WEB APPLICATION FOR WATCH HUB



BY

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A Report submitted in partial fulfillment of the requirements for the higher national diploma in Information Technology

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Sri Lanka Institute of Advanced Technological Education

2025

DECLARATION

We declare that this is our own work, and this report does not incorporate, without acknowledgment, any material previously submitted for a Degree or Diploma in any other University or institute of higher learning. To the best of our knowledge and belief, it does not contain any material previously published or written by another person except where acknowledgment is made in the text. Also, we hereby grant to ATI (Advanced Technological Institute) Kandy the non-exclusive right to reproduce and distribute this report, in whole or in part, in print, electronic, or other mediums. we reserve all rights to use this material in whole or part in any future work.

The supervisor/s shall certify the report with the follow	ring declaration.			
The above candidate has carried out the project report under my supervision.				
Supervised by:	Date:			
Mrs. Dilini Kumarihamy	Signature of supervisor			

ACKNOWLEDGMENT

Becoming professionals in the IT field with the integration of real-world problem-solving is a crucial step for any aspiring group of students. This project, the development of a web application for Drive Ceylon Vehicle Company, provided us with an excellent opportunity to enhance our skills in web development, teamwork, UI/UX design, database handling, and system analysis. It allowed us to explore innovative solutions in the context of vehicle rental and hire services.

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CHAPTER 1 – INTRODUCTION

1.1 Background and Motivation

In today's digital age, online shopping has become a preferred way for customers to purchase products due to its convenience, variety, and ease of access. The global watch market, including luxury, casual, and smartwatches, has increasingly shifted toward online platforms. However, many consumers still face challenges in finding a user-friendly, well-organized website that allows them to browse, compare, and purchase watches based on features such as brand, price, type, and design.

Watch Hub is a web-based solution designed to meet this demand by offering an intuitive and responsive platform for browsing a wide range of watches. The website aims to combine modern web technologies with a clean interface to enhance the user experience and streamline the shopping process.

The motivation behind creating Watch Hub is to:

- Simplify watch shopping by providing a centralized platform where customers can explore different watch categories, filter results, and view detailed descriptions.
- Support local and global sellers by offering them a digital storefront to display their products and reach a wider audience.
- Address user frustrations with poorly designed or limited watch shopping websites.
- Enhance the online shopping experience with features such as search, sorting, responsive design, and secure purchase options.
- Follow modern e-commerce trends and contribute to the growing demand for specialized online stores tailored to specific product categories.

1.2 Aim and Objectives

To develop a user-friendly, responsive, and efficient online platform called **Watch Hub** that allows customers to easily browse, search, and purchase various types of watches from different brands and sellers.

1. Design a clean and intuitive user interface

 Ensure smooth navigation for all user types (new visitors, returning users, sellers).

2. Provide category-based browsing and search functionality

 Allow users to filter watches by brand, price, type (digital, analog, smart), gender, and more.

3. Enable detailed product views

 Display product images, specifications, availability, and customer reviews.

4. Develop a responsive website

 Make the platform accessible and functional across devices (desktops, tablets, smartphones).

5. Implement a secure user authentication system

 Allow customers to register, log in, and manage their profiles safely.

6. Include a seller panel (optional)

o Let verified sellers upload and manage their watch listings.

7. Integrate a shopping cart and checkout system

 Let users add items to a cart and simulate or perform secure checkout.

8. Maintain a user-friendly admin panel

 For managing product listings, user accounts, and system monitoring.

9. Ensure backend efficiency and data management

 Use a database to store and retrieve product and user data effectively.

10. Test for usability and performance

• Ensure the platform works smoothly under different conditions and user loads.

1.3 Scope

The **Watch Hub** project focuses on developing an online shopping website specifically tailored for browsing and purchasing watches. It will serve as a platform for both customers and (optionally) sellers, offering a wide variety of watches categorized by brand, type, price range, and other features. The website will be designed with a responsive layout to ensure compatibility with desktop and mobile devices.

The scope includes:

Frontend Features:

- Home page with featured products and categories
- Watch listings with filters (brand, price, type, etc.)
- o Product detail pages with images, specs, and reviews
- Shopping cart functionality
- o Customer registration, login, and profile management

Backend Features:

- Admin dashboard for managing users and products
- o Product upload and inventory management
- o (Optional) Seller account management
- o Order management system (basic checkout flow)

• Technical Features:

- o Responsive web design (mobile/tablet/desktop)
- o Database integration for product and user data
- Secure login and data handling
- o Basic search engine functionality within the site

Out of Scope (for current version):

- Payment gateway integration (actual transactions)
- Advanced recommendation engine
- Real-time chat support
- Mobile app version (only web-based)

CHAPTER 2 – TECHNOLOGY ADAPTED

2.1 Overview

Watch Hub is an online shopping website designed to provide customers with a seamless and convenient platform to browse, search, and explore a wide range of watches from different brands and categories. As online shopping continues to grow in popularity, there is a clear demand for specialized, user-friendly platforms focused on specific products. Watch Hub fills this gap by offering a dedicated space for watch enthusiasts and casual buyers alike.

The platform will feature an intuitive user interface, responsive design, and organized product listings. Customers can view product details, filter watches by various criteria (such as brand, type, and price), and add selected items to their cart. Additionally, users can register, manage their profiles, and track their activity. For administrators (and optionally, sellers), the system will include tools to manage product listings, user data, and general website content.

This project emphasizes both functionality and user experience, ensuring smooth navigation, efficient data handling, and visual appeal. It is suitable for personal projects, academic submissions, or as the foundation for a larger e-commerce platform in the future.

2.2 Techniques Used

1. Responsive Web Design

 The website is designed to work smoothly on all devices including desktops, tablets, and smartphones using HTML, CSS, and media queries.

2. HTML

 Used to structure the web pages, including company information, services, vehicle categories, contact, and payment sections.

3. CSS

 Applied for styling the website to create a clean, modern, and user-friendly interface with colors, fonts, layouts, and animations.

4. JavaScript

 Added interactivity to the website such as form validations, dynamic content updates, and user input handling.

5. Form Handling and Validation

 Contact and booking forms include client-side validation to ensure users enter correct information before submission.

6. Navigation and User Interface Design

 Clear menus and buttons are implemented for easy navigation between pages and services.

2.3 Design and Layout

The **Watch Hub** website is designed with a clean, modern, and responsive layout to enhance the user experience across all devices (desktop, tablet, and mobile). The structure is simple yet comprehensive, allowing users to easily navigate through various sections related to watch shopping, support, and account management.

1. Navigation Bar:

The top navigation bar is user-friendly and includes quick access to key sections:

- Special Offers Showcases current deals and discounts.
- **Brands** Filters watches by brand (e.g., Casio, Seiko, Rolex, etc.).
- Men Displays watches designed specifically for men.
- Women Displays watches for women.
- Luxury Premium, high-end watch collections.
- Stores Lists physical store locations or partner sellers.

2. Information & Policy Pages:

These pages provide transparency and help build customer trust:

- Authenticity Guarantee Assures customers that all products are genuine.
- **Privacy Policies** Details how customer data is collected and protected.
- Return, Exchange & Refund Policies Explains customer rights for returning or replacing products.
- Terms and Conditions Legal terms for using the website.
- Warranty Information Covers warranty terms for different products.

3. Customer Support and Tools:

- FAQs Provides quick answers to common customer questions.
- My Account Secure login area for users to manage their profile and orders.
- Track My Order Lets users check order status using an order ID.
- Site Map Gives a full overview of the website structure.

4. Additional Features:

- **Blog** Articles and tips related to watches, brands, and style guides.
- Contact Us Provides email, phone, and form-based customer support.
- Our Stores Shows physical store locations with maps and contact details.

CHAPTER 3 – PROJECT DESIGN AND DEVELOPMENT PROCESS

3.1 What is Wireframe

A Wireframe is a two-dimensional layout or blueprint of a web page or application interface. It visually represents the structure, layout, and functionality of each page before the final design is implemented.

3.2 Proposed Design

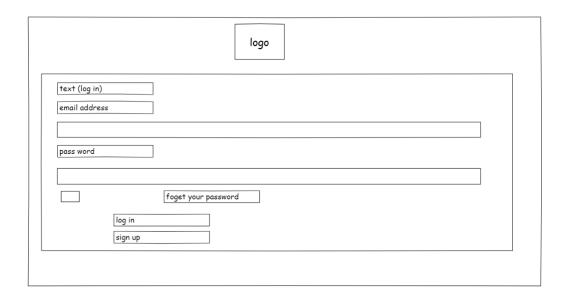


Figure – 3.2.1 Proposed Signup Account interface of website

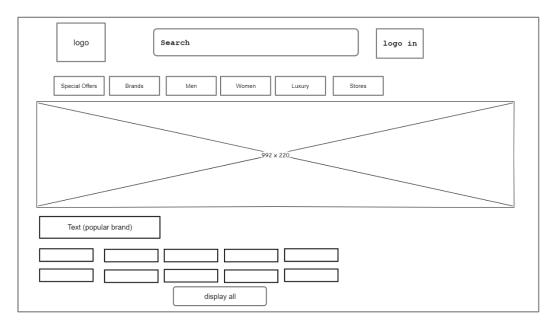


Figure – 3.2.2 Proposed Home interface of website

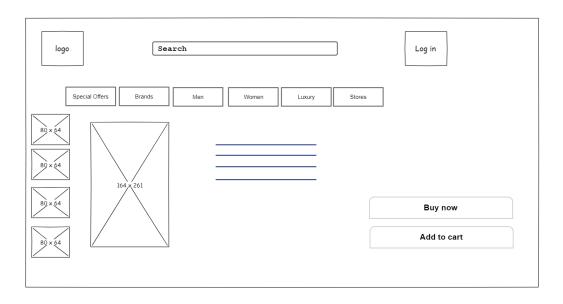


Figure – 3.2.3 Proposed Buy interface of website

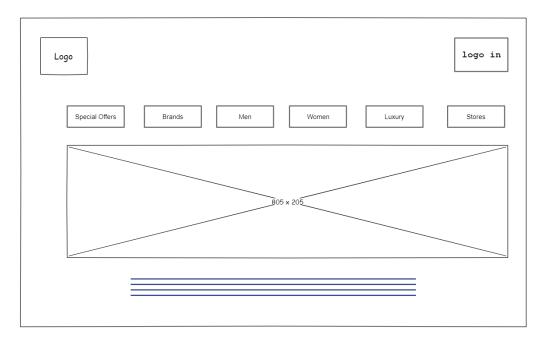
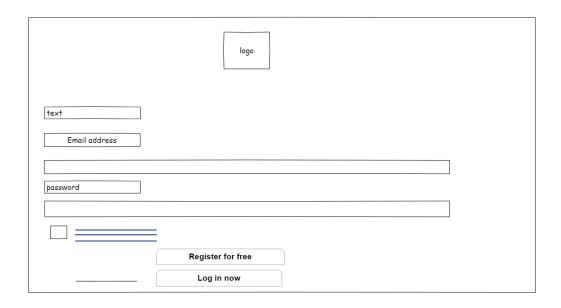


Figure – 3.2.4 Proposed About us Page interface of website



 $Figure-3.2.5\ Proposed\ Login\ interface\ of\ website$

3.3 Module Description

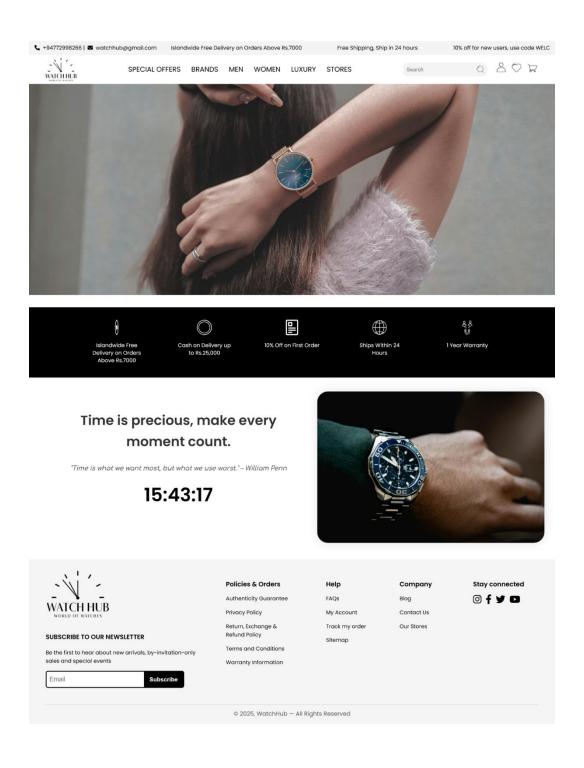


Figure – 3.3.1 Screenshot of pc component Home Page interface of website

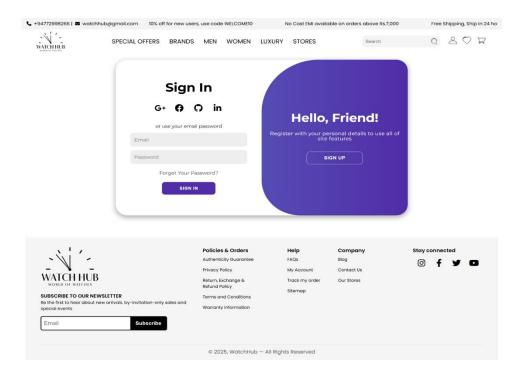


Figure – 3.3.2 Screenshot of pc component login Page interface of website

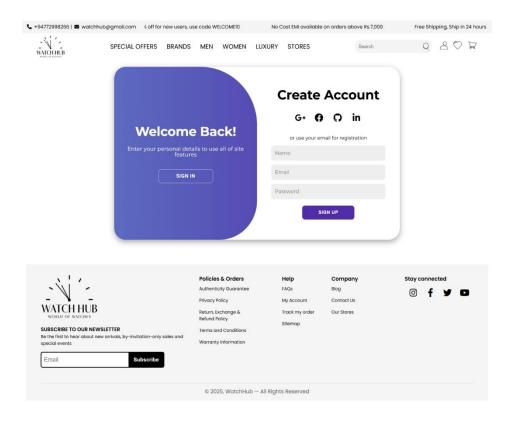


Figure – 3.3.2 Screenshot of pc component Signup Page interface of website

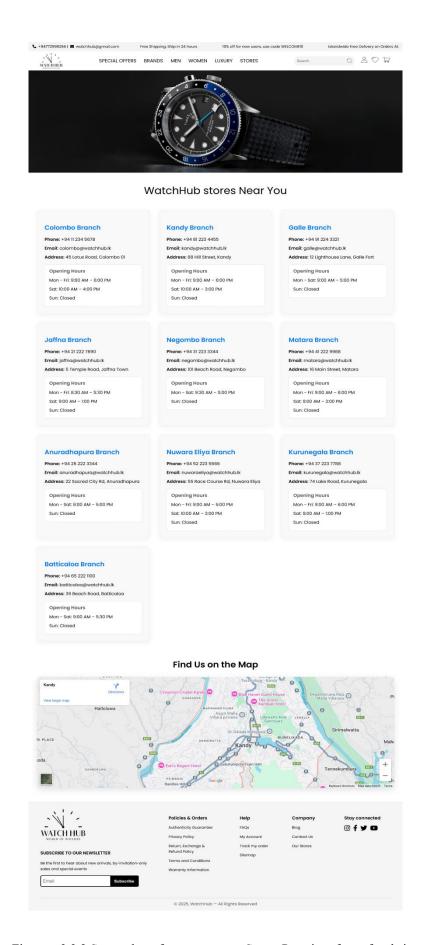


Figure – 3.3.2 Screenshot of pc component Stores Page interface of website

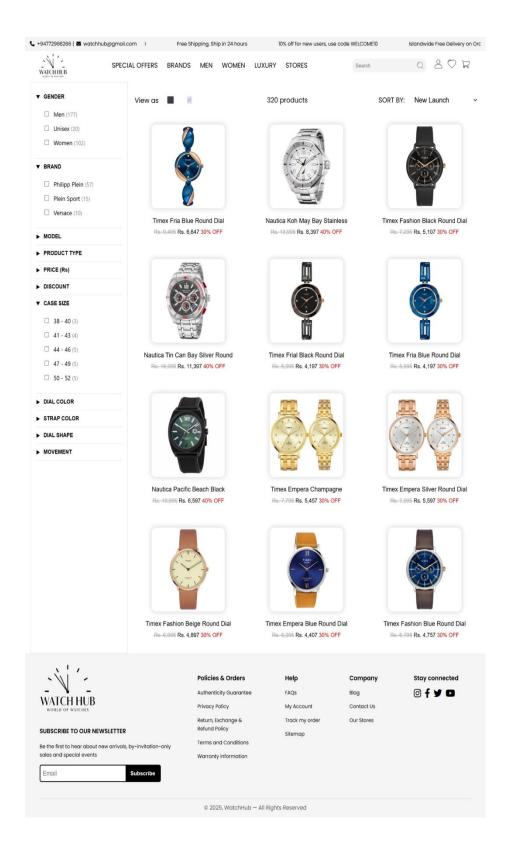


Figure – 3.3.2 Screenshot of pc component Special offers Page interface of website

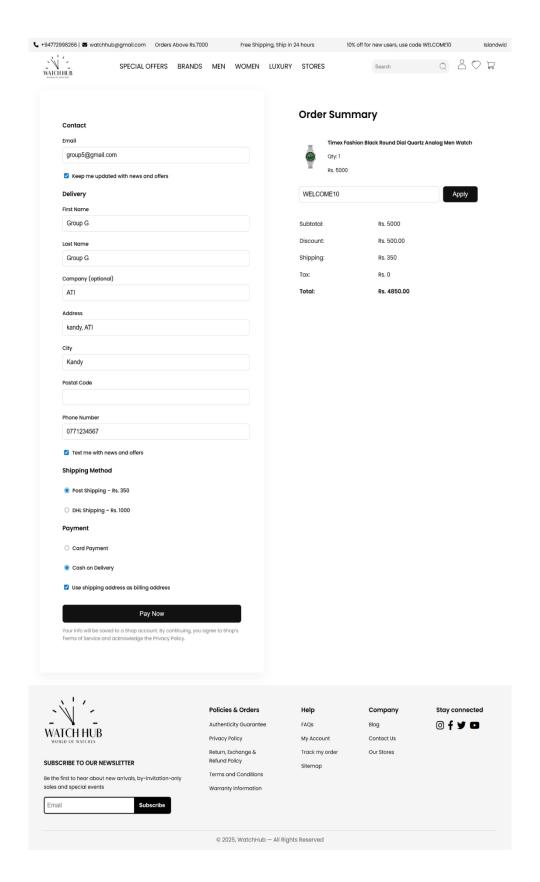


Figure – 3.3.2 Screenshot of pc component Discount Page interface of website

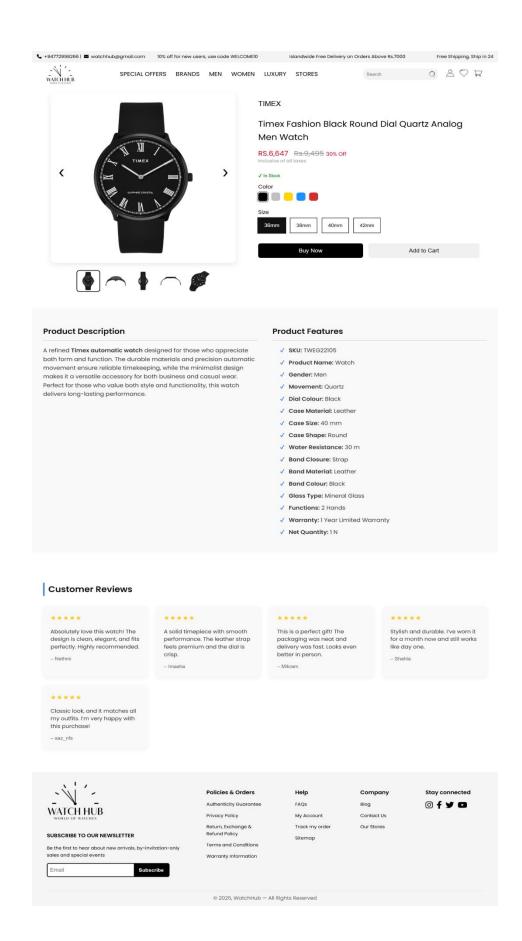


Figure – 3.3.2 Screenshot of pc component Review Page interface of website

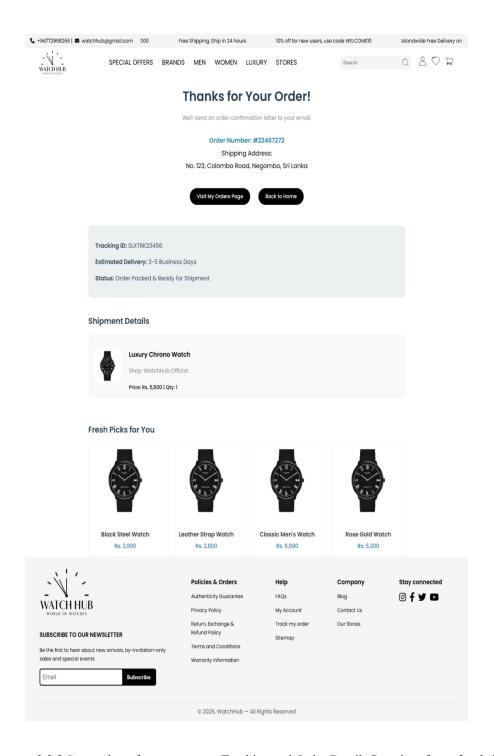


Figure – 3.3.2 Screenshot of pc component Tracking and Order Details Page interface of website

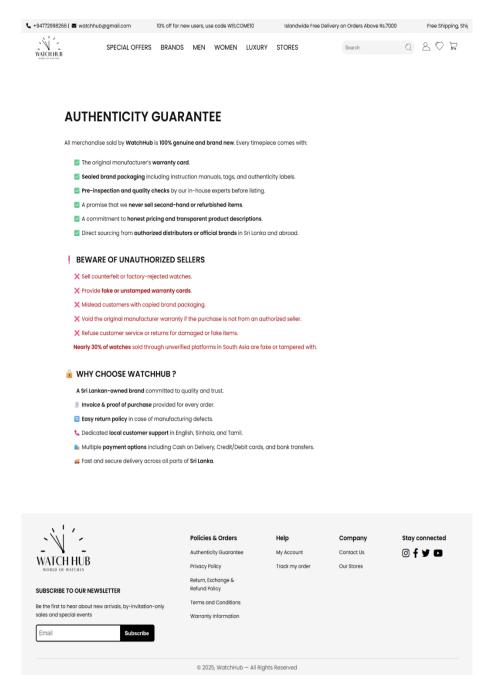


Figure – 3.3.2 Screenshot of pc component Authenticity Guarantee Page interface of website

PRIVACY POLICY AND TERMS OF USE

WE ENSURE THE PRIVACY OF ALL OUR MEMBERS.

WATCHHUB ("we", "us", "our") is committed to protecting all the information you share with us. We follow stringent procedures to help protect the confidentiality, security, and integrity of data stored on our systems. Our Website encrypts your personal information using Secure Socket Layer (SSI) technology to ensure secure transmission of all data. Only those employees and/or authorized third parties who need access to your information in order to perform their duties are allowed such access.

Please read this privacy policy carefully. By accessing or using our website, you acknowledge that you have read, understood, and agree to be bound by all the terms of this privacy policy and our website terms of use. If you do not agree to these terms, exit this page and do not access or use the website.

ENJOY SECURE SHOPPING

We use encryption technology, digital certificates, secure commerce servers, and authentication to ensure that your personal information is secure online

YOUR REGISTRATION OR USER ACCOUNT

www.watchhubils ("Website") keeps track of your information to offer you the best possible shopping experience. Before completing your purchase, we ask you for your name, phone number, email, billing and shipping addresses. This information, along with your payment method, is necessary to fulfill your order. This information may be disclosed to specific members of our staff and to select third parties (such as our credit card processor, shipping provider, website hosting partners, or other parties who assite us in designing and/or operating the website or help us analyze collected data). These parties will only use your data for the purpose of carrying out the work as indicated and will be required to keep the information confidential. We will also release personal data if required by law. We may also need your email address or phone numbers to contact you if we have questions about your order. We or our associate companies may also use your email address to notify you about new services, special promotional programs, or send you offers or information if you have opted-in. Emails are sent only to WatchHub members who have chosen to receive them (opted-in) or who have made a purchase on our website. At any time, you can notify us that you wish to stop receiving these emails. Additionally, we keep a record of your post purchases, returns, and credits. We may also ask you for information regarding your personal preferences and demographics to help us better meet your needs. You may cancely your registration at any time, and you can choose to opt-out of receiving any e-mails and/or SMS messages from us. You can also choose to have all your personal information deleted from our database.

If you want to opt-out, delete or modify your personal information, please visit the LOG-IN PAGE or registration page. We encourage you to promptly update your personal information if it changes.

DATA TRACKING COOKIES

To facilitate and customize your experience with the Website, we store cookies on your computer. A cookie is a small text file that is stored on a User's computer for record-keeping purposes and contains information about that User. We use cookies to save your time while using the Website, remind us who you are, and track and track and target User interests in order to provide a customized experience. Cookies also allow us to collect Non-Personally identificable information from you, such as which pages you visited and what links you clicked on. This information helps us to create a more user-friendly experience for all visitors. Additionally, we may use third Party Addresting Componies to display advertisements on our Website. As part of their service, they may place separate cookies on your computer. We have no access to or control over these cookies. This Privacy Policy covers the use of cookies by our Website only and does not cover the use of cookies by any Advertiser. Mast browsers automatically accept cookies, but you may be able to modify your brower settings to decline cookies. Places note that if you decline or delete these cookies, some parts of the Website may not work properly.

SERVER LOGS

In an effort to make our Website as effective and enjoyable as possible, the computers that operate it collect certain information each time you visit. We store these statistics in server logs. Once again, these statistics do not identify you personally, but provide us with information regarding the type of user who is accessing our Website and certain browsing activities of that user lad tad may include: the IP address of the user accessing our Website (i.e., the unique ID number of the user's computer), the type of browser (internet Explorer, Firefox, etc.) and the operating system (Windows, Mac OS, etc.), the Website the user last visited before linking to our Website, how long the user accessed our Website in any given session, and the date and time of access. We may make extensive use of this data at an aggregated level to understand how our Website is being used. We may share some of the aggregate findings (not the specific data) with advertisers, sponsors, investors, strategic partners, and others in order to help grow our Desiries.

PRIVACY POLICIES OF THIRD PARTY WEBSITES

This Privacy Policy only addresses the use and disclosure of information we collect from you. Other websites that may be accessible through this Website have their own privacy policies and data collection, use, and disclosure practices. If you link to any such website, we urge you to review the respective website's privacy policy. We are not responsible for the policies or practices of third parties.

CHANGES IN POLICY

We may change this Privacy Policy at any time by posting the revised Privacy Policy in the 'Privacy Policy' section of the Website. The revised Privacy Policy is effective immediately when posted on the Website. It is the responsibility of each User to review the Website and the Privacy Policy periodically to learn of any revisions to this Privacy Policy. Your continued use of the Website after the effectiveness of such revisions will constitute your acknowledgment and acceptance of the terms of the revised Privacy Policy. We stand behind the promises we make, however, and will never materially change our policies and practices to make them less protective of customer information collected in the past without the consent of affected customers.

CONTACTING US

Whether you are a new or loyal customer, marketer, publisher, media member, or job seeker, we would like to stay connected and want to hear from you!

Mail: support@watchhub.l

Call: +94 77 2998266 (10 am to 6 pm, MONDAY to SATURDAY) (except public holidays)



Figure – 3.3.2 Screenshot of pc component Privacy Policy Page interface of website

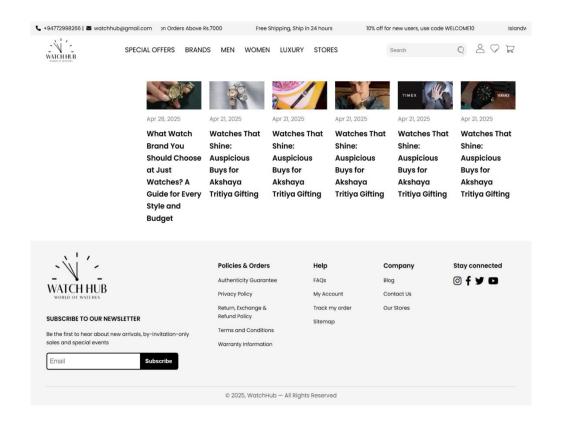


Figure – 3.3.3 Screenshot of pc component Blog Page interface of website

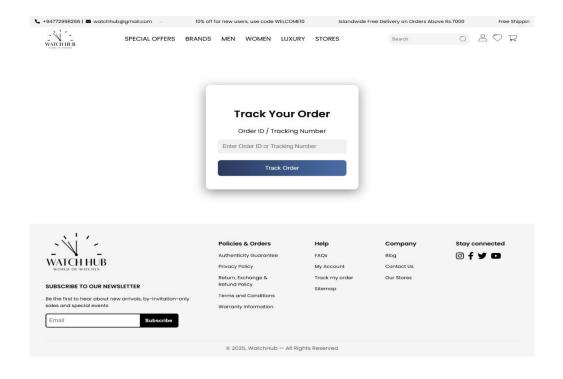


Figure – 3.3.4 Screenshot of pc component Track your Oder Page interface of website

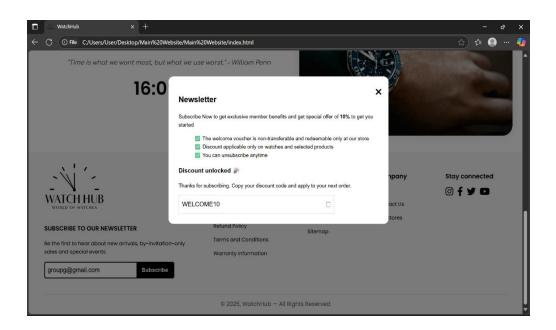


Figure – 3.3.5 Screenshot of pc component Showing Message Page interface of website

CHAPTER 4: RESULTS & TESTING

4.1 Test case

Test Case ID	Feature	Test Scenario	Expected Result	Status
TC001	User Registration	Enter valid name, email, password, and submit	Account created successfully and redirected to profile	Pass
TC002	User Registration	Submit form with missing fields	Error message displayed	Pass
TC003	User Login	Enter correct email and password	User logged in and taken to home/dashboard	Pass
TC004	User Login	Enter wrong password	Error message: "Invalid login details"	Pass
TC005	Product Browsing	Click on "Men" category	List of men's watches displayed	Pass
TC006	Product Filtering	Filter by price range (e.g., \$50–\$100)	Only products within selected range are shown	Pass
TC007	Product Details	Click on a watch from listing	Product page with full details is displayed	Pass
TC008	Add to Cart	Add product to cart	Product appears in cart	Pass
TC009	View Cart	Click cart icon	Cart page shows added items	Pass
TC010	Track My Order	Enter valid order ID	Order status displayed	Pass
TC011	Contact Us Form	Fill form and submit message	Confirmation message shown	Pass
TC012	Navigation Bar	Click "Special Offers" or "Brands"	Respective product listings are shown	Pass
TC013	Policy Pages	Visit privacy, returns, or warranty pages	Full policy text displays correctly	Pass
TC014	Responsive Layout	View site on mobile device	Layout adapts correctly to small screen	Pass
TC015	Search Function	Enter a keyword (e.g., "Casio") and search	Relevant products are shown	Pass

CHAPTER 5 – CONCLUSION & FURTHER WORK

5.1 Overall Achievements

The **Watch Hub** project successfully achieved its primary goal of creating a user-friendly, responsive, and feature-rich online platform for browsing and exploring a wide range of watches. The website was designed and implemented with a focus on usability, modern design standards, and essential e-commerce functionalities.

Key accomplishments include:

- Fully functional web interface with a clear navigation bar, allowing users to easily access categories like *Men*, *Women*, *Luxury*, *Brands*, and *Special Offers*.
- **Responsive design** ensuring the website works seamlessly on desktops, tablets, and smartphones.
- **Product filtering and searching** features to help users find watches by brand, price, type, and gender.
- **Customer account system** allowing users to register, log in, view profiles, and manage their orders.
- **Policy and support pages** implemented to provide clear information on returns, warranties, authenticity, and privacy.
- Track order functionality to improve post-purchase experience.
- Admin panel (or seller panel) included for managing products and users (if implemented).
- **Blog and store locator pages** developed to add value and support offline shopping.
- Attractive and consistent UI/UX design, giving the platform a professional and trustworthy look.

Overall, the Watch Hub platform lays a solid foundation for a scalable e-commerce solution that could be expanded further with payment gateways, recommendation systems, and real-time support in future versions.

5.2 Problems Encountered

During the development of the **Watch Hub** website, several challenges were encountered across both technical and design aspects. These issues required troubleshooting, testing, and research to resolve:

1. Responsive Design Issues

Ensuring that the layout worked properly across different screen sizes (desktop, tablet, mobile) was challenging, especially when handling image scaling and navigation bar alignment.

2. User Authentication Handling

Setting up a secure and efficient login/registration system with password validation and session management required extra care to prevent errors and security vulnerabilities.

3. Search and Filter Logic

Implementing dynamic search and filters for watches by brand, price, and gender required complex queries and efficient handling of database results to maintain speed.

4. Data Management

Organizing and retrieving product data from the database in a structured way took time, especially when linking product images, descriptions, and availability status.

5. Navigation Complexity

Designing a navigation bar with many sections (Special Offers, Brands, Policies, FAQs, etc.) while keeping it clean and user-friendly was a UI/UX challenge.

6. Cross-browser Compatibility

Some visual features and layout styles did not behave consistently across browsers like Chrome, Firefox, and Edge, requiring additional testing and CSS fixes.

7. Limited Sample Data

Without access to real product data, creating a realistic product catalog with accurate watch specifications and images took extra time and effort.

8. Time Management

Managing project deadlines while balancing the development of multiple pages (product, account, policy pages, admin tools) was difficult at times.

5.3 Limitations

While the **Watch Hub** website successfully meets its core objectives, there are some limitations in its current version that may affect scalability, features, and real-world deployment:

1. No Payment Integration

 The platform does not currently support real-time online payments (e.g., credit card, PayPal), limiting it to a browsing-only or simulated shopping experience.

2. Limited Product Database

 The product catalog uses sample or static data and lacks real-time updates from sellers or inventory systems.

3. No Live Chat or Customer Support Integration

 Customer support is limited to static pages like FAQs and contact forms, with no live chat or automated assistance.

4. Basic Admin Panel

 The admin system (if included) only offers simple product and user management. Advanced analytics, reports, and bulk operations are not available.

5. No User Reviews or Ratings

• There is no feature for customers to leave reviews or rate products, which can reduce user trust and engagement.

6. Mobile Optimization is Basic

 Although responsive, the mobile design may lack advanