

National College of Ireland

Project Submission Sheet

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Programme: Higher Diploma in Science in Computing

Year: 2024

Module: Web Design and Client Side Scripting

Lecturer: Eugene McLaughlin

Submission Due Date: 8/12/2024 @ 23:59

Project Title: Tír na nÓg's Jewelry Ecommerce Website

Word Count: 20,872

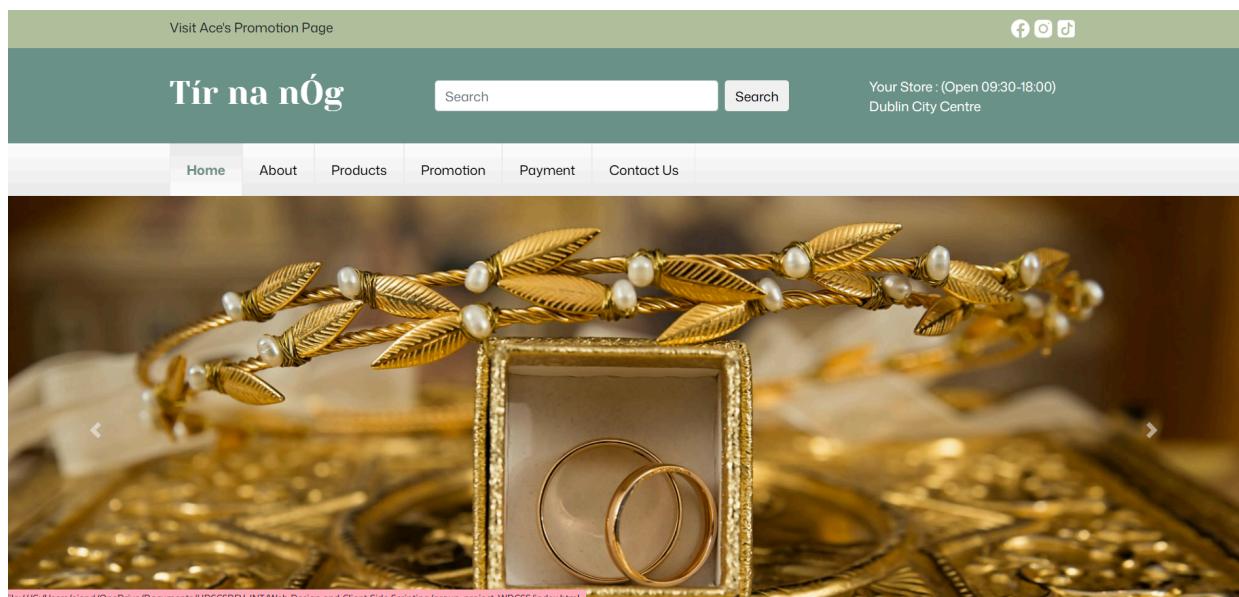


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1. Project Summary

In this project, we aim to create a website for a jewelry business called **Tír na nÓg**, which specializes in selling exquisite jewelry products such as earrings, bracelets, necklaces, rings, and customized pieces. Located in Dublin, Tír na nÓg seeks to establish a captivating and elegant online presence that reflects the timeless beauty of its jewelry, appealing to a wide audience of jewelry enthusiasts. The business also aims to emphasize its unique customization service, allowing customers to create personalized jewelry that holds special meaning.

Our team intends to apply the skills and knowledge we have acquired in class, including the use of HTML, CSS, JavaScript, jQuery, and Bootstrap. Throughout this project, we aim to practice and demonstrate our understanding of web design principles, including validation, SEO, testing, and website deployment. This project not only allows us to showcase our technical abilities but also provides an opportunity to create an engaging and professional online platform for Tír na nÓg.

2. Design Process

2.1. Research & Investigation

During the research phase, our team analyzed three benchmark websites—Claires.com, EvryJewels.com, and OrJewellery.ie—to gather insights and inspiration for our project. We evaluated aspects such as website structure, functionality, page layout, navigation, color schemes, and logo designs. We also explored Colorhunt.com to select a brand color palette that aligns with the elegant and youthful vibe we want for Tír na nÓg.

Among the websites, we were most impressed by EvryJewels.com. Its clean layout, intuitive navigation, and modern aesthetic perfectly capture the essence of what we envision for our project. In comparison, Claires.com and OrJewellery.ie had some useful features but didn't resonate as strongly with our goals. This research has guided our design choices, helping us to focus on creating an engaging and visually cohesive platform that represents Tír na nÓg effectively.

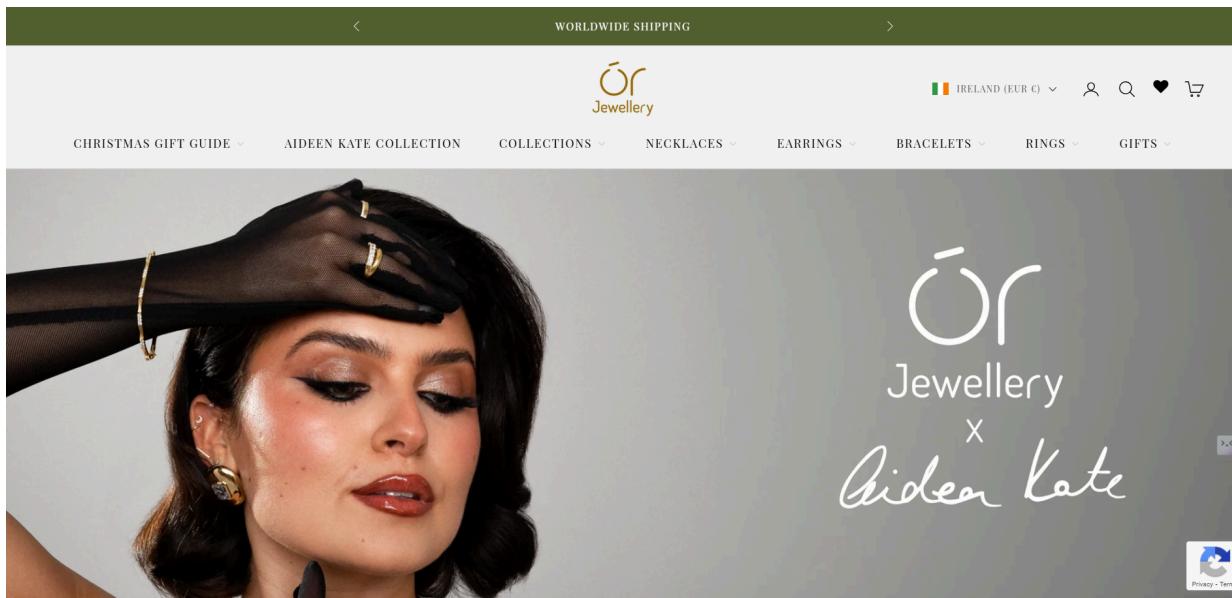


Fig.1 Unique Designer Fashion Jewellery in Ireland (no date) Ór Jewellery. Available at: <https://orjewellery.ie/> (Accessed: 05 December 2024).



Fig.2 Home: Evry jewels (no date) EVRYJEWELS. Available at: <https://evryjewels.com/> (Accessed: 05 December 2024).

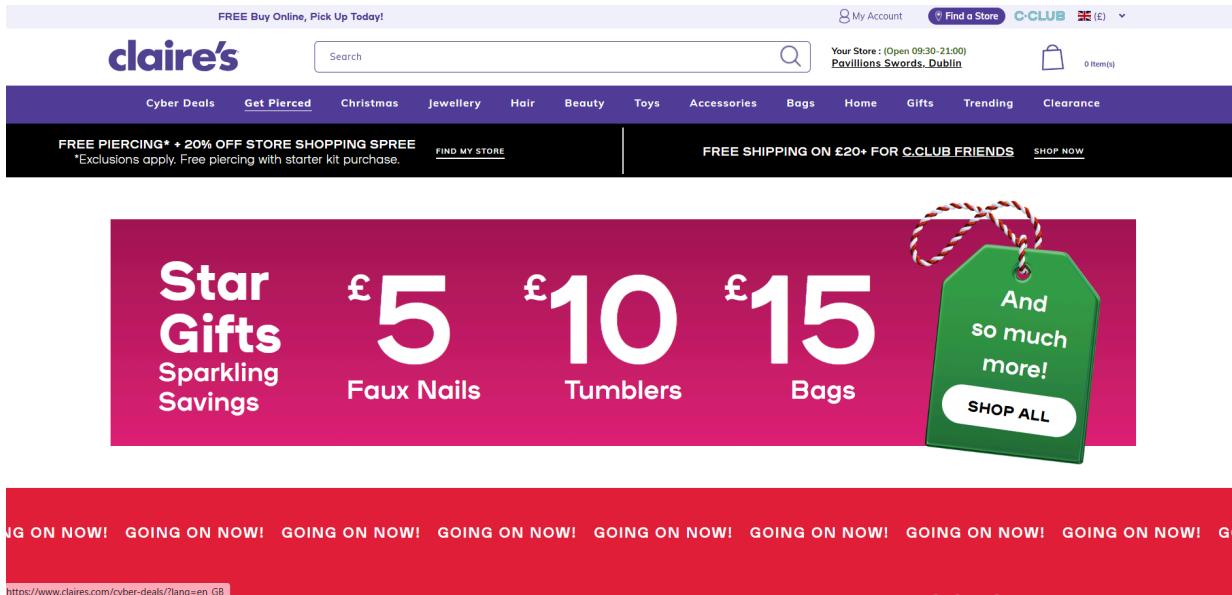


Fig.3 Claire's: Piercing, hair & fashion accessories: Claire's (no date) Claire's | Piercing, Hair & Fashion Accessories | Claire's. Available at: <http://claires.com/> (Accessed: 05 December 2024).

