

# CS348 Social Informatics Group Project

Cem Yilmaz, Hawari Ansari, Damian Kwok, Viktor Saprykin

February 2024

## Contents

<b>1</b>	<b>Introduction</b>	<b>3</b>
<b>2</b>	<b>Usability Issues</b>	<b>3</b>
2.1	Guideline 1 - Visibility of system status . . . . .	3
2.1.1	Adding an item . . . . .	3
2.1.2	Basket add/delete feedback . . . . .	3
2.1.3	Loading feedback . . . . .	3
2.2	Guideline 2 - Match between system and the real world . . . . .	4
2.2.1	About and Contact pages . . . . .	4
2.2.2	"Add to basket" button . . . . .	5
2.2.3	Search button and search bar . . . . .	5
2.3	Guideline 3 - User Control and Freedom . . . . .	6
2.3.1	Basket changes on the checkout page . . . . .	6
2.3.2	Page navigation . . . . .	6
2.4	Guideline 4 - Consistency and standards . . . . .	7
2.4.1	Images in basket . . . . .	7
2.4.2	Quality of images . . . . .	7
2.4.3	Consistent styling of buttons . . . . .	7
2.4.4	Inconsistent scaling of page elements . . . . .	7
2.4.5	Basket Logo . . . . .	9
2.5	Guideline 5 - Error prevention . . . . .	10
2.5.1	Fractional/negative items . . . . .	10
2.5.2	Price/Unit overlap . . . . .	10
2.5.3	Inconsistent state of basket . . . . .	11
2.6	Guideline 6 - Recognition rather than recall . . . . .	12
2.6.1	Invisible cookie 'accept' button . . . . .	12
2.6.2	Lack of basket details . . . . .	12
2.6.3	Navigation bar difficult to read . . . . .	13
2.7	Guideline 7 - Flexibility and efficiency of use . . . . .	14
2.7.1	No separation of categories/filters . . . . .	14
2.7.2	Key shortcut for searching . . . . .	14
2.8	Guideline 8 - Aesthetic and minimalist design . . . . .	16
2.8.1	Redundant buttons . . . . .	16
2.8.2	Colour palette . . . . .	16
2.9	Guideline 9 - Help users recognize, diagnose, and recover from errors. . . . .	17
2.9.1	Searching for an item . . . . .	17
2.9.2	Empty basket . . . . .	17
2.9.3	Lack of error handling in current system . . . . .	17
2.10	Guideline 10 - Help and documentation . . . . .	18
2.10.1	Lack of documentation on button functions . . . . .	18
2.11	Additional Guideline - Accessibility . . . . .	19
2.11.1	Labeling . . . . .	19

2.11.2	Font size/scaling in mobile view . . . . .	19
2.11.3	Colour contrast . . . . .	19
2.11.4	Screen reader language issue . . . . .	19
2.11.5	Lack of "alt" attribute for images . . . . .	20
2.11.6	Keyboard Functionality . . . . .	20
2.11.7	WCAG Conformance Level: A . . . . .	20
<b>References</b>		<b>21</b>

# 1 Introduction

The team was tasked with making improvements to an online groceries storefront, which exhibited clear shortcomings in terms of user-facing usability factors, encompassing varying degrees of impact on user experience and accessibility. Our core objective was therefore to tackle these usability issues, in addition to providing a consistent and smooth experience across both desktop and mobile devices.

We decided to use Nielsen's usability heuristics[1] as a basis to develop guidelines, within a heuristic evaluation approach. Doing so allowed us to identify and resolve these issues in a systematic manner, giving a clear line of justification for each change made, and providing categories of consideration to work against. Compared to techniques such as the cognitive walk-through approach, we reasoned that this was a more effective approach to take, as this would allow us to more rapidly target recurring problems and let us develop clear functional improvements to the website within the shortest time frame. Additionally, this let us divide the task up by splitting the team's roles into evaluators and developers, further accelerating progress made.

The team does acknowledge that this approach has some limitations since our findings are likely to be subjective, so in order to mitigate the effect of this we ensured that the team communicated extensively regarding possible resolutions to issues found before moving forward on developing a solution.

## 2 Usability Issues

### 2.1 Guideline 1 - Visibility of system status

*"The design should always keep users informed about what is going on, through appropriate feedback within a reasonable amount of time." [1]*

Through the provision of immediate operation visibility and honesty to the users, user attention can be retained and users will be able to more easily navigate through the website.

#### 2.1.1 Adding an item

**Problem:** There is no feedback from the system when an item is added to the basket, which may make it unclear to the user as to whether the operation was successfully executed or not.

**Implemented Solution:** When adding an item to the basket by clicking the "add to basket" button, the system will now provide the following visual feedback to the user:

- Provide a popup dialog box to the user notifying the operation is successful.
- Update the basket to show the total price of all items currently in the basket.

#### 2.1.2 Basket add/delete feedback

**Problem:** There is no feedback in the current system when an item is removed from the basket.

**Implemented Solution:** In the store, when an item is removed, the basket will refresh to reflect and give immediate feedback that the item has been successfully removed.

#### 2.1.3 Loading feedback

**Problem:** The site features a number of product images that may result in longer loading times for the website on older devices or slow connections, which users may be unaware is still loading.

**Implemented Solution:** Product images have been compressed to reduce their file size, decreasing loading times; it is now more obvious that the page has fully loaded.

## 2.2 Guideline 2 - Match between system and the real world

*"The design should speak the users' language. Use words, phrases, and concepts familiar to the user, rather than internal jargon. Follow real-world conventions, making information appear in a natural and logical order." [1]*

If the functionality of a website is easier to intuit from its design, users will be able to complete the tasks they set out to do quicker and more effectively.

### 2.2.1 About and Contact pages

**Problem:** The original website contains buttons on the Navigation bar called "About" and "Contact" which allude to the existence of pages with more information, but don't lead to anywhere on the site.

**Implemented Solution:** The pages for "About" and "Contact" were created and the button on the Navigation bar will lead to these pages.

#### Who are we?

*Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla a fermentum libero. Maecenas pellentesque porttitor hendrerit. Pellentesque sollicitudin nunc eget ipsum iaculis, eu dignissim dui cursus. Quisque rhoncus facilisis odio, in imperdiet purus posuere accumsan. Aliquam sed dui condimentum, gravida lacus ac, dapibus risus. Aenean et vehicula ipsum, at feugiat orci. Quisque purus mi, lacinia vel justo sit amet, bibendum dignissim tellus. Donec vitae leo non tortor interdum molestie. Donec eu nibh consectetur, efficitur ex eget, hendrerit leo. Pellentesque ac lacus sapien. Ut efficitur hendrerit tortor sit amet faucibus. Suspendisse pharetra lectus nisi, at accumsan metus ornare quis. Nam leo purus, vulputate sit amet nunc sed, fringilla iaculis magna. Maecenas egestas mauris eget iaculis molestie. Integer commodo vel augue in luctus. Quisque dignissim lorem a massa rutrum molestie.*

*Suspendisse finibus commodo odio. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Quisque molestie ut augue ut porttitor. Cras laoreet mauris mauris, a mollis ex aliquet eget. Sed fringilla at urna in tincidunt. Quisque eu mauris metus. Sed vestibulum eget velit in posuere. Nulla et tempus mi, eget faucibus felis. Etiam bibendum orci et tortor ultrices, tristique mollis risus gravida. Nam quis volutpat velit. Etiam quis sem et augue dignissim rutrum quis ac orci. Fusce fringilla, neque consectetur pharetra eleifend, neque nunc ultrices ligula, eget laoreet elit mi nec arcu. Praesent non dolor lacinia, congue mi vel, aliquam tortor. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Cras rhoncus hendrerit ultrices.*

Implemented "About" page

#### Contact Us:

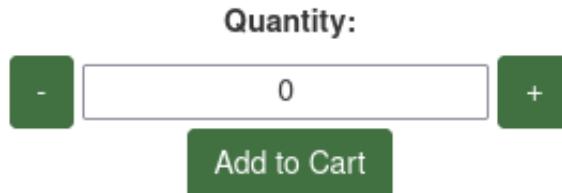
	Phone Number:	+7 777 777 777
	Address:	University of Warwick, Coventry CV4 7AL
	E-mail:	interveg_coventry@gmail.com

Implemented "Contact" page

### 2.2.2 "Add to basket" button

**Problem:** The 'Add to basket' button increments the number of the selected item by one, instead of adding the item to the basket directly.

**Implemented Solution:** When the button is clicked, the currently selected amount of the product is added to the cart. Additional clicks of the button only change the status of the basket if the selected amount changes.



Add to cart button and value selector

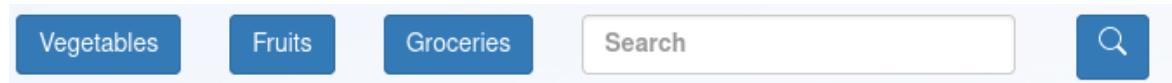
### 2.2.3 Search button and search bar

**Problem:** When the search heading is pressed, a separate display is loaded in which the search bar and search button appear on the other side of the screen. The mouse must be navigated back across the screen to operate the search functionality, which is inconsistent with the site's overall design and takes more time on the user's side.



Old search bar

**Implemented Solution:** Search button replaced with a static, permanently visible search-bar on the products page, which requires no search heading to be pressed.



New search bar in the Navigation bar

## 2.3 Guideline 3 - User Control and Freedom

*"Users often perform actions by mistake. They need a clearly marked 'emergency exit' to leave the unwanted action without having to go through an extended process."*[1]

This stops users from panicking or becoming confused after performing unintentional actions, improving ease of use by allowing these actions to be reverted or navigated away from in a clear manner.

### 2.3.1 Basket changes on the checkout page

**Problem:** The basket cannot be modified at the checkout page in the base implementation of the website; if a user wishes to remove items or change their quantities, they must return to the product page.

Basket Contents				
Broccoli	2	0.60	<b>Total:</b>	<b>£1.20</b>
				<b>£1.20</b>

The old basket checkout page

**Implemented Solution:** Users can now remove items and increment/decrement their quantities from the checkout page. Through the use of cookies, these updates will be preserved if the user navigates back to the product page.

Cart Contents				
Remove	Product	Quantity	Price/unit	Subtotal
	Brussels Sprouts	<input type="text" value="2"/>	1.50	£3.00
<b>Total:</b>				<b>£3.00</b>

The new basket checkout page

### 2.3.2 Page navigation

**Problem:** Once the checkout and other pages are reached, the user can only return to the product page or other pages by using the browser's back button. No options are provided by the website to allow the user to reach these pages at this point.

**Implemented Solution:** The home button is retained in the navigation bar and the user can use the Home button to return back to the store page. Additionally, the company's title/logo is now clickable as a link back to the main product page.

## 2.4 Guideline 4 - Consistency and standards

*"Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform and industry conventions." [1]*

By providing consistency to the site's design, operation becomes easier to understand and users can adapt to use of the site quicker.

### 2.4.1 Images in basket

**Problem:** The checkout basket does not contain any images of the items in the basket. This can cause confusion for the user for if the name of the product is ambiguous on what it actually is that they ordered.

**Implemented Solution:** The checkout basket now also includes the images of the items in the basket to reduce confusion.

### 2.4.2 Quality of images

**Problem:** Images have inconsistent quality where some images are harder to see than others. Some images also contained bad artifacts and made the image become unclear.



The old image used for chocolate which contains artifacts

**Implemented Solution:** The images which contained artifacts or inconsistent quality were replaced with better images that are more consistent with the website.

### 2.4.3 Consistent styling of buttons

**Problem:** The overall styling of buttons on the website are not consistent and can lead to users being confused on what is actually clickable and what is not.

**Implemented Solution:** The overall styling on the page was unified and allows users to easily distinguish UI elements apart on the website.

### 2.4.4 Inconsistent scaling of page elements

**Problem:** On different devices and screen sizes, alongside different zoom levels, elements on the page scale or position themselves in unexpected ways that block vital information and can make the site almost unusable, particularly on mobile devices.



