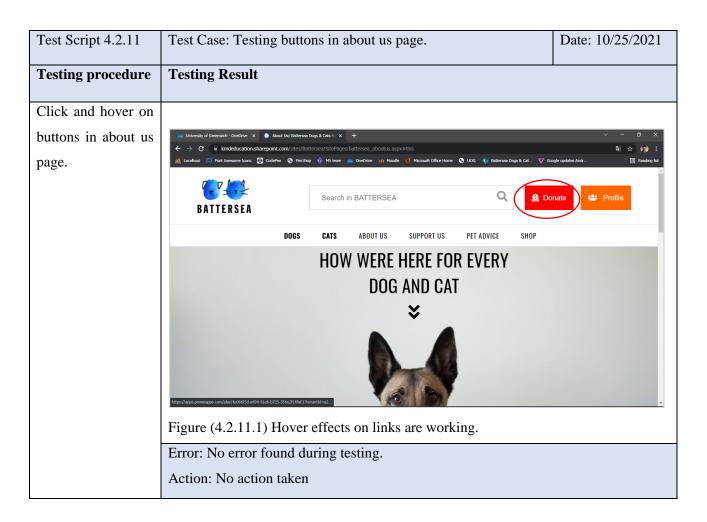


Test Script 4.2.9	Test Case: Testing buttons in cats rehome page.	Date: 10/25/2021
Testing procedure	Testing Result	
Click and hover on		
buttons in dogs		
rehome page.		

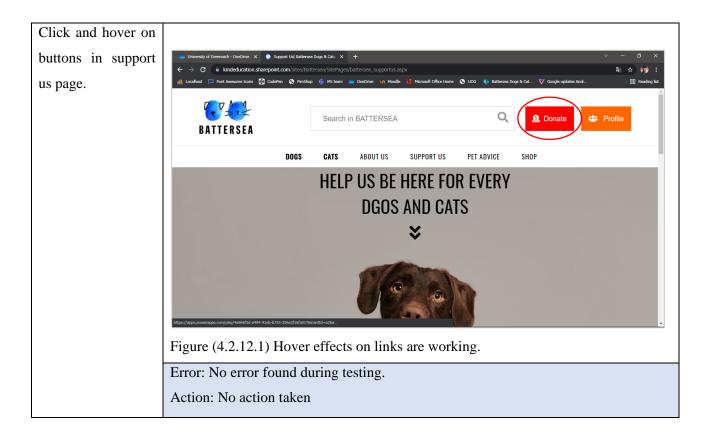


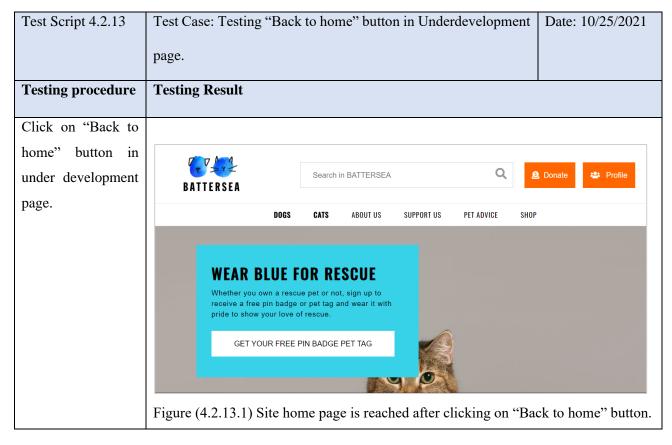


Error: No error found during testing.
Action: No action taken



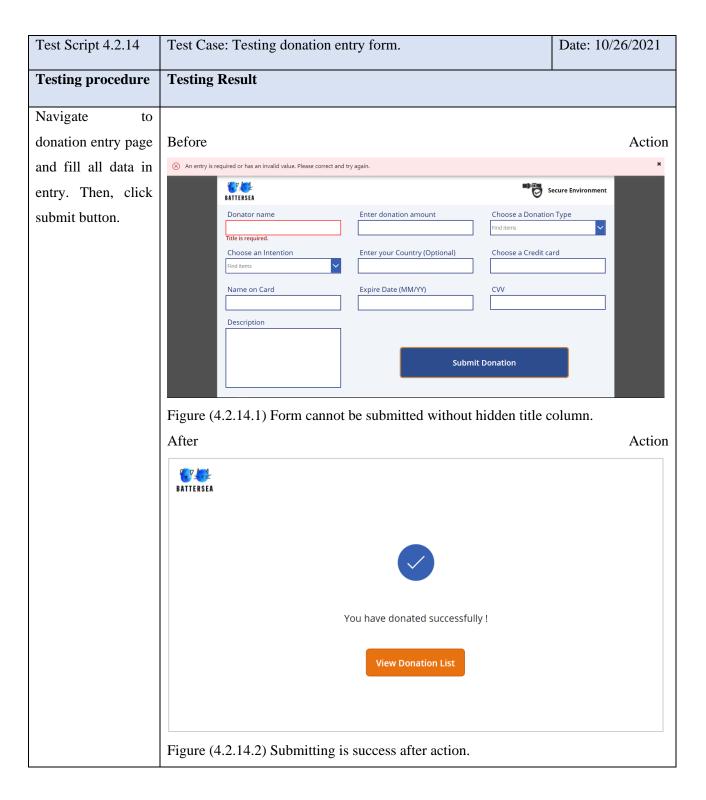
Test Script 4.2.12	Test Case: Testing buttons in support us page.	Date: 10/25/2021
Testing procedure	Testing Result	

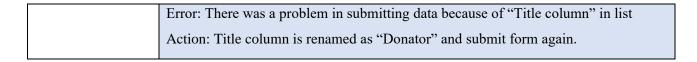


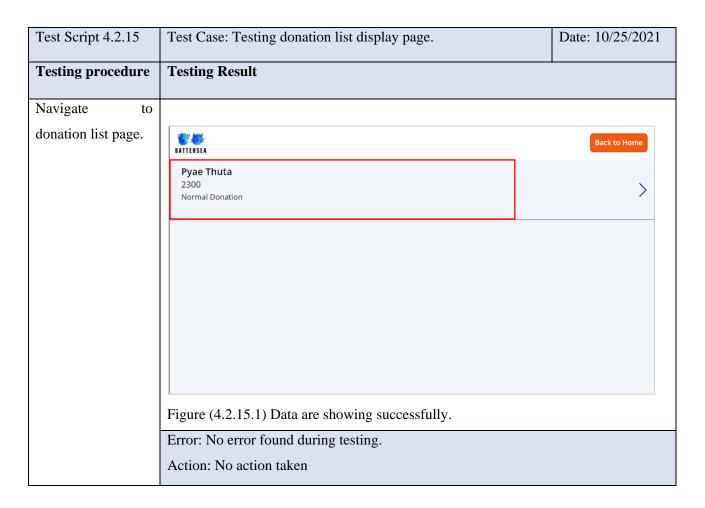


Error: No error found during testing.

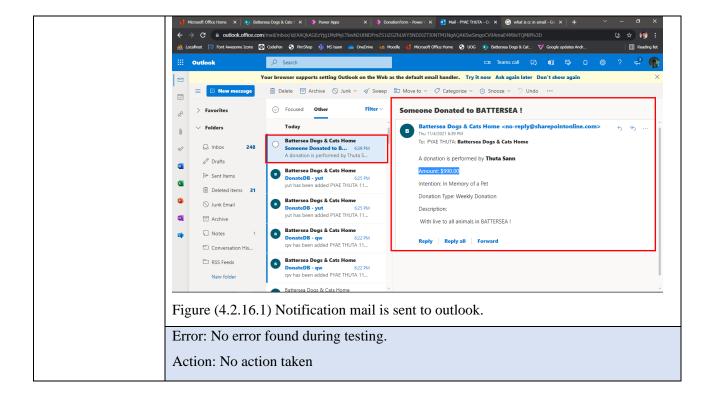
Action: No action taken







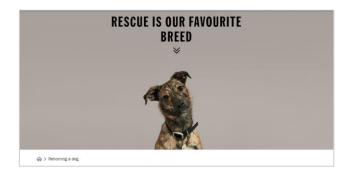
Test Script 4.2.16	Test Case: Testing workflow in Sharepoint site.	Date: 10/25/2021
Testing procedure	Testing Result	l
Navigate to		
inavigate to		
donation entry page		
and fill all data in		
entry. Then, click		
submit button and		
check outlook mail.		



Appendix B

Dogs Home, Cat home and About us pages

Dogs home, cat home and about us pages have similar interface. Most of the designs in duplicated site are similar to those of original site. But font sizes, button color and icons are changed to keep consistency and aesthetic designs of webpages. A scroll to section button is added in banner section. Moreover, donation section is added under grid display. That donation section is interactive and it will allow visitors to manage donation amount.



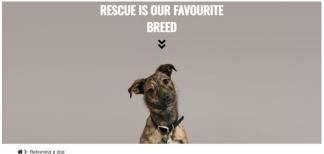


Figure 3.1 (vii) Banner section of original site's "Dog home" page.

Figure 3.1 (viii) Banner section of duplicated site's "Dog home" page.



Figure 3.1 (ix) Donation section of duplicated site's Dogs home page.

Cat rehome, Dog rehome and Jobs pages

Cat rehome, dogs rehome and job pages have similar functions and interface. The breadcrumb section has icons from font-awesome. The left side bar has hover effects and a tracker so that users can easily recognize the current page.



Figure 3.1 (x) Original site's "How to rehome a cat" page.



Figure 3.1 (xi) Duplicated site's "How to rehome a cat" page.