2.2. Requirements & Technical Approach

There are several key requirements for this project. The website needs to meet functional requirements such as allowing users to browse and purchase jewelry online, add to cart, check out the item and access the other pages. Additionally, the site should feature a visually appealing gallery showcasing products, and an integrated contact form for inquiries. The website must also convey an elegant and modern atmosphere while encouraging users to engage with the brand.

To fulfill these requirements, we plan to create six core pages: Home, Products, Payments, About Us, Promotion, and Contact. The structure and content will be built using HTML and CSS, ensuring a responsive design. JavaScript will be used to add dynamic functions such as the adding to cart and pay, viewing products and sending emails from contact us. Bootstrap will be implemented to enhance the layout and styling. Furthermore, we will incorporate a carefully selected color palette from Colorhunt.com to maintain a cohesive and attractive aesthetic. This approach ensures that the website is functional, user-friendly, and aligned with the sophisticated branding of Tír na nÓg.

2.3. Design & Wireframe

2.3.1. UI Kit Design

To align with the sophisticated and elegant branding of Tír na nÓg, we have chosen a refined color palette featuring the following hex codes: #deaa79,

#ffe6a9, #b1c29e, and #659287. These colors blend warm, earthy tones with subtle greens, reflecting the timeless beauty of jewelry and creating an inviting and modern aesthetic for the website.

The logo has been designed to incorporate a minimalist jewelry motif, subtly highlighting the customization aspect that sets Tír na nÓg apart. The team also decided to use a google font to be used not only as a text logo brand but also for our entire headings. This ensures the brand's identity is seamlessly tied to its product offerings.

As a team, we brainstormed the color to choose in our website creation by using Colorhunt website and decided on this color scheme. See Fig.4 below.

All team members will apply this design consistently across every page, ensuring the website maintains a cohesive and polished look while delivering an exceptional user experience.

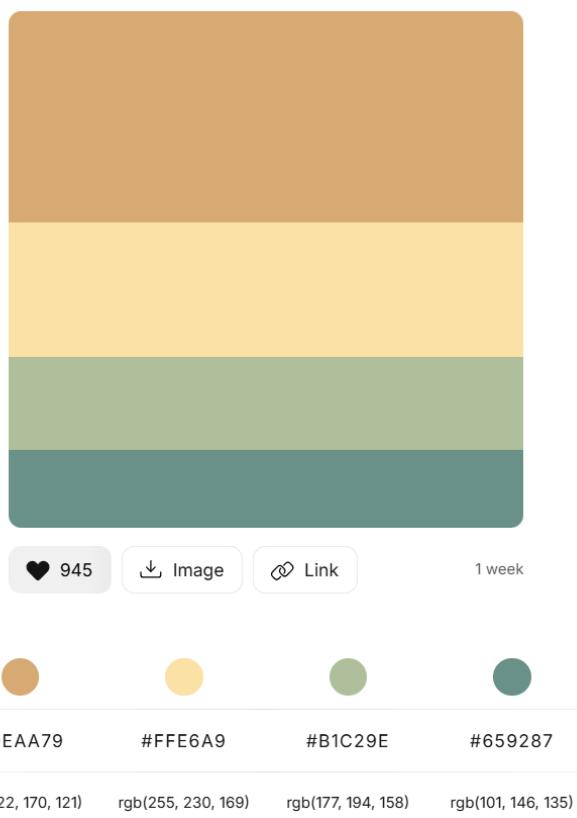


Fig.4 Color palettes for designers and artists (no date) Color Hunt.
Available at: <https://colorhunt.co/> (Accessed: 05 December 2024).

2.3.2. Wireframe

Each team member contributed to the wireframe design for the website pages they are responsible for. During a collaborative meeting, we discussed and sketched the initial wireframes together, ensuring that the overall structure and flow of the website align with the goals of Tír na nÓg. Once the sketches were finalized, team members used the software they are most comfortable with, such as Figma, Adobe XD, or Balsamiq, to create their respective wireframes.

This approach allowed us to efficiently divide the workload while maintaining a consistent design language across all pages, ensuring the final website meets both functional and aesthetic expectations.

Below are the wireframes that we develop for the Tír na nÓg's website.

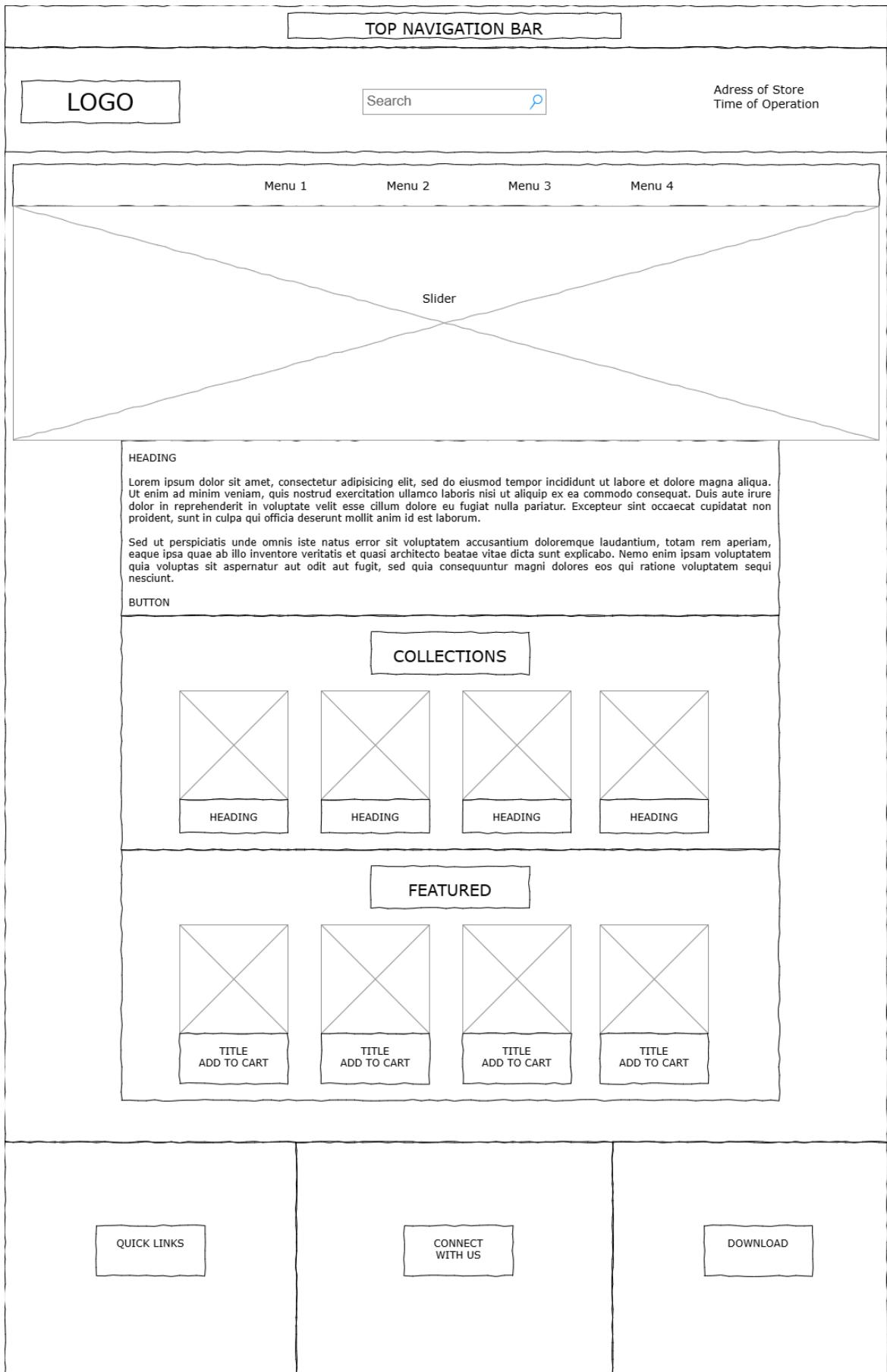


Fig.5 Home Page (created by Adrian)

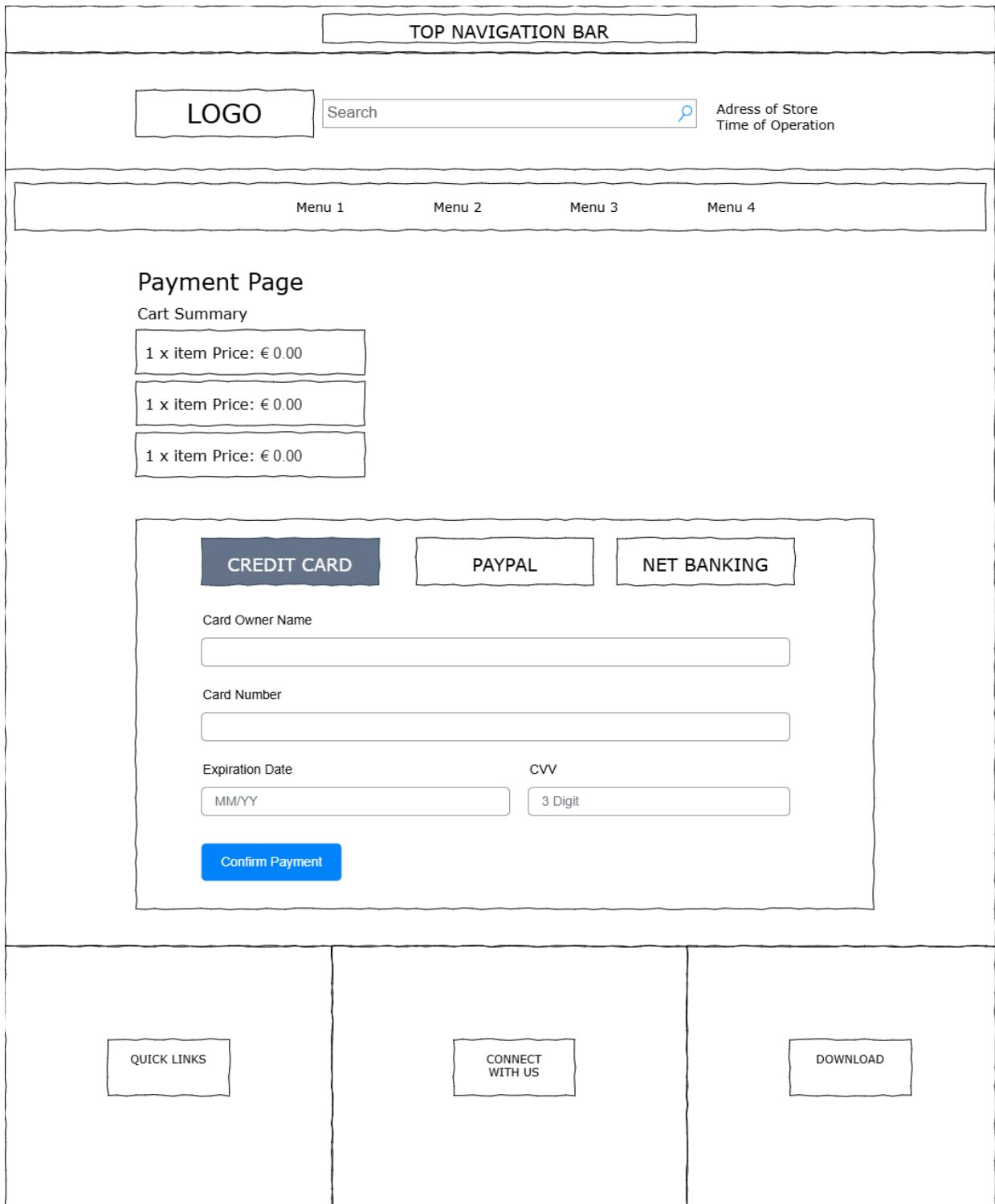


Fig.6 Payment Page (created by Adrian)

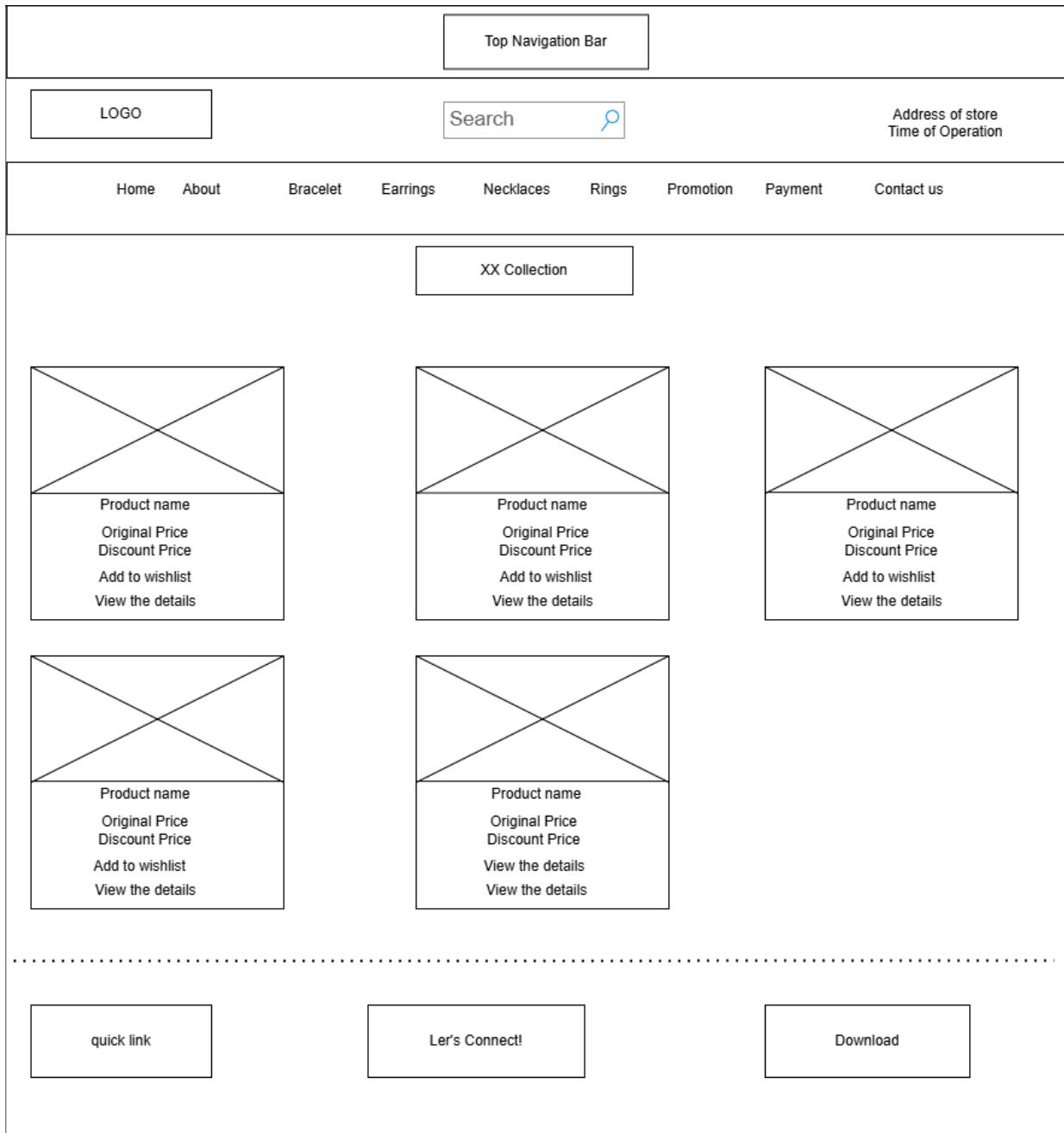


Fig.7 Category Page (created by Jia)

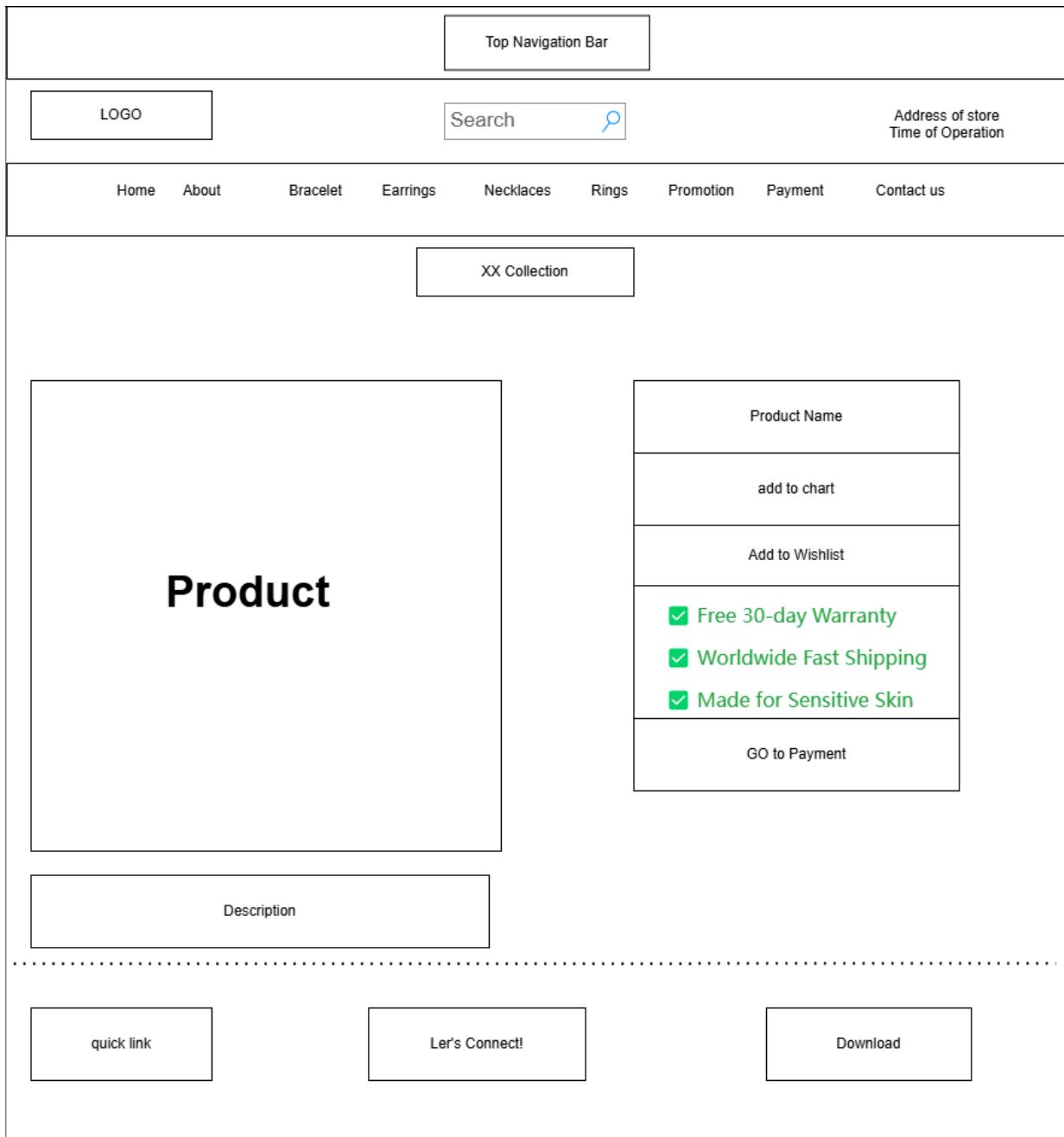


Fig.8 Product Details (created by Jia)

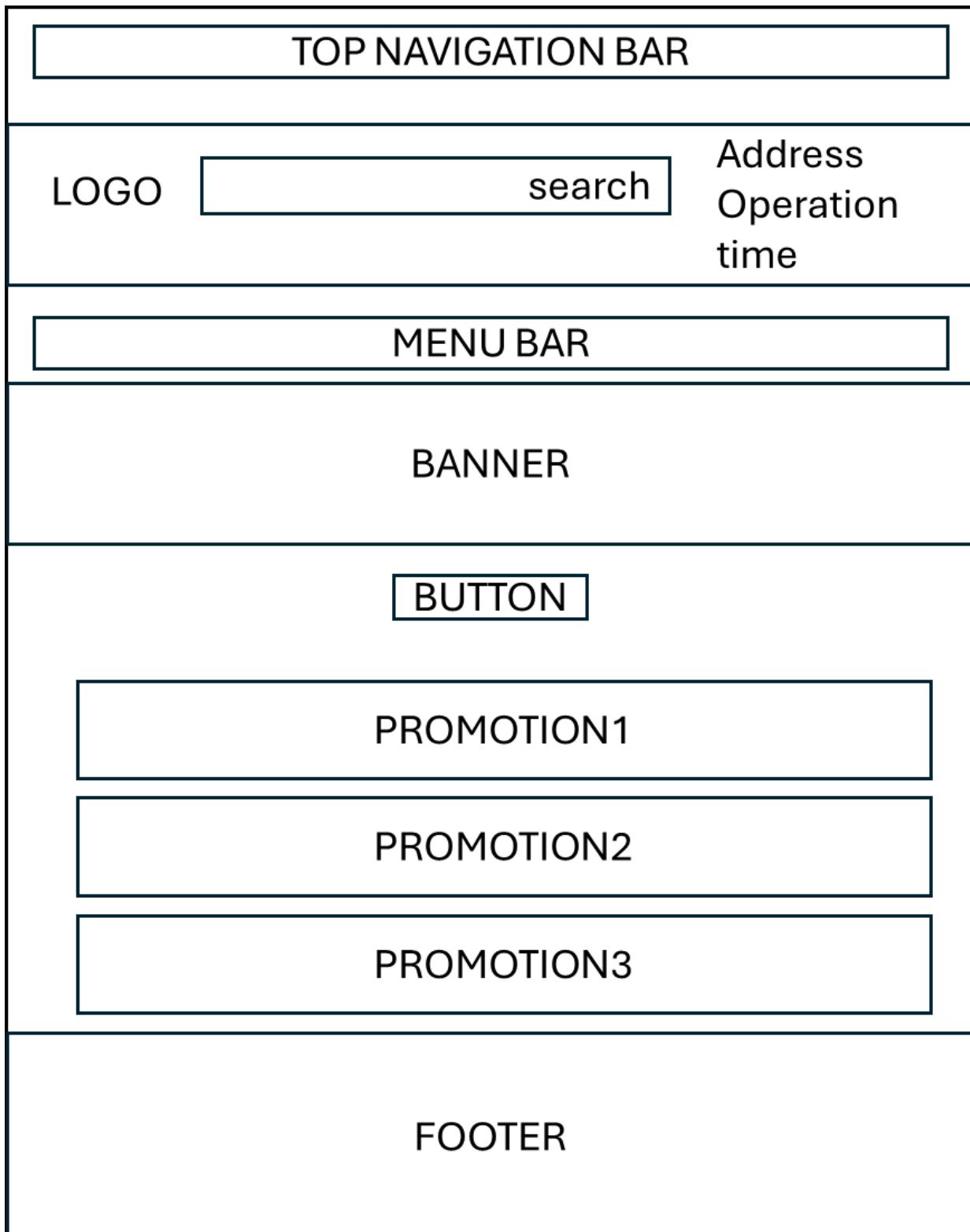


Fig.9 Promotion Page (created by Anh)

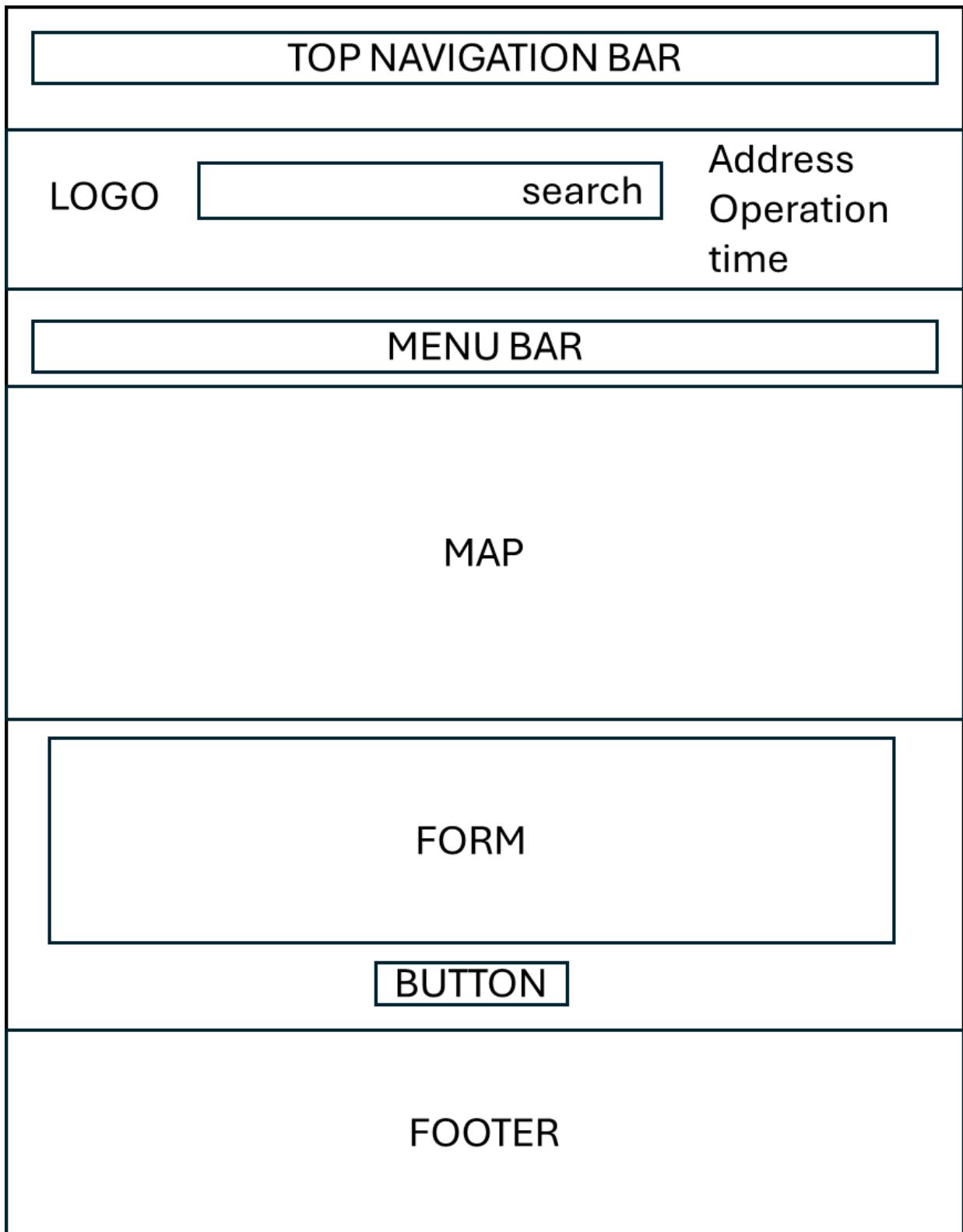


Fig.10 Contact Page (created by Anh)

2.4. Break Down of Tasks

Adrian: Adrian is particular for the structure of the website. Recommend to the team to have a proper structure and folder to access the images, html files, css stylesheets and javascript. Responsible for designing and developing the Homepage, the About Us Page and Payment Page. Adrian will ensure the homepage effectively showcases the brand's elegance and includes intuitive navigation. The payment page will be designed to provide a seamless and secure checkout experience for customers. Additionally, Adrian is also tasked to make the website responsive and make sure it works dynamically in all pages.

Jia: Tasked with creating the Product Page and Product details page for four product categories: Earrings, Rings, Bracelets, and Necklaces. Jia will develop a visually appealing product gallery for each category, ensuring that each product card displays key details, including the name, price, and an image. Interactive features, such as navigation to the respective product detail pages, were implemented using JavaScript. The Product Details Pages dynamically display individual product information, such as images, descriptions, original and discounted prices, enhancing the shopping experience. Jia will also ensure consistency in design and functionality across all categories, aligning with the project's branding and usability standards.

Anh: Anh is responsible for the Promotion Page and Contact Us Page on the Tír na nÓg website. The "Promotion" and "Contact Us" pages are designed to enhance user engagement and streamline customer interaction on the Tír na nÓg website. The **Promotion page** highlights current deals and new arrivals with visually appealing sections featuring best-sellers, new products, and a 50% off sale. Each section includes descriptive content, relevant images, and prominently displayed coupon codes to encourage purchases. A hero section with a compelling call-to-action ("Shop Now") draws attention to exclusive deals, while the page integrates responsive design and stylistic enhancements using Google Fonts and Bootstrap for a polished look. The **Contact Us page** focuses on seamless communication by including a contact form with input fields for name, email, and message, integrated with the EmailJS API for instant submissions. Upon successful form completion, users receive a confirmation message. The page also features an embedded interactive map displaying the store's location, alongside additional contact information such as email, phone numbers, and addresses. Both pages share a consistent header and footer design, featuring a search bar, social media icons linking to Facebook, Instagram, and TikTok, and quick navigation links. These cohesive elements ensure a user-friendly and aesthetically pleasing experience while effectively promoting the brand and simplifying customer interactions.

Each team member will use the approved UI kit and wireframes to maintain consistency and meet the project's design standards.

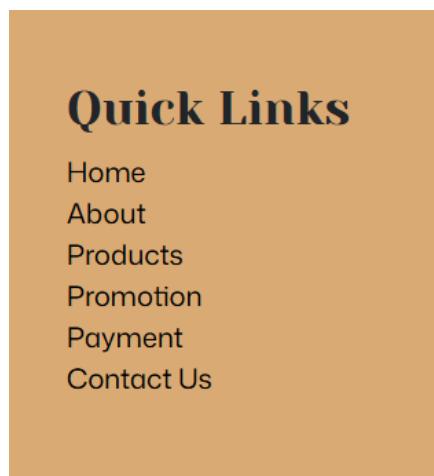
3. Development

3.1. Bootstrap implementation

In addition to the HTML, CSS, and JavaScript skills we have practiced throughout the semester, we dedicated time to learning and implementing Bootstrap to enhance the styling and responsiveness of our website. Bootstrap has proven to be a powerful tool for organizing page content and achieving specific design effects efficiently.

For example, on the Product Page, we utilized the Bootstrap Card component to create an elegant and organized product display, ensuring that the layout remains visually appealing across various devices. Similarly, the Homepage features a responsive hero section built with Bootstrap's Grid system, allowing for seamless adaptability to different screen sizes.

We gained valuable insights from our professor, Eugene, particularly in integrating dynamic Bootstrap components that leverage complex class grids to create a user-friendly and intuitive interface. To ensure the design reflects Tír na nÓg's branding, we overrode certain Bootstrap default styles with our custom CSS, achieving a unique and polished look for the website. This combination of Bootstrap and custom styling allowed us to create a visually cohesive and responsive platform.



```
<div id="quicklinks" class="col">
  <h3>Quick Links</h3>
  <ul>
    <li><a href="index.html">Home</a></li>
    <li><a href="about.html">About</a></li>
    <li><a href="products.html">Products</a></li>
    <li><a href="promotion.html">Promotion</a></li>
    <li><a href="payment.html">Payment</a></li>
    <li><a href="contact.html">Contact Us</a></li>
  </ul>
</div>
```

Fig.11 Footer menus section using only HTML and CSS (created by Anh)

The screenshot shows the header of the Tír na nÓg website. At the top left is the logo "Tír na nÓg". To its right is a search bar with the placeholder "Search" and a "Search" button. Further right is a text block "Your Store : (Open 09:30-18:00) Dublin City Centre". Below the header is a navigation bar with links: Home, About, Bracelet, Earrings (which is highlighted in blue), Necklaces, Rings, Promotion, Payment, and Contact Us.

```
<div id="menu-header">
  <div class="container">
    <nav class="navbar navbar-expand-lg navbar-light">
      <button class="navbar-toggler" type="button" data-toggle="collapse" data-target="#mainNavigation" aria-controls="mainNavigation" aria-expanded="false" aria-label="Toggle navigation"></button>
      <span class="navbar-toggler-icon"></span>
    </button>
    <div class="collapse navbar-collapse" id="mainNavigation">
      <div class="navbar-nav">
        <a class="nav-item nav-link active" href="index.html">Home</a>
        <a class="nav-item nav-link" href="about.html">About</a>
        <a class="nav-item nav-link" href="bracelet.html">Bracelet</a>
        <a class="nav-item nav-link" href="earrings.html">Earrings</a>
        <a class="nav-item nav-link" href="necklaces.html">Necklaces</a>
        <a class="nav-item nav-link" href="rings.html">Rings</a>
        <a class="nav-item nav-link" href="promotion.html">Promotion</a>
        <a class="nav-item nav-link" href="payment.html">Payment</a>
        <a class="nav-item nav-link" href="contact.html">Contact Us</a>
      </div>
    </div>
  </div>
</nav>
</div>
```

Fig.12 Menus section using HTML, CSS, and Bootstraps NavBar component
(created by Adrian)

Bracelets Collection

The image displays three product cards for bracelets, each featuring a photograph of the bracelet being worn and a detailed description below it.

- Starlight Hand Chain:** A hand wearing a gold chain bracelet with small circular pendants. Description: "Starlight Hand Chain" with original price €70.00 and discounted price €62.40. Buttons: "Add to Wishlist" and "View Details".
- Watch Out Bracelet:** A wrist wearing a gold chain bracelet with a large, ornate gold clasp. Description: "Watch Out Bracelet" with original price €30.00 and discounted price €24.00. Buttons: "Add to Wishlist" and "View Details".
- Western Wednesday Bracelet:** A hand wearing a stack of gold bracelets, including a wide band and several smaller rings. Description: "Western Wednesday Bracelet" with original price €65.00 and discounted price €52.00. Buttons: "Add to Wishlist" and "View Details".

Fig.13 Product display using HTML, CSS, and Bootstrap Card component
(created by Jia)

3.2. Javascript and jQuery implementation

jQuery was utilized in this project to enhance interactivity and functionality on the Tír na nÓg website:

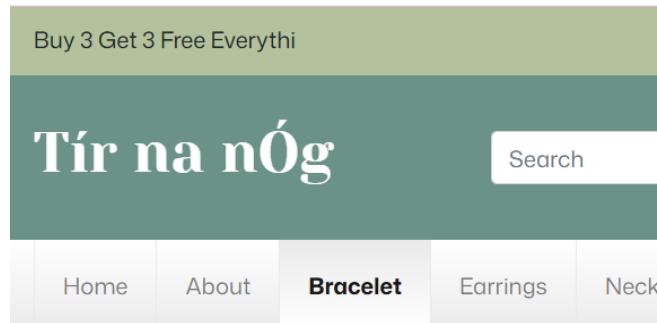


Fig.14 Marketing text above the logo (created by Adrian)

Animated Marketing Text

We implemented jQuery to create a dynamic movement for the marketing text displayed above the top menu. A series of text messages transitions smoothly, grabbing user attention and emphasizing promotions or key features. This animation adds an engaging visual element to the website's header.

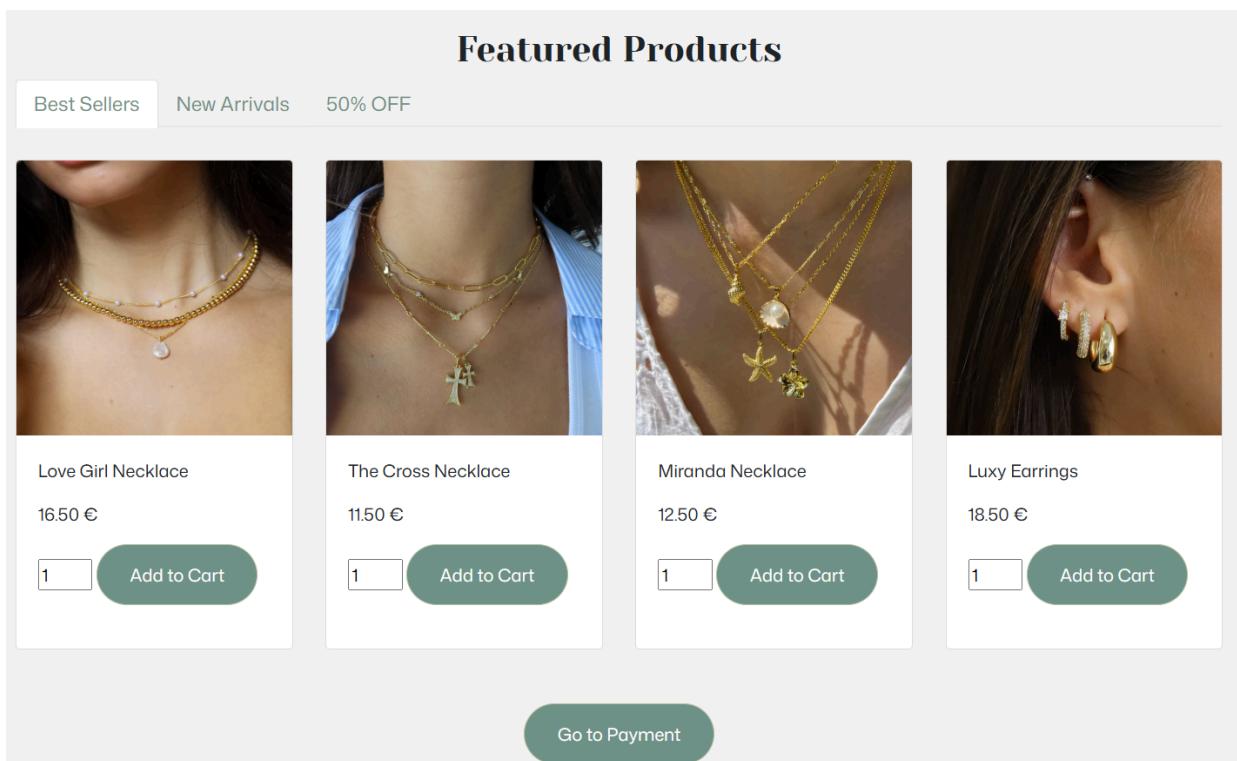


Fig.15 Add to Cart Button and Payment page (created by Adrian)

Add-to-Cart Functionality

Javascript was also used to handle the Add to Cart feature, ensuring a seamless user experience. When a user clicks the Add to Cart button, the selected product is dynamically added to the cart without the need for a page reload. The cart updates in real-time, reflecting the selected items and quantities, providing a smooth shopping experience.

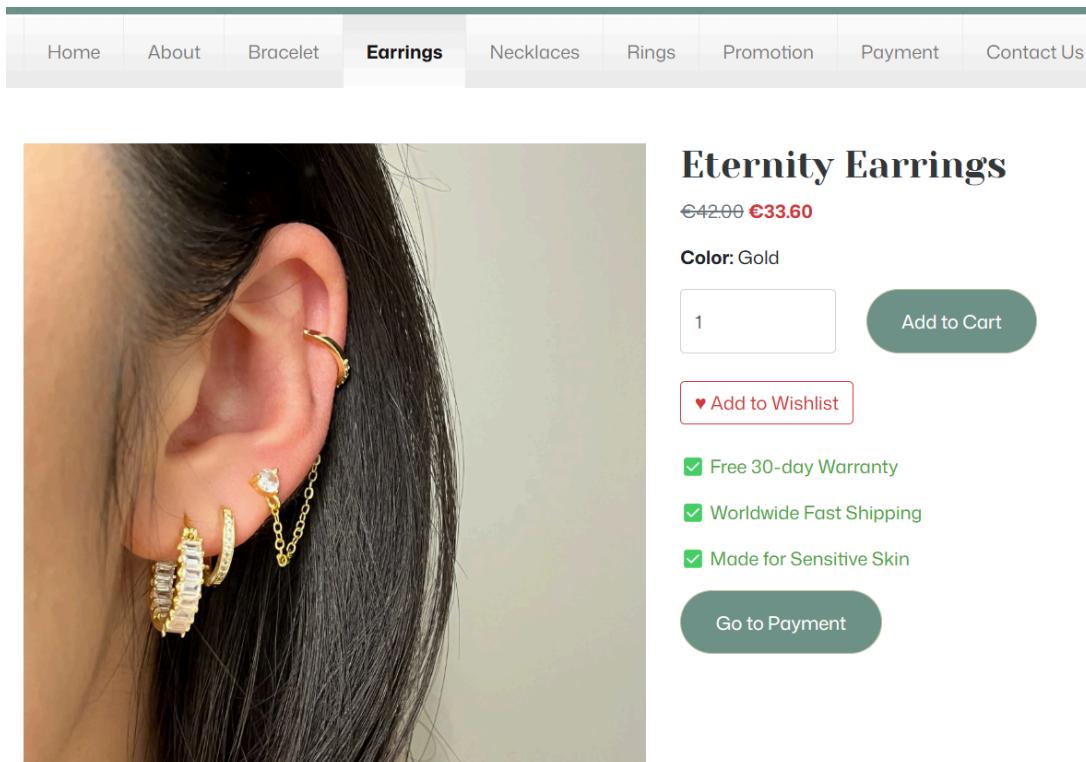


Fig.16 Dynamic display of product details (created by Jia)

Dynamic Product Display

jQuery enabled the dynamic display of products on the Product Page. For instance, when users select a specific category, the product list updates immediately to showcase relevant items, creating an intuitive and efficient browsing experience.

Contact Us

Your Name

Enter your name

Please enter your name.

Your Email

Enter your email

Please enter a valid email address.

Subject

Select a subject

Please select a subject.

Message

Enter your message

Please enter your message.

Send

Fig.17 Working Contact Form with EmailJS integration (created by Anh)

In addition to jQuery, JavaScript was used to integrate a robust **Contact Form** functionality into the *Tír na nÓg* website by utilizing the **Email.js** service as a third party website responsible to send email to the admin's email. This feature ensures seamless communication between users and the website administrators.

- **Contact Form Functionality:** When a user fills out the contact form and submits it, the form data is sent directly to the admin's email via the Email.js API. This implementation guarantees that inquiries, feedback, or messages are delivered in real-time.

The process works as follows:

1. **Form Submission:** When the user clicks the submit button, a JavaScript function is triggered.
2. **Email.js Integration:** The function gathers the form data (such as the user's name, email, and message) and uses Email.js to send the information to the admin's email address.
3. **Confirmation Message:** After a successful submission, the user receives a confirmation message on the page, ensuring them that their message has been sent. If an error occurs, an error message is displayed instead.

These implementations demonstrate how jQuery was effectively used to enhance the interactivity and user experience of the Tír na nÓg website.

3.3. Validation

HTML and CSS validators were utilized to ensure code quality before deploying the Tír na nÓg website. The HTML validator returned 2 informational messages, 9 plus errors, and 14 warnings. The CSS validator reported no errors, which we considered a satisfactory result.

One of the HTML errors was due to “ element must have an alt attribute.” To address this, we modified the code to add all the tag an alt attribute. Additionally, one of the warnings highlighted the “trailing slash” in our

 and tags, which is recommended and removed in all of our pages.

These adjustments ensured our code adhered to validation standards, resulting in a clean and optimized website ready for deployment.

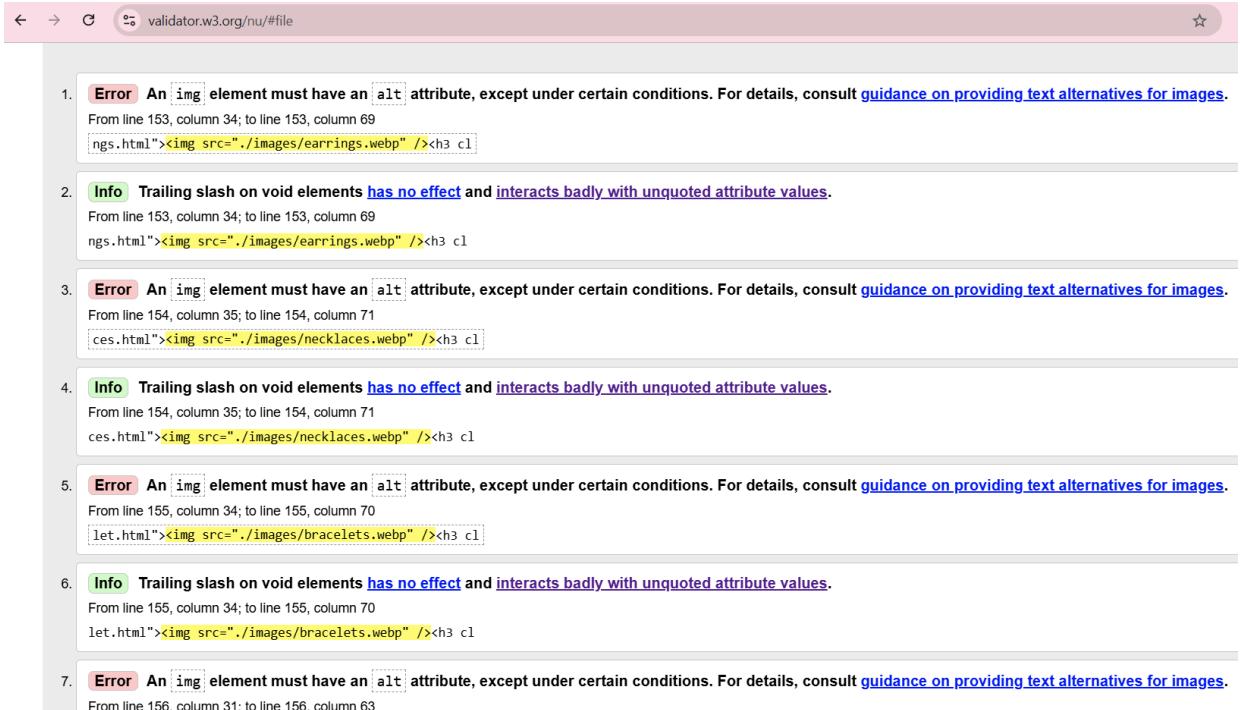


Fig.17 Errors returned by validator.w3.org

Nu Html Checker

This tool is an ongoing experiment in better HTML checking, and its behavior remains subject to change

Showing results for index.html

Checker Input

Show source outline image report

Check by file upload Choose File No file chosen

Uploaded files with .xhtml or .xht extensions are parsed using the XML parser.

Document checking completed. No errors or warnings to show.

Used the HTML parser.

Total execution time 11 milliseconds.

[About this checker](#) • [Report an issue](#) • Version: 24.11.29

Fig.18 No error returned after modification by validator.w3.org

The W3C CSS Validation Service
W3C CSS Validator results for general.css (CSS level 3 + SVG)

Jump to: [Validated CSS](#)

W3C CSS Validator results for general.css (CSS level 3 + SVG)

Congratulations! No Error Found.

This document validates as [CSS level 3 + SVG](#) !

To show your readers that you've taken the care to create an interoperable Web page, you may display this icon on any page that validates. Here is the XHTML you could use to add this icon to your Web page:

```
<p>
  <a href="http://jigsaw.w3.org/css-validator/check/referer">
    <img style="border:0; width:80px; height:31px;" alt="Valid CSS!" />
  </a>
</p>
```



```
<p>
  <a href="http://jigsaw.w3.org/css-validator/check/referer">
    <img style="border:0; width:80px; height:31px;" alt="Valid CSS!" />
  </a>
</p>
```

(close the img tag with > instead of /> if using HTML <= 4.01)

Fig.19 CSS validation: no error returned.

3.4. Optimization & SEO

To optimize the Tír na nÓg website and improve its visibility on search engines, we employed several key techniques:

High-Quality Content and Keywords: We created relevant, high-quality content tailored to the target audience, incorporating accurate keywords and descriptive titles across all pages to enhance search engine rankings.

Streamlined Page Structure: We ensured a simple and logical page structure, keeping JavaScript separate from the HTML files to maintain clean code and improve website performance.

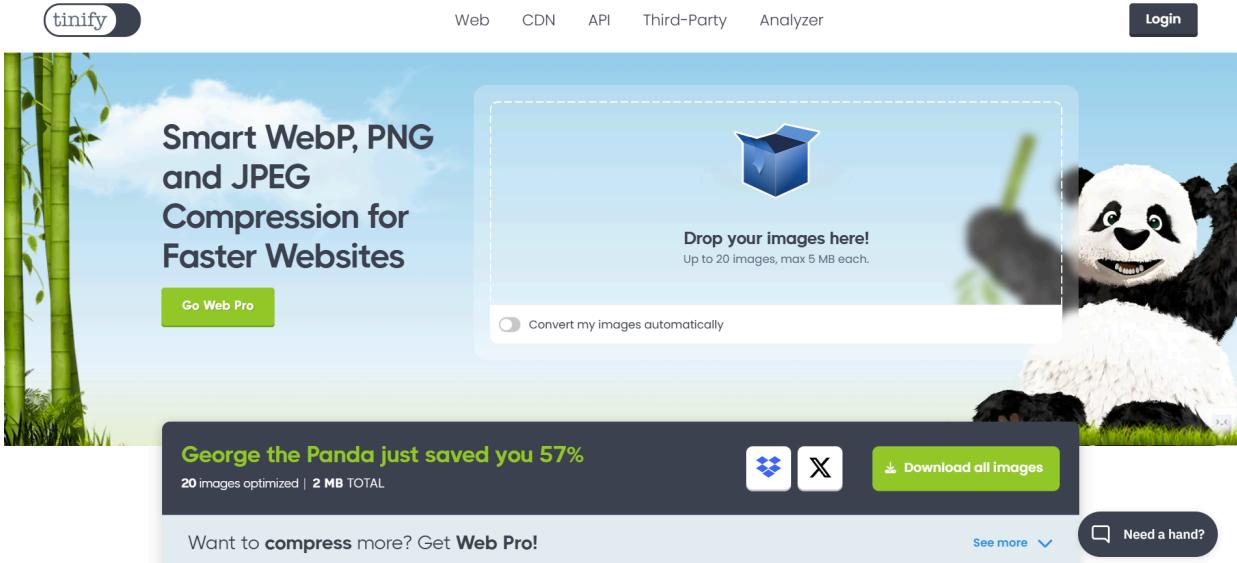


Fig.20 Homepage of tinypng.com

Image Optimization: Using an Image Optimizer, we reduced the file sizes of all images without compromising quality. This significantly improved the loading speed of the website, enhancing the overall user experience and SEO performance.

Fig.21 Homepage of adlift.com

Meta Tags: Meta tags with optimized keywords were added to every page, ensuring better indexing by search engines and increasing the likelihood of appearing in relevant searches.

```

<div id="collections">
  <div class="container">
    <h2 class="text-center">Collections</h2>
    <ul>
      <li><a href="earrings.html"><h3 class="catg-name">Earrings</h3></a></li>
      <li><a href="necklaces.html"><h3 class="catg-name">Necklaces</h3></a></li>
      <li><a href="bracelet.html"><h3 class="catg-name">Bracelets</h3></a></li>
      <li><a href="rings.html"><h3 class="catg-name">Rings</h3></a></li>
    </ul>
  <div class="clearfix"></div>
  <h2 class="text-center nt-3">Coming Soon</h2>
  <ul>
    <li><a href="#"><h3 class="catg-name">Jewelry Bundles</h3></a></li>
    <li><a href="#"><h3 class="catg-name">Hand Chains</h3></a></li>
    <li><a href="#"><h3 class="catg-name">Stocking</h3></a></li>
    <li><a href="#"><h3 class="catg-name">Custom Jewelry</h3></a></li>
  </ul>
</div>
<div class="clearfix"></div>

```

Fig.22 Sample code in index.html with anchor optimization

Anchor Optimization: We improved anchor text by using detailed and accurate descriptions with relevant keywords for all links and images. This not only enhanced navigation but also contributed to the website's SEO ranking.

These combined efforts ensure the Tír na nÓg website is not only visually appealing and functional but also easily discoverable by potential customers through search engines.

3.5. Testing & Responsiveness

3.5.1. Responsiveness

To ensure the Tír na nÓg website is fully responsive across various devices, we focused on the following areas:

Meta Tag

```
<meta name="viewport" content="width=device-width, initial-scale=1.0">
```

A meta viewport tag was added to the `<head>` element on every page, with its content set to 'width=device-width, initial-scale=1.0'. This ensured the website scales appropriately to fit different screen sizes, particularly for mobile devices.

Media Queries

```
@media only screen and (max-width: 1024px) {
  /** Code Here ***/
}
```

Media queries were employed to apply specific styles for different devices and screen sizes. This allowed us to optimize the layout for desktops, tablets, and mobile devices, ensuring a consistent and user-friendly design.

Plain Color Backgrounds

The property "background-color: color" was applied to all background images to ensure they cover the entire screen on any device, providing a visually cohesive look regardless of screen dimensions.

Bootstrap Framework: The Bootstrap framework was integral to achieving a responsive layout. CSS and JS links were appropriately placed in the <head> element and before the closing <body> tag, respectively, to enable Bootstrap functionality. The grid system was used extensively to organize content. For instance, on the Product Page, we implemented a container div with a row div containing columns with breakpoints such as col-lg-3 and col-md-6. This setup allowed the page to display four product cards per row on larger screens ($\geq 960\text{px}$) and two cards per row on medium screens ($720\text{px} - 960\text{px}$), while switching to one card per row on smaller devices ($< 720\text{px}$).

These measures ensured that the Tír na nÓg website provides an optimal viewing experience for users, regardless of the device they use.

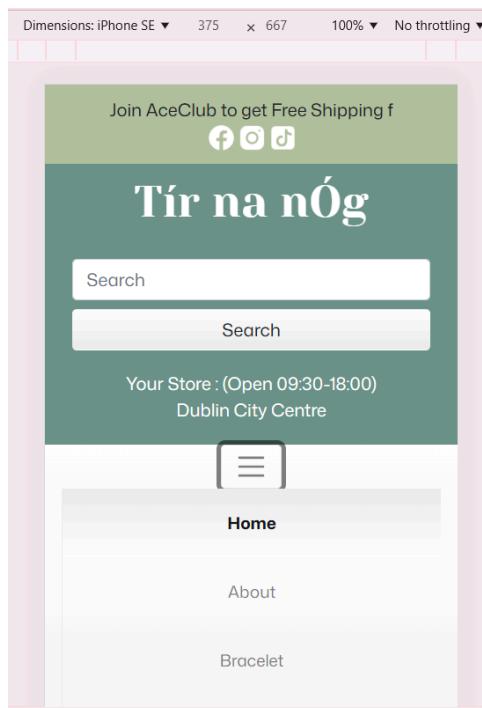


Fig.23 Screenshot of the mobile responsive using inspect element in google

```
/* MOBILE 500px */
@media only screen and (max-width: 500px) {
    body {
        text-align: center;
    }

    input#search-input {
        min-width: 100%;
    }

    button.btn.my-2.my-sm-0 {
        width: 100%;
    }

    div#featured-products {
        padding: 0px;
    }

    footer {
        padding: 50px 0;
    }
}
```

Fig.24 Media queries css code for mobile responsive

```
/* IPAD 1024px */
@media only screen and (max-width: 1024px) {
    div#opening-hours {
        text-align: center;
    }

    a.nav-item.nav-link {
        font-size: 15px;
    }

    div#collections li {
        float: none;
        display: flex;
        justify-content: center;
    }

    .card {
        text-align: center;
    }

    .ajbutton {
        padding: 10px;
        margin-top: 14px;
    }
}
```

Fig.25 Media queries css code for iPad responsive

3.6. Website Deployment

Our website was deployed on GitHub.

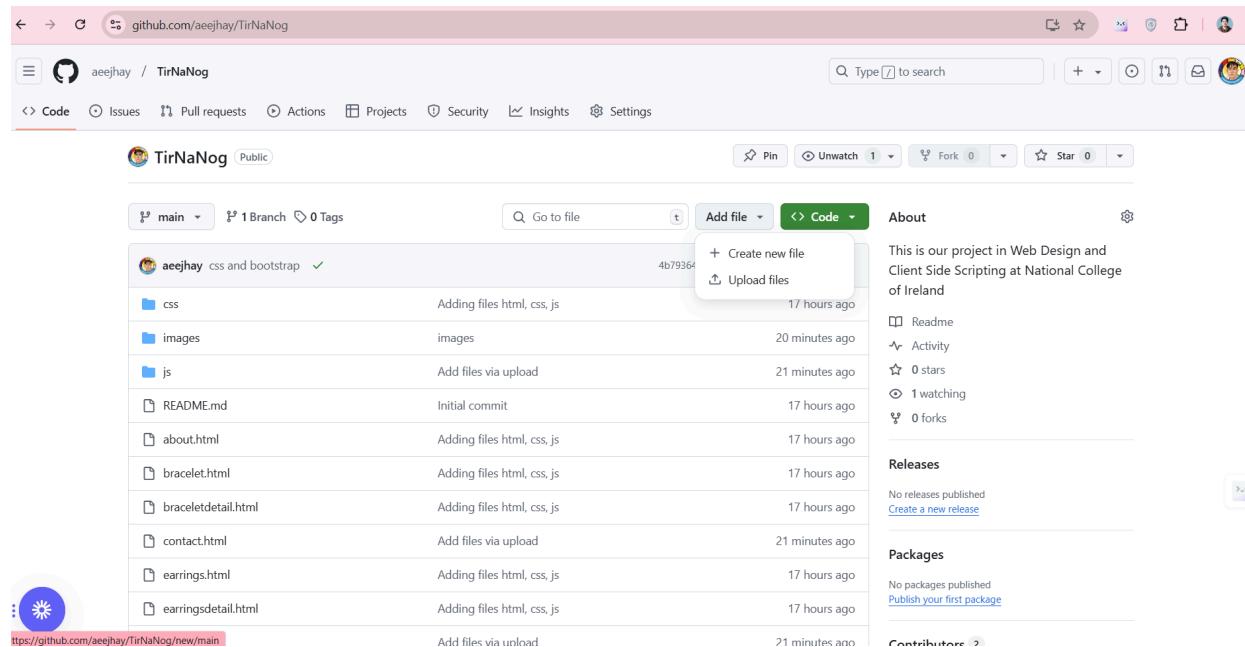


Fig.26 Screenshot of github project

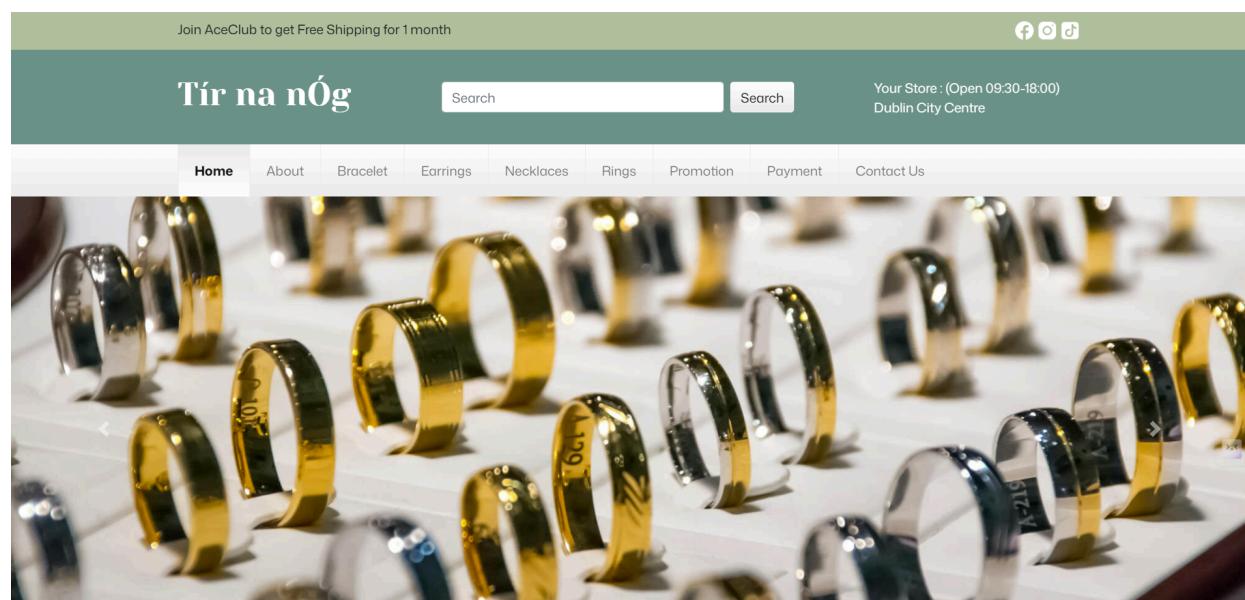


Fig.27 Screenshot of the website online.

<https://aeejhay.github.io/TirNaNog/>

4. Conclusion

4.1. Results, Achievement, Teamwork, and Possible Improvement.

Overall, the team is proud of the completed website, which successfully fulfills all the initial requirements and aligns with the vision for Tír na nÓg. We effectively applied the concepts and techniques learned in class, and in the process, expanded our skills in website development, user experience design, and project collaboration.

Teamwork was a key factor in the project's success. Each team member displayed a high level of respect, responsibility, and commitment to their tasks. We conducted more than 10 meetings throughout the project, with full attendance and active participation from every member. Beyond completing individual responsibilities, the team worked collaboratively, sharing ideas, resources, and solutions in our group chat. This consistent communication allowed us to efficiently address challenges and maintain progress, making the project a rewarding learning experience for all.

If given more time, there are two key areas we would like to improve. First, we would enhance the Terms & Conditions section by adding detailed content and a functional link within the registration form. Additionally, we also want to integrate the API of our payment method, be more functional and have a basic payment gateway. If given more time we want to add a customized jewelry page where users can design their own jewelry and we aim to introduce a feature on the Product Page that dynamically updates the product categories based on inventory changes, providing an even smoother user experience.

Overall, this project was an excellent opportunity to apply classroom knowledge in a real-world context, fostering both individual growth and team collaboration.

5. References

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