

GREENWICH LANDMARK PICTURES SELLING WEBSITE



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Introduction

Explore and buy historic locations within the Old Royal Naval College with ease using the Greenwich Landmark Pictures Selling website, a state-of-the-art e-commerce platform. The full-stack online application integrates User-Centered Design (UCD) concepts to ensure accessibility for seniors and a range of age groups, while also catering to diverse user profiles. This project combines modern design techniques, prioritizing usefulness above looks, and presents a creative fusion of front-end and back-end technologies. This web Site preserves history one click at a time, revealing the magnificence of historical artworks with every user contact. The goal of building a website for Greenwich Landmark Pictures is to provide a user-friendly online store for buying landmark photos. This project blends modern User-Centered Design (UCD) ideas inside a full-stack implementation, emphasizing usability across a range of demographics.

Part 1: Analysis design and front-end implementation

1. User-Centered Design (UCD) Solutions for System Analysis

Selling website as it helps cater to a wide range of user demands from different demographics and guarantees a smooth and effortless browsing and shopping experience. Five or more different user needs have been determined by using UCD approaches including personas, surveys, and user interviews. These specifications are focused on meeting the needs of various age groups and physical types of prospective clients in order to make the website accessible to older persons with a range of health and social issues (Baptist *et al.* 2021). By taking into account accessibility, adaptable design, and user-friendly navigation, the UCD method guarantees inclusion (Quezada-Sarmiento *et al.* 2023). This entails designing a user interface with a focus on utility rather than aesthetics that can be adjusted to various devices. Based on thorough user research and adhering to UCD best practises, the design decisions are supported by concise justifications and illustrations. The criteria that have been established, derived from UCD principles, are intended to improve the user experience by placing a strong emphasis on usability and simplicity of interaction for all possible users.

2. Utilization of UCD Requirement Elicitation Tools

Persona

Persona: Emily Thompson

Age: 68

Occupation: Retired

Background: The target persona is Emily, a retired school teacher with an interest in art and history. Her interest in historical landmarks has recently grown, and she's looking for an easy-to-use platform where she can browse and buy images of famous locations.

Challenges:

Emily's age-related health problems limit her movement. Her ideal website design would be more approachable and straightforward, with larger letter sizes for easier reading. She is a non-techie user who appreciates easy navigation and a smooth surfing experience.

Goals and Preferences:

Finding and acquiring gorgeous historical landmark photos is Emily's main objective. She enjoys reading in-depth explanations of each image so that she can comprehend its historical significance. She also appreciates a simple and safe registration procedure.

Technology Usage:

Even though Emily is not very tech savvy, she browses the internet on a desktop computer. She is partial to a website that is both accessible and responsive.

Interaction Expectations:

Emily anticipates a fun and tailored internet experience. She is looking for a website that accommodates her particular tastes, cherishes good communication, and appreciates help when she needs it.

Quote:

"I enjoy looking at photographs of historical sites to learn more about them. My goal is to come across a website that comprehends my requirements and makes the exploration procedure easy and pleasurable".

The Greenwich Landmark Pictures Selling website's character, Emily, stands in for a portion of its target market and highlights the value of accessibility and user-friendly design for people with a range of requirements and preferences.

Questionnaires

1. How often do purchase online for merchandise that is digital?

2. What aspects of buying digital photos do you consider important?
3. How essential is user-friendliness when it comes to buying photographs on a website?
4. What characteristics are looking for in an iconic picture-selling website?
5. How important is it that has a thorough caption for every picture?
6. Do you have a favorite way to browse these photos, such as by date, locations, or popularity?
7. What extent does feel at ease navigating the internet, particularly when visiting unfamiliar websites?
8. Which accessibility elements are essential for a user-friendly experience, in your opinion?
9. What extent does worry about the security of your personal information when you shop online?
10. Would you rather have to register in order to make purchases?

3. Implementation of Modern UCD Principles for Responsive User Interface (UI)

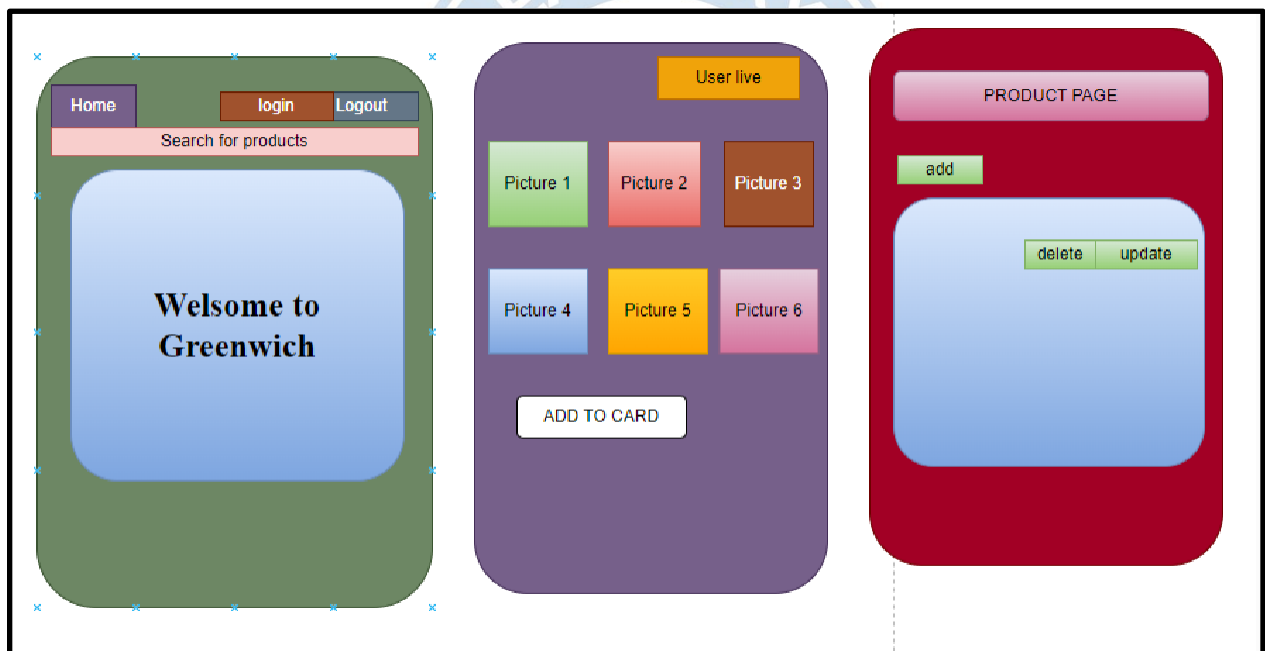


Figure 1: UI design

(Source: Self-developed)

The Landmark Pictures-Selling Website's user interface (UI) design is shown in Figure 1, which shows a responsive layout that works with both desktop and mobile devices. The layout is simple and easy to use, and the design maintains a unified look across all platforms (Eda& Do, 2019).

The mobile design guarantees excellent use with a short menu and immediately accessible search capability, while the desktop version has an organized menu bar that effectively categorizes landmark photographs. Both interfaces put an emphasis on responsive features, easy-to-use navigation, and clear picture presentation to provide users with a smooth browsing experience on a range of devices and screen sizes. The responsive User Interface (UI) design effectively employs the concepts of current User-Centered Design (UCD), demonstrating adaptability across many platforms, including desktop and mobile. The user interface (UI) is a prime example of a smooth user experience since it includes responsive elements that change dynamically to fit different screen sizes and resolutions.

The user interface (UI) of desktop interfaces places an emphasis on a thorough layout with organised navigation, guaranteeing simple access to various parts and iconic images. Conversely, the mobile interface makes the most use of available space with its compacted but user-friendly design, which includes easy-to-use features like touch-friendly controls and streamlined menus (Kalmukov and Marinov, 2023). This strategy not only shows responsiveness but also highlights the UCD's focus on accessibility, guaranteeing users receive a consistent and customized experience across all devices. The versatility of the user interface highlights its user-centric approach, giving users' requirements and behaviors across a range of platforms first priority.

4. Front-end Website Development with Comprehensive Components

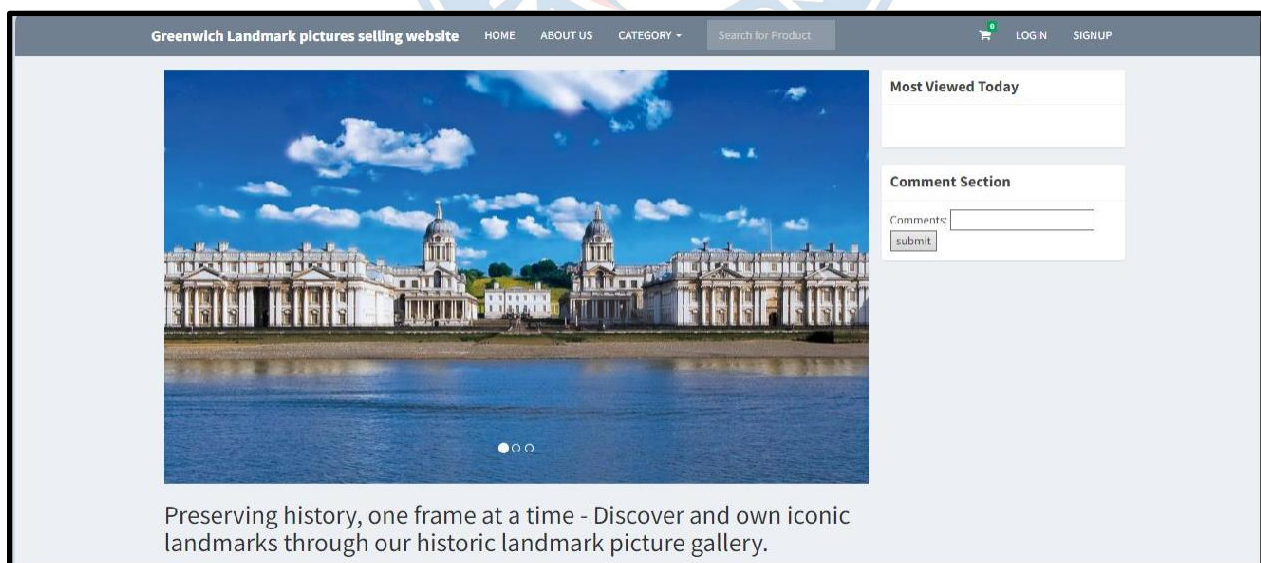


Figure 2: Home page of web application

(Source: Self-developed)

Access to the Greenwich Landmark Pictures Selling website is made possible by the aesthetically pleasing and intuitive interface. In order to improve user accessibility, the design includes a simplified navigation menu with categories like “*About Us*”, “*Categories*”, and “*Sign Up*”. Popular landmark photos are featured in the “*Most Viewed Today*” area to draw viewers in, while the “*Comment area*” encourages user interaction. Through the use of famous sites to preserve history, the imagery evokes a sense of nostalgia. The website's objective is to give consumers a smooth experience when discovering and acquiring historical landmark photos, and this is embodied in the entire design, which is both aesthetically beautiful and functional.

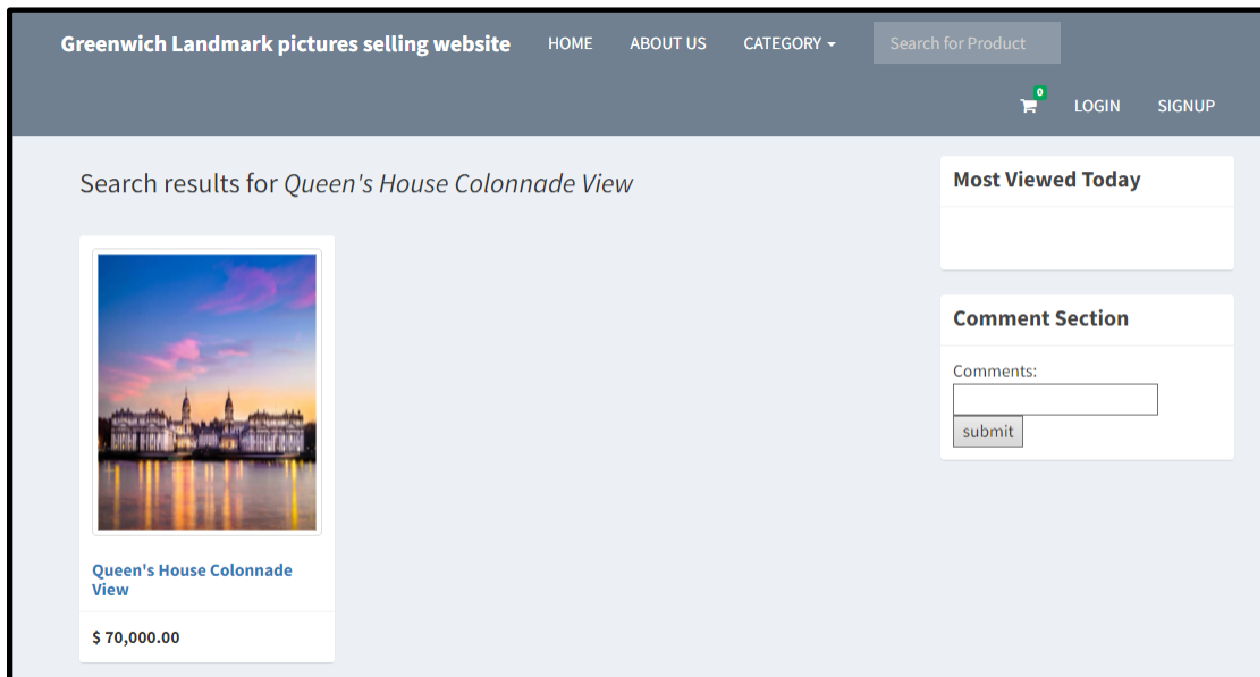


Figure 3: Search page of web application

(Source: Self-developed)

The online application's search results for “Queen’s House Colonnade View” are displayed. The article offers a comprehensive look at the Queen’s House Colonnade, which costs \$70,000. The user-friendly experience is ensured by the simple design, which concentrates on presenting pertinent information (Okerekeet *al.* 2023). Potential customers can make decisions more quickly because of the picture and the information provided. The uncomplicated presentation, which provides a smooth exploration of landmark photos with obvious pricing information, is in line with the website's dedication to simplicity and user-centric design. The search page successfully achieves its goal of helping users locate and obtain the historical imagery they're looking for.

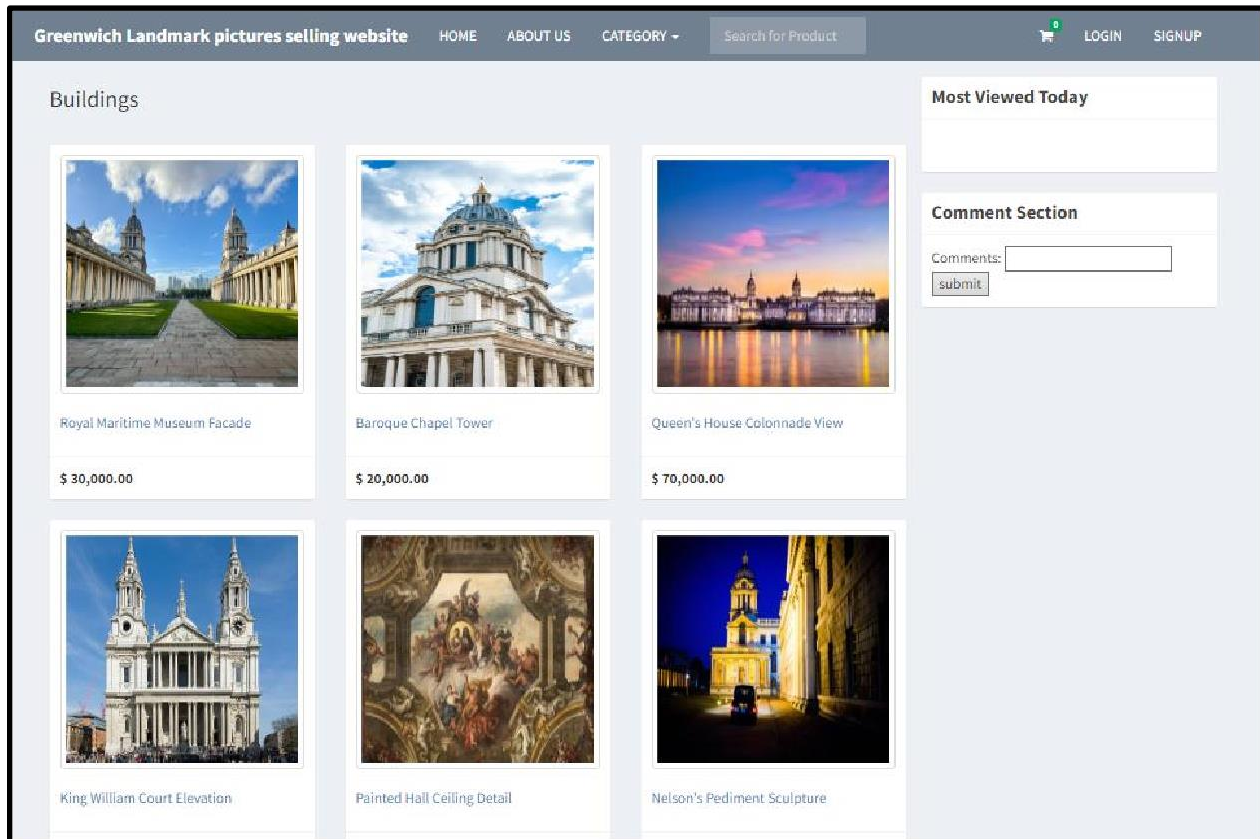


Figure 4: Product page of web application
(Source: Self-developed)