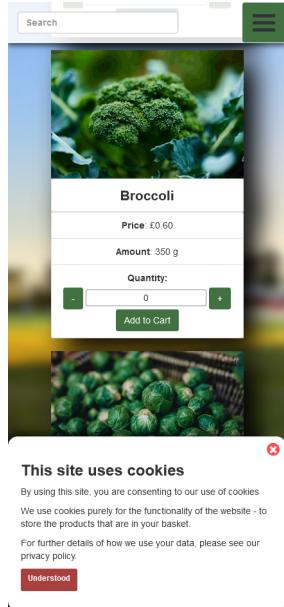
## Chocolate Bar

The new image used for chocolate

	<input type="button" value="-"/>	<input type="text" value="0"/>	<input type="button" value="+"/>																
<b>Garlic</b>		<b>£1.50</b>	<b>150 g</b>	<b>Kale</b>		<b>£1.25</b>	<b>250 g</b>	<b>Leek</b>		<b>£0.95</b>	<b>500 g</b>	<b>Lettuce</b>		<b>£0.50</b>	<b>1 unit</b>	<b>Mushrooms</b>		<b>£1.00</b>	<b>300 g</b>
<b>Add to Bask</b>	<b>Add to Bask</b>	<b>Add to Bask</b>	<b>Add to Bask</b>	<b>Add to Bask</b>	<b>Add to Basket</b>	<input type="button" value="-"/>	<input type="text" value="0"/>	<input type="button" value="+"/>	<input type="button" value="-"/>	<input type="text" value="0"/>	<input type="button" value="+"/>	<input type="button" value="-"/>	<input type="text" value="0"/>	<input type="button" value="+"/>	<input type="button" value="-"/>	<input type="text" value="5"/>	<input type="button" value="+"/>		
<b>Onion</b>		<b>Peas</b>		<b>Potatoes</b>		<b>Pumpkin</b>		<b>Radish</b>											
<b>This site uses cookies</b>																			
By using this site, you are consenting to our use of cookies We use cookies purely for the functionality of the website - to store the products that are in your basket. For further details of how we use your data, please see our privacy policy.																			

The old website when scaled to below full screen

**Implemented Solution:** Max width and percentile scaling was used to ensure that containers don't become too large in devices with large screens. Concurrently, it has also allowed us to be able to fill screens in small devices and gave us extra room. Paired with flex elements, we were able to create a UI that fits across all screen sizes.



The new website when scaled to below full screen

#### 2.4.5 Basket Logo

**Problem:** The checkout button may be hard to identify despite its importance, as it is not visually distinct from the rest of the navigation bar.



Old checkout in Navbar

**Implemented Solution:** Checkout link has been replaced with a basket button featuring high contrast colours, and is shown independently in a clear, separate location on-screen. The button also shows the current total value of items in the basket, so the user does not have to switch pages to get this insight.



New checkout button on bottom right

## 2.5 Guideline 5 - Error prevention

*"Good error messages are important, but the best designs carefully prevent problems from occurring in the first place. Either eliminate error-prone conditions, or check for them and present users with a confirmation option before they commit to the action."*[1]

This reduces the users' capacity for making mistakes in input or actions, so users are less likely to be confused or panic during use of the website.

### 2.5.1 Fractional/negative items

**Problem:** As input for item count is not properly validated, negative and non-integer items may be added to the basket which may result in errors at checkout calculation.

**Implemented Solution:** User inputs are now properly checked such that only positive integers can be submitted for input.

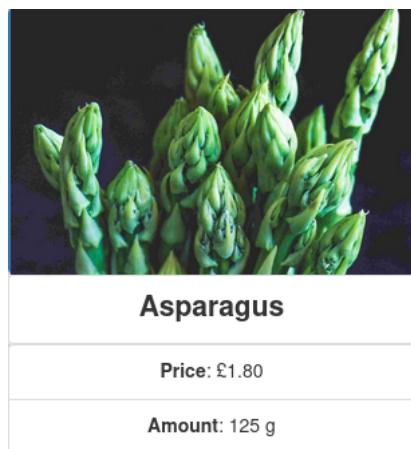
### 2.5.2 Price/Unit overlap

**Problem:** Product prices and unit details overlap, which means that users may misinterpret the information given, and may make incorrect input later on.



The layout of prices and unit on old website

**Implemented Solution:** Cost and details have been clearly and distinctly separated out, with spacing and borders. Users are now unlikely to misread the text on each card.



The new layout of prices and unit

### 2.5.3 Inconsistent state of basket

**Problem:** If the user navigates the website by the browser's navigation buttons, the basket will be in an inconsistent state. If a user returns from the checkout page and adds a new item, the previous basket will be overwritten.

**Implemented Solution:** Ensure contents of the basket remain preserved through the use of cookies, which persist regardless of where the user is on the site and keeps the state consistent.

## 2.6 Guideline 6 - Recognition rather than recall

*"Minimize the user's memory load by making elements, actions, and options visible. The user should not have to remember information from one part of the interface to another. Information required to use the design (e.g. field labels or menu items) should be visible or easily retrievable when needed."* [1]

This helps clarify what a user should do to achieve the tasks they want to perform through operation visibility, reducing confusion and dependence upon the user's prior experience or memory.

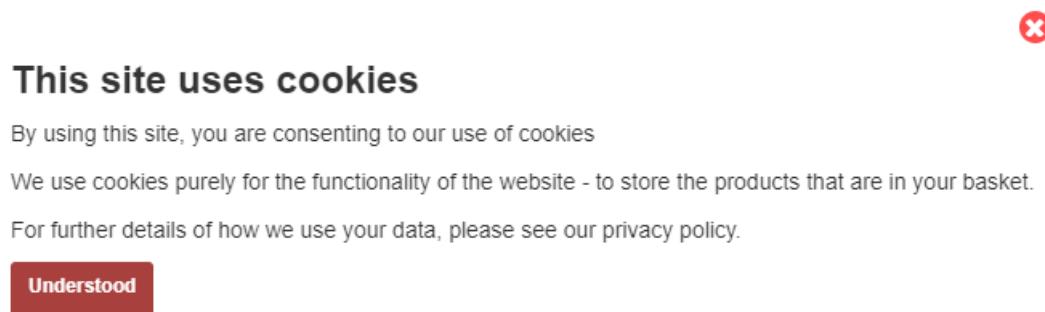
### 2.6.1 Invisible cookie 'accept' button

**Problem:** The button to dismiss the cookies prompt is hard to locate, and must take extra time on the user's part to find and select.



The layout of the old cookies notification

**Implemented Solution:** "Close" button and "Understood" button are now available on the cookies prompt, with symbols and high-contrast colours clearly signposting their usage.



The revised layout of the cookies

### 2.6.2 Lack of basket details

**Problem:** Basket contents have no headings, or details such as item quantity and item price, which may confuse a user as to what each value is referring to.

Basket Contents			
Broccoli	2	0.60	£1.20
		<b>Total:</b>	<b>£1.20</b>

The old details at checkout

**Implemented Solution:** This information has now been added to the basket to make the information display more intuitive, making the display presented less ambiguous.

# Cart Contents

Remove	Product	Quantity	Price/unit	Subtotal
--------	---------	----------	------------	----------

The new headings at checkout

### 2.6.3 Navigation bar difficult to read

**Problem:** Items on the navigation bar are unclear, and the navigation bar is not well sectioned off from the rest of the page.



The layout of the original Navbar

**Implemented Solution:** The navigation bar is now sticky and follows the user's view as they scroll, as well as being better styled with button colours and icons to represent the individual functions of the pages they lead to.



The new Navbar layout

## 2.7 Guideline 7 - Flexibility and efficiency of use

*“Shortcuts — hidden from novice users — may speed up the interaction for the expert user such that the design can cater to both inexperienced and experienced users. Allow users to tailor frequent actions.” [1]*

Experienced users have access to additional functionality through the use of shortcuts, allowing for faster navigation and more efficient use which may increase user satisfaction in the long run.

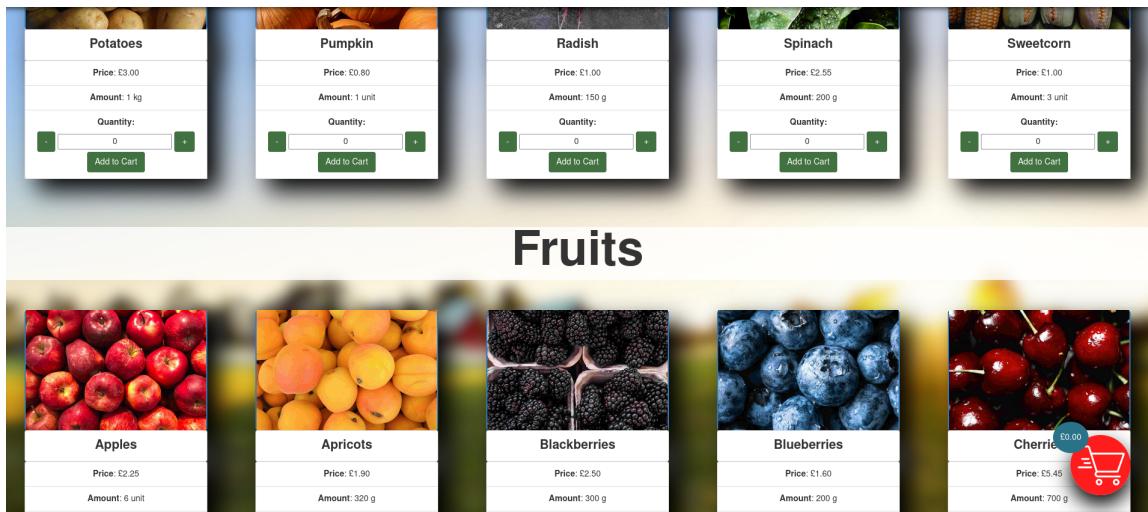
### 2.7.1 No separation of categories/filters

**Problem:** Items are currently shown as one long list; there is no separation of categories for product types such as fruits or vegetables.



Old ordering of product page

**Implemented Solution:** Separated the items in the list into three separate, logically distinct categories with clear headings that can be navigated to, and added search functionality to filter between them.



New ordering of product page

### 2.7.2 Key shortcut for searching

**Problem:** The search button must be clicked in order to submit a search query.

**Implemented Solution:** The enter key can now be used to submit the search query; additionally,

search as you type has been implemented such that will show 0 input is needed before results are returned for the search.

## 2.8 Guideline 8 - Aesthetic and minimalist design

*"Interfaces should not contain information which is irrelevant or rarely needed. Every extra unit of information in an interface competes with the relevant units of information and diminishes their relative visibility." [1]*

By reducing visual clutter, users are drawn to only the most salient information presented by the website, and can achieve their tasks faster since they do not have to spend as long processing this information.

### 2.8.1 Redundant buttons

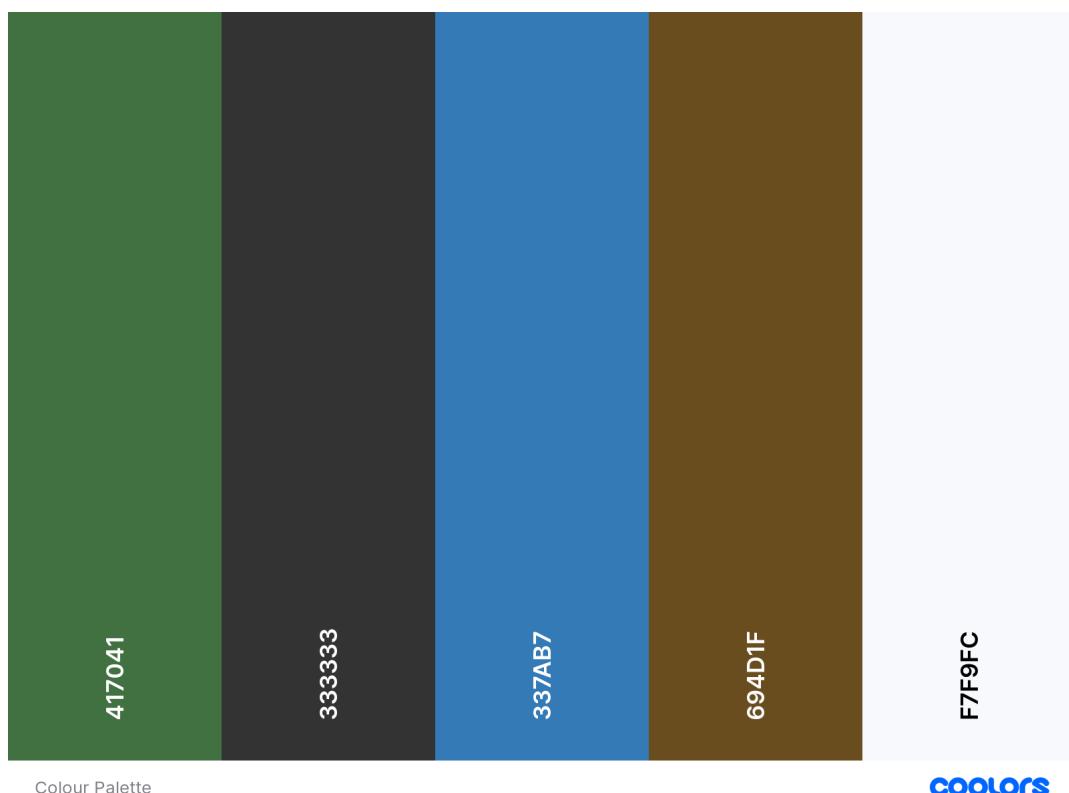
**Problem:** The "add to basket" and item increment buttons perform the same functionality, by increasing item count by one.

**Implemented Solution:** The "add to basket" button has been repurposed to instead add the first item to the basket, and then switch the display of the card to item count selection where the increment/decrement buttons are available.

### 2.8.2 Colour palette

**Problem:** The colour palette used on the old website is visually confusing as they result in users need to guess the function of elements on the page.

**Implemented Solution:** The colour palette was unified to ensure a consistent design language is obeyed and the user is not subjected to irrelevant information. As suggested in lectures and the coursework guidelines, Coolors[2] was used to generate a visually consistent and appealing colour palette.



Colour Palette

coolors

The new colour palette used on the website

## 2.9 Guideline 9 - Help users recognize, diagnose, and recover from errors.

*"Error messages should be expressed in plain language (no error codes), precisely indicate the problem, and constructively suggest a solution." [1]*

Users should be able to clearly understand what went wrong in the cases that errors in operation occur, reducing confusion in unexpected cases.

### 2.9.1 Searching for an item

**Problem:** The system does not give an appropriate response when searching for an item that does not exist, which may cause the user to think the search is still in progress or has reached an error somehow.

**Implemented Solution:** The screen will display a clear "No products found" message to the user if the search query does not return any matches, and prompts the user to retry the search.

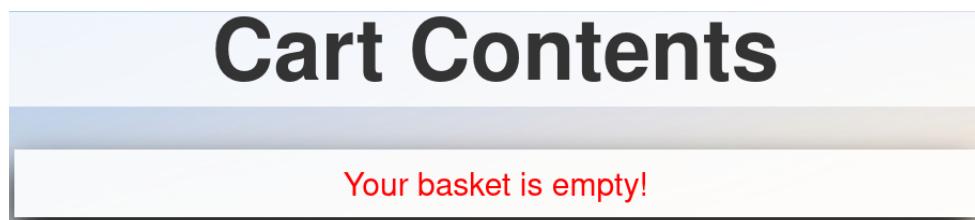


Error message when search returns no matches

### 2.9.2 Empty basket

**Problem:** The system does not give an appropriate response when navigating to checkout with an empty basket. This may cause the user to think their basket is still loading or errored.

**Implemented Solution:** The screen will now display a clear "Your basket is empty" error to users if the checkout is navigated to with no items, preventing the user from proceeding with the transaction process and allowing them to return to the products page.



Error message when basket is empty

### 2.9.3 Lack of error handling in current system

**Problem:** If the site goes down while live, errors (such as 404) are unclear to the user.

**Implemented Solution:** While safeguards have been set in place to deal with this to deliver basic error messages, no further visible solutions have been implemented since this is beyond the scope of the coursework (as a server-side management issue rather than an issue with operation).

## 2.10 Guideline 10 - Help and documentation

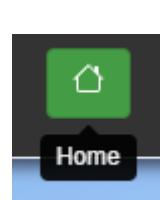
*"It's best if the system doesn't need any additional explanation. However, it may be necessary to provide documentation to help users understand how to complete their tasks."*[1]

Providing documentation allows users to have concrete instructions that they can refer back to in case operations were not clearly signposted enough by the website's design, improving the feeling of security while using the website.

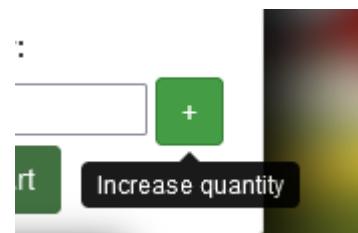
### 2.10.1 Lack of documentation on button functions

**Problem:** Although the navigation and the actions needed to be performed on the website are fairly intuitive and most users have used a similar system before there might still be users who have either not ordered online before or can't make the connection between certain elements and might get confused.

**Implemented Solution:** We added hover tool tips to certain elements that could be ambiguous. For example, hovering over the shopping cart logo on the bottom right of the shop shows the text "View Cart" which serves to guide the user to complete their tasks.



(a) Home Button Caption



(b) Quantity Increase Button Caption

Help tool tip that appear upon hovering on buttons

## 2.11 Additional Guideline - Accessibility

*“Accessibility is the practice of making your websites usable by as many people as possible. We traditionally think of this as being about people with disabilities, but the practice of making sites accessible also benefits other groups such as those using mobile devices, or those with slow network connections.”*[3]

Although not a part of the Nielsen's 10 guidelines, we also decided to add more functionality for accessibility, such that the website may be usable by those who may not be able to view the website via typical means (since this was not explicitly accounted for in the original guidelines despite its importance in current-day web browsing).

### 2.11.1 Labeling

**Problem:** Buttons and forms have no labels within the underlying code. While not immediately visible to most users, this poses an issue to users who rely on screen readers or other similar software to parse content from the website.

**Implemented Solution:** Every interactable element on the site now has an associated, descriptive label. This has the additional effect of increasing hit area for small clickable elements, giving more leeway for the user to select them[4].

### 2.11.2 Font size/scaling in mobile view

**Problem:** Layout and scaling of the mobile page results in a small and distorted font size which may be hard to read.

**Implemented Solution:** Font size has been increased, and the site has been re-designed to allow for zooming of the page without clashing elements.

### 2.11.3 Colour contrast

**Problem:** The use of low contrast colours in related areas make it difficult for a user to distinguish some elements, especially for users with colour blindness or other visual impairments.



The old colour palette used by the site

**Implemented Solution:** We changed the colour scheme of the pages, such that they use a high contrast and aesthetically pleasing colour palette, in order to increase visibility of elements and make them distinct.

### 2.11.4 Screen reader language issue

**Problem:** There is no “lang” tag in the HTML files which can lead to problems for screen readers as the “lang” attribute is designed to signal screen readers to switch to another language.

**Implemented Solution:** Addition of a “lang” tag to the HTML files.

### **2.11.5 Lack of "alt" attribute for images**

**Problem:** There is no "alt" attribute in the image tags of the website. The alt attribute provides alternative information for an image if a user for some reason cannot view it (because of slow connection, an error in the src attribute, or if the user uses a screen reader).

**Implemented Solution:** Addition of an "alt" attribute to the image tags with the name of the product.

### **2.11.6 Keyboard Functionality**

**Problem:** The old website is not able to be navigated using only a keyboard. For users who are unable to use a pointing device accurately this poses a problem to the usability of the website.

**Implemented Solution:** The new website is usable with only just the keyboard using tab indexing. This allows users who are motor impaired to use the website without the use of a pointing device.

### **2.11.7 WCAG Conformance Level: A**

**Problem:** The site does not appear to be compliant to WCAG3 standards[5], which should form the baseline for user accessibility; failure to meet these would then imply missing considerations in this regard.

**Implemented Solution:** We have developed our site to be adherent to WCAG3 standards, conformant to at least Level A. These were comprehensively checked by way of Firefox's developer tools. Doing so ensures that the site now meets standardised accessibility criteria in line with current-day requirements, like other sites serving similar purposes.

## References

- [1] J. Nielsen, *10 Usability Heuristics for User Interface Design* — nngroup.com, <https://www.nngroup.com/articles/ten-usability-heuristics/>, [Accessed 10-02-2024], 1994.
- [2] *Colors - The super fast color palettes generator!* — colors.co, <https://colors.co/>, [Accessed 09-02-2024].
- [3] *What is accessibility? - Learn web development — MDN* — developer.mozilla.org, [https://developer.mozilla.org/en-US/docs/Learn/Accessibility/What\\_is\\_accessibility](https://developer.mozilla.org/en-US/docs/Learn/Accessibility/What_is_accessibility), [Accessed 10-02-2024], 2024.
- [4] *label: The Label element - HTML: HyperText Markup Language — MDN* — developer.mozilla.org, <https://developer.mozilla.org/en-US/docs/Web/HTML/Element/label>, [Accessed 12-02-2024], 2023.
- [5] *How to Meet WCAG (Quickref Reference)* — w3.org, <https://www.w3.org/WAI/WCAG22/quickref/?versions=2.1>, [Accessed 10-02-2024], 2023.