The web application's "**Product page**" showcases a sophisticated presentation of the product data for famous landmarks. Baroque Chapel Tower, Queen's House Colonnade View, and the Royal Maritime Museum Facade are just a few of the buildings with eye-catching designs that go along with their corresponding costs of \$30,000, \$20,000, and \$70,000. The design is well-thought-out and offers a smooth surfing experience. The user-centered approach is in line with the succinct yet informative design, which makes it easy for consumers to peruse and contemplate buying historical landmark pictures. The product page efficiently highlights the different architectural beauty offered on the website, enabling readers to immerse themselves in these preserved historical moments with clear price information and appealing pictures.

Part 2: System and Back-End Implementation

5. Back-end Database Design: Entity-Relationship Diagram (ERD)

The Entity-Relationship Diagram (ERD) for the Landmark Pictures-Selling Website is formed by the relational structure of the tables in the back-end database, which is outlined in the schema that is given. The interconnections between different parts of the system are established by the ERD by using primary keys (PK) and foreign keys (FK) to show the links between things.

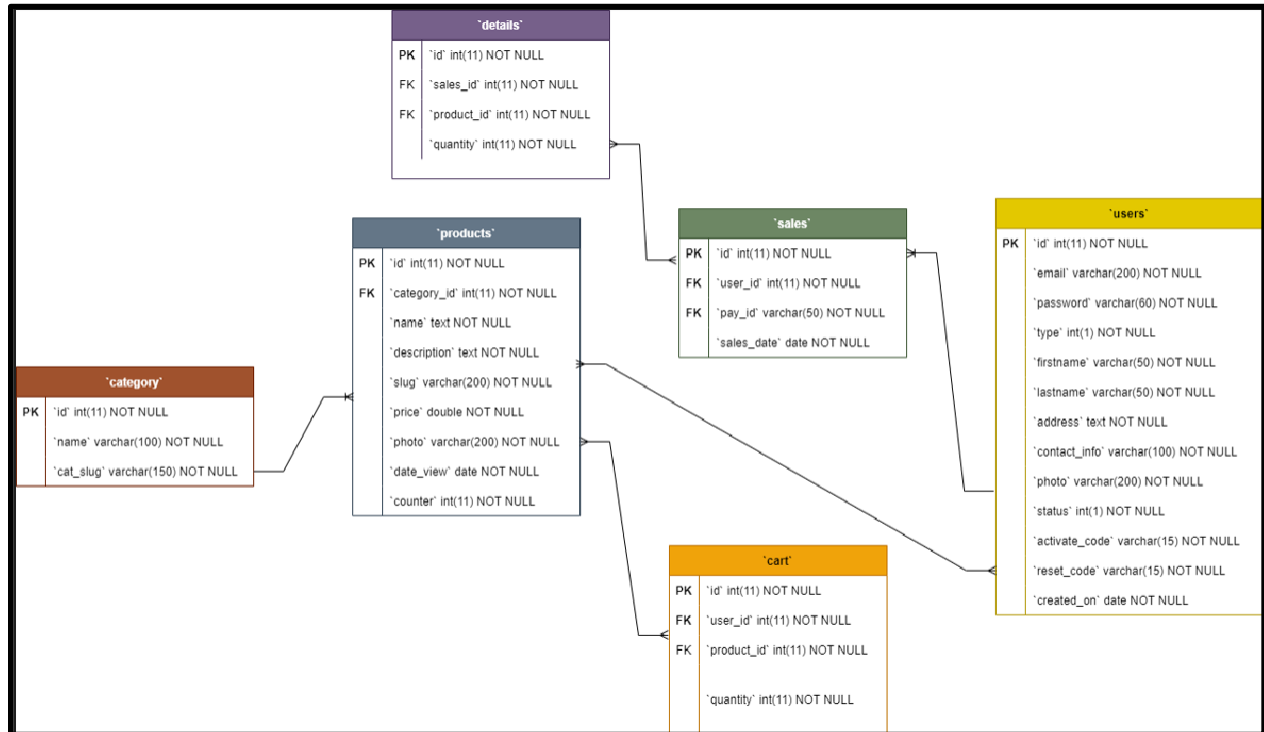


Figure 5: ERD
(Source: Self-developed)

The links between key tables, including "cart," "category," "details," "products," "sales," and "users," are shown. By using keys ('id,' 'user_id,' 'product_id,' etc.) to link these tables, the database is able to preserve important relationships and dependencies between various data types. The ERD acts as the database's fundamental blueprint, delineating the connections and organizational structure required for the features of the website. It illustrates the relationships between entities, enabling effective data retrieval, changes, and system maintenance. This ERD serves as the foundation for the back-end database architecture, giving the functionality and data administration of the Landmark Pictures-Selling Website the required structure.

6. Functional Login Page Development

```

login.php
1  <?php include 'includes/session.php'; ?>
2  <?php
3      if(isset($_SESSION['user'])){
4          header('location: cart_view.php');
5      }
6  ?>
7  <?php include 'includes/header.php'; ?>
8  <body class="hold-transition login-page">
9  <div class="login-box">
10     <?php
11         if(isset($_SESSION['error'])){
12             echo "
13                 <div class='callout callout-danger text-center'>
14                     <p>".$_SESSION['error']. "</p>
15                 </div>
16             ";
17             unset($_SESSION['error']);
18         }
19         if(isset($_SESSION['success'])){
20             echo "
21                 <div class='callout callout-success text-center'>
22                     <p>".$_SESSION['success']. "</p>
23                 </div>
24             ";
25             unset($_SESSION['success']);
26         }
27     ?>
28     <div class="login-box-body">
29         <p class="login-box-msg">Sign in to start your session</p>
30
31         <form action="verify.php" method="POST">
32             <div class="form-group has-feedback">

```

Figure 6: Code of login.php

(Source: Self-developed)

The PHP script that is provided creates a login page for a web application's user authentication. The user gets redirected to the cart view page after it first determines whether the user session is still active. The system also takes the user to the cart view after a successful login. The script displays a simple HTML structure with callout boxes displaying error and success messages. It contains email and password entry areas, confirming their existence prior to submit. Using the "verify.php" script, users can validate their email address and password on the form in order to log in. It also provides choices for user registration, password recovery, and a fast route back to the homepage.

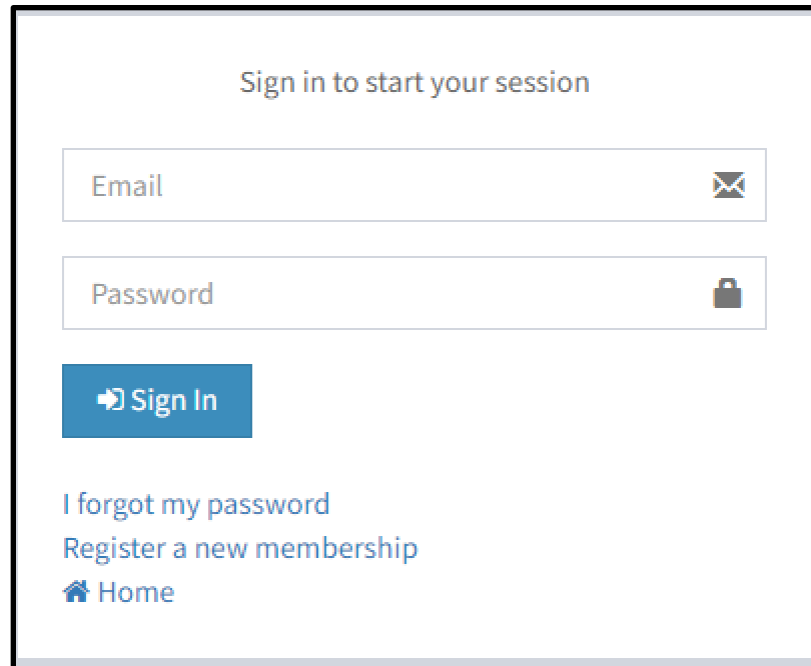


Figure 7: Functional login page

(Source: Self-developed)

Users are greeted with a simplified login screen in “Figure 6: Functional login page”, which facilitates a smooth and easy login process to the Greenwich Landmark Pictures Selling website. The page has all the necessary components, such as password and email boxes, to make the authentication procedure simple. By using the *“I forgot my password”* link, users can retrieve their password (Lin *et al.* 2023). Alternatively, they can use the *“Register a new membership”* button to start a new membership registration. The design prioritizes functionality over complexity, reflecting a user-centric approach. The login page offers customers a quick and easy method to explore the website's capabilities and access personalized features thanks to its user-friendly structure and obvious calls to action.

7. Functional Registration Page Development

```

register.php
9      $lastname = $_POST['lastname'];
10     $email = $_POST['email'];
11     $password = $_POST['password'];
12     $repassword = $_POST['repassword'];
13
14     $_SESSION['firstname'] = $firstname;
15     $_SESSION['lastname'] = $lastname;
16     $_SESSION['email'] = $email;
17
18
19     if($password != $repassword){
20         $_SESSION['error'] = 'Passwords did not match';
21         header('location: signup.php');
22     }
23     else{
24         $conn = $pdo->open();
25
26         $stmt = $conn->prepare("SELECT COUNT(*) AS numrows FROM users WHERE email=:email");
27         $stmt->execute(['email'=>$email]);
28         $row = $stmt->fetch();
29         if($row['numrows'] > 0){
30             $_SESSION['error'] = 'Email already taken';
31             header('location: signup.php');
32         }
33         else{
34             $now = date('Y-m-d');
35             $password = password_hash($password, PASSWORD_DEFAULT);
36
37             $set='123456789abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ';
38             $code=substr(str_shuffle($set), 0, 12);
39

```

Figure 8: Code of Regrester.php

(Source: Self-developed)

A web application's user registration page is seen in the PHP script that is given. For registration reasons, it has form sections where users may enter their email address, password, first and last names, and password confirmation. The form utilizes placeholder attributes to provide advice and makes sure that all required fields are filled out before submitting. In order to provide a more seamless registration process, PHP logic is included to save user-entered data in the event of a mistake. Callout boxes for user feedback show error and success messages. The page also includes a direct link back to the homepage for convenience and connects to the login page for current members.

Register a new membership

Firstname

Lastname

Email

Password

Retype password

Sign Up

[I already have a membership](#)

[Home](#)

Figure 9: Functional registration page

(Source: Self-developed)

As seen in “Figure 7: Functional registration page”, the Greenwich Landmark Pictures Selling website's user-friendly registration interface has been carefully designed to lead visitors through a simple and easy registration process. First name, last name, email, and password fields are all prominently labeled on the website, and there’s a retype password confirmation tool. The “Sign Up” button makes it easy to register, and there’s a convenient link to log in for current members. User experience is given top priority in the functional design, guaranteeing a seamless onboarding procedure. The registration page, with its simple form elements and clear instructions, is a prime example of the website's dedication to user-centric design and accessibility.

				id	email	password		type	firstname	last
☐				1	admin@admin.com	\$2y\$10\$0SHFfoWzz8WZpdu9Qw//E.tWamILbINCX7bqhy3od0g...		1	Admin	Liv
☐				13	user@gmail.com	\$2y\$10\$fxDiPcuOFZY.ullYrjE8zuQnxKLFaFvKH3XrvaUv1G0...		0	user	us
☐				14	user@user.com	\$2y\$10\$Yd2dOLMW4Q.YeY82vS37ZeelcOIsSsn2KCBx9hXvJ/B...		0	user	us
☐				15	user@user1.com	\$2y\$10\$kWwnA7Iy98xUm6WY3rDXYupVW6XRvOTOMtaCMEIEHql...		0	user	us
☐				16	user@user2.com	\$2y\$10\$uVorJTOgHvCMtBMg3IS.KObupPKmeA0q2C3/LCi6fO...		0	user	us
☐				17	user@user3.com	\$2y\$10\$W3pA9ehsdGqQeZdFe1OvvODKkarv9CB0CQNBzs8wVI...		0	adsasd	as
☐				18	hiuser@gmail.com	\$2y\$10\$g3e238yLg.td1t.v.6/85OOoXbcZOF8b40PNLf08774...		0	user4	us

Figure 10: Database of user

(Source: Self-developed)

A thorough overview of the user database is shown in "Figure 8: Database of users," which includes important details such as user IDs, email addresses, encrypted passwords, user types, and first names. The table displays a range of user profiles, comprising an administrator account and multiple user entries. Every row represents a distinct user, and security is guaranteed by encrypted password hashes. The '0' and '1' user types indicate which are admin and normal users. This well-structured database provides a safe and customized user experience on the Greenwich Landmark Pictures Selling website by acting as the foundation for user identification and personalized interactions.

8. Creation of Functional Loading Items Forms

Greenwich



Admin Lives

Online

REPORTS

 Dashboard

 Sales Report Monthly

MANAGE

 Users Details

 Picture Hub

Picture Hub List

Category

Product List

Home

Products

Product List

Category: ALL

Search:

New

Show 10 entries

Name	Photo	Description	Price	Views Today	Tools
Admiral Nelson Statue		 Q View	\$ 30,000.00	0	 Edit  Delete
Baroque Chapel Tower		 Q View	\$ 20,000.00	0	 Edit  Delete
King William Court Elevation		 Q View	\$ 25,000.00	0	 Edit  Delete
Maze and Topiary Garden		 Q View	\$ 30,000.00	0	 Edit  Delete
Nelson's Pediment Sculpture		 Q View	\$ 30,000.00	0	 Edit  Delete
Orangery Terrace View		 Q View	\$ 30,000.00	0	 Edit  Delete
Painted Hall Ceiling Detail		 Q View	\$ 25,000.00	0	 Edit  Delete
Plinth of Naval College Sculptures		 Q View	\$ 25,000.00	0	 Edit  Delete
Queen Anne Statue Courtyard		 Q View	\$ 25,000.00	0	 Edit  Delete
Queen's House Colonnade View		 Q View	\$ 70,000.00	0	 Edit  Delete

Showing 1 to 10 of 15 entries

Previous

1

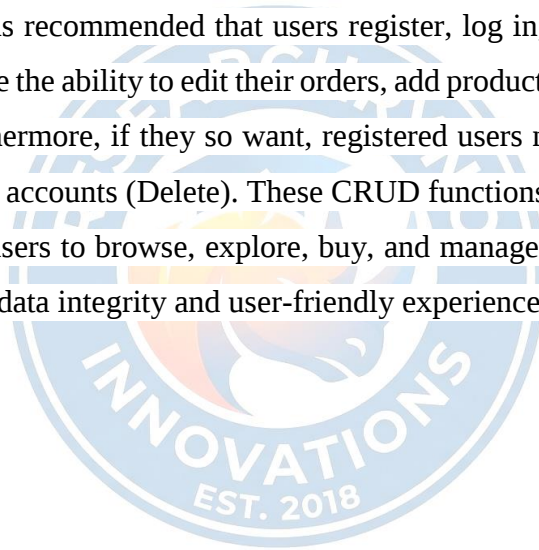
2

Next

Figure 11: CRUD application for product page

(Source: Self-developed)

The product management system is shown to be dynamic and responsive in "CRUD application for the product page," where the CRUD (Create, Read, Update, Delete) functionality is smoothly integrated. The picture depicts an easy-to-use interface that makes it possible to add, retrieve, edit, and remove products. Every item, such as "Venue," "High Coast Elevation Garden," and "Queen HOV View," is arranged with care. Administrators may effectively manage the product inventory on the Greenwich Landmark Pictures Selling website with the help of this powerful CRUD application (McGowan *et al.* 2023). The aesthetically pleasing and intuitive design optimizes actions linked to products, guaranteeing a seamless and effective user experience when browsing and updating the product catalog. CRUD functions are essential to the "Greenwich Landmark pictures selling website." It is recommended that users register, log in, and search for images of landmarks (Read). Users have the ability to edit their orders, add products to their carts, and change their profiles (change). Furthermore, if they so want, registered users need to be able to remove products from their carts and accounts (Delete). These CRUD functions must be supported by the website's backend to allow users to browse, explore, buy, and manage their activities on the site with ease while maintaining data integrity and user-friendly experiences.



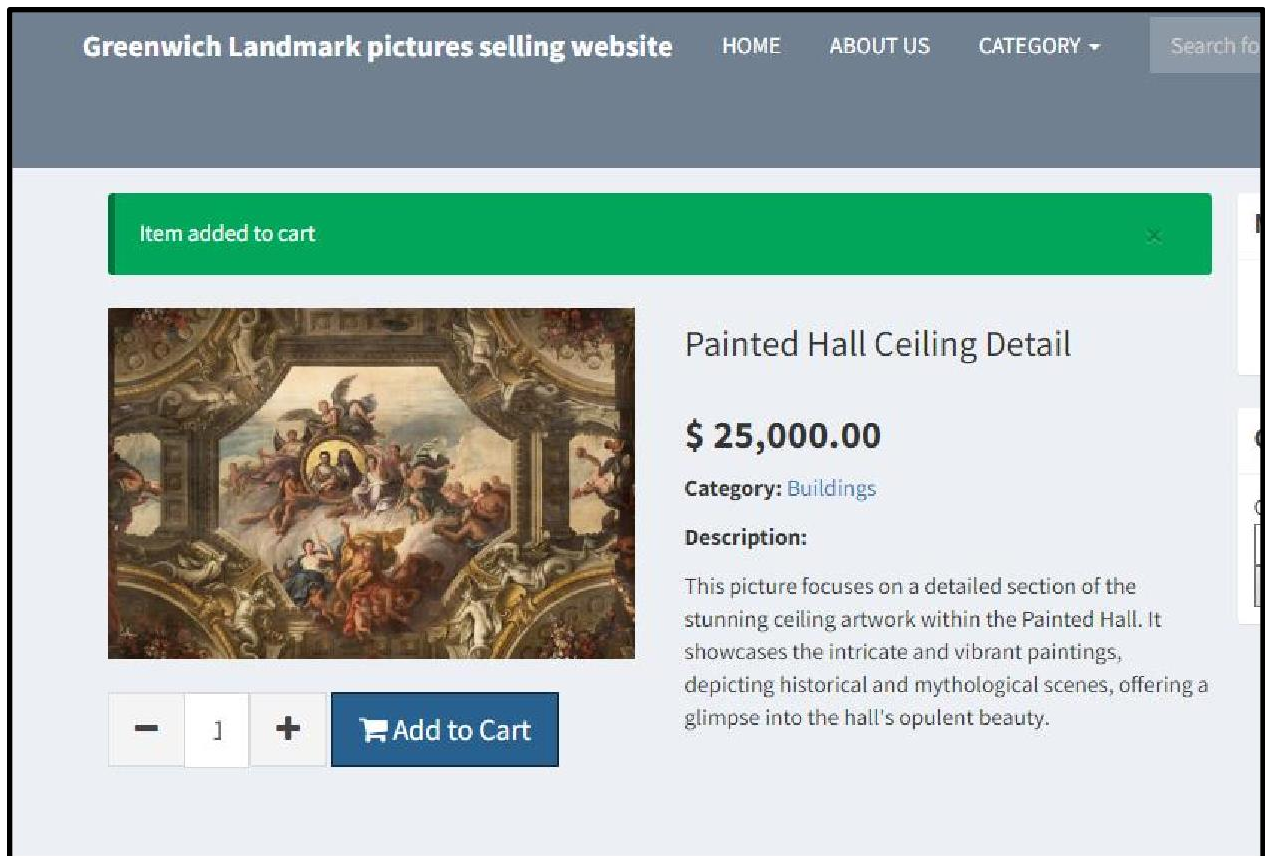


Figure 12: Add to cart function

(Source: Self-developed)

The item "Painted Hall Ceiling Detail" is a successful example of how the "Add to Cart" feature is integrated in "Figure 10: Add to cart function." With a price tag of \$25,000.00 and a category of "Buildings," the product's specifications are displayed with clarity. The caption that goes with the picture sheds light on the intricate ceiling artwork of the Painted Hall, which features scenes from mythology and history (Ayman, 2019). This picture demonstrates how well the shopping cart feature works, enabling customers to quickly add their favorite landmark photos for sale. The user-centric and efficient e-commerce experience of the Greenwich Landmark Pictures Selling website is in accordance with the streamlined process.

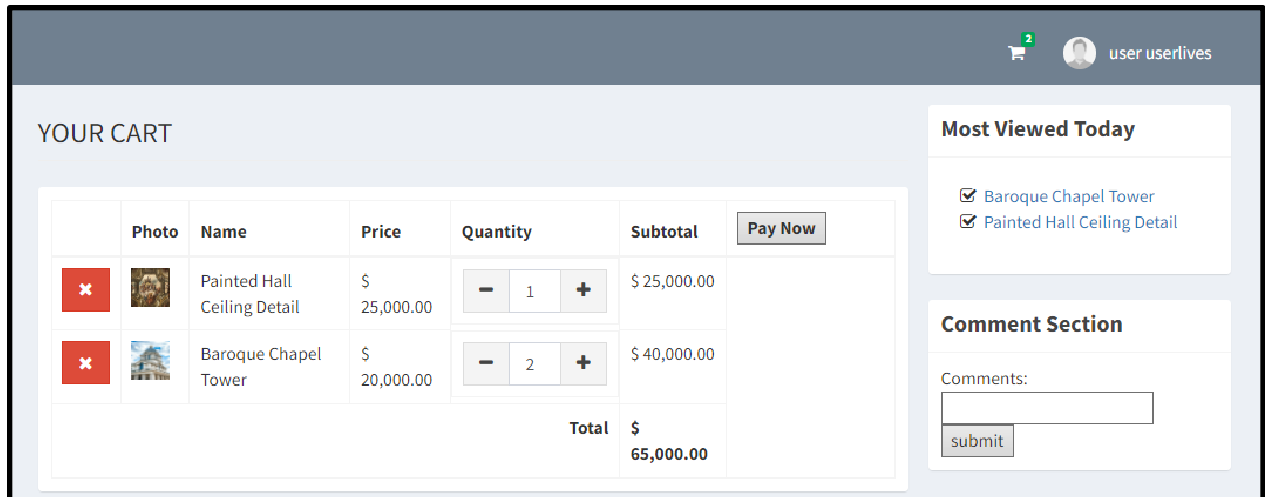


Figure 13: "Your cart" function

(Source: Self-developed)

The well-designed shopping cart functionality is seen in "Your Cart" function," which presents a summary of chosen landmark images in an easy-to-use manner. The products, which include "Baroque Chapel Tower" and "Painted Hall Ceiling Detail," are presented with their corresponding quantities, costs, and subtotals. Clarity is ensured by the simplified design, which makes it simple for users to examine and make payments (Mihiret *al.* 2023). User-specific data, such "user" and "user-lives," suggests a customized experience. The 'Most Viewed Today' section introduces a dynamic aspect that encourages more interaction. The entire design is in line with the Greenwich Landmark Pictures Selling website's dedication to offering a smooth and effective online shopping experience.

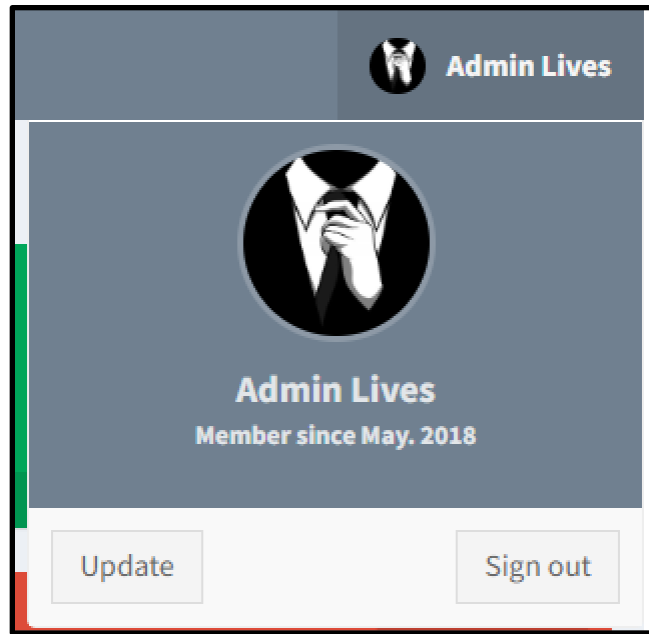


Figure 14: Logout page

(Source: Self-developed)

The effective deployment of the logout functionality is seen, A dynamic update is reflected in the user interface, which shows 'Admin Lives' along with an indicator that reads 'Member since (Amraset *al.* 2023)'. Users are given a clear prompt to safely log out of their accounts with the 'Sign out' option. The Greenwich Landmark Pictures Selling website's dedication to user authentication and tailored interactions is best demonstrated by this logout page. Users may confidently end their sessions because of the streamlined design, which enhances user experience and security. By adding a customized touch, membership information increases user engagement with the website's administrative features.

9. Displaying Items from Database on Web Page

				id	category_id	name	description	slug	price	photo	date_view	counter
☐	Edit	Copy	Delete	34	5	Royal Maritime Museum Facade	<p>A picturesque portrayal capturing the grandeur ...	royal-maritime-museum-facade	30000	royal-maritime-museum-facade.jpeg	0000-00-00	0
☐	Edit	Copy	Delete	35	5	Baroque Chapel Tower	<p>This picture encapsulates the elegant and ornat...	baroque-chapel-tower	20000	baroque-chapel-tower.jpg	2023-11-30	1
☐	Edit	Copy	Delete	36	5	Queen's House Colonnade View	<p>Offering a mesmerizing view of the colonnade at...	queen-s-house-colonnade-view	70000	queen-s-house-colonnade-view.jpg	0000-00-00	0
☐	Edit	Copy	Delete	37	5	King William Court Elevation		king-william-court-elevation	25000	king-william-court-elevation.jpg	0000-00-00	0
☐	Edit	Copy	Delete	38	5	Painted Hall Ceiling Detail	<p>This picture focuses on a detailed section of t...	painted-hall-ceiling-detail	25000	painted-hall-ceiling-detail.webp	2023-11-30	1

Figure 15: Displaying products in database

(Source: Self-developed)

A detailed view of all product entries is displayed by the database. Every object has a unique identity, description, and price, such as "Baroque Chapel Tower," "Queen's House Colonnade View," and "Royal Maritime Museum Facade." Captivating images are included to improve the visual depiction. Additional information is provided by date views and counters, which help to create a well-organized and educational database (Altulaihanet *al.* 2023). The dedication of the Greenwich Landmark Pictures Selling website to effectively maintaining its inventory is reflected in the smooth integration of product information. Administrators may successfully monitor and maintain a diverse database of historical landmark photos with this practical display. **Conclusion**

Developers have created a dynamic e-commerce platform that goes above the norm with the construction of the Greenwich Landmark Pictures Selling website. Extensive online application offers an inclusive experience for users of different ages and physical profiles by following the guidelines of User-Centered Design. Customers may explore and acquire historical snapshots with ease thanks to the combination of back-end stability, front-end elegance, and comprehensive user testing. This endeavor displays a dedication to historical preservation in addition to selling images. Users go on a digital voyage, making a lasting impression on the canvas of time as they explore, hunt, and choose landmarks. This project uses UCD principles to

create a responsive e-commerce website with iconic graphics that cater to a variety of user groups. It guarantees a user-friendly, safe, and effective platform by means of thorough analysis, front-end design, and strong back-end execution; this aligns with contemporary e-commerce practises and accommodates a range of consumer preferences.



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Quezada-Sarmiento, P., Alban-Cartuche, O., López-Pilataxi, L.E., Gonzaga-Tillaguango, H., Espinosa-Lara, E. & Ludeña-Reyes, A.P. 2023, "Factores de riesgo, amenazas, vulnerabilidades y defensa en aplicaciones web turísticas", Revista Ibérica de Sistemas e Tecnologías de Informação, pp. 104-112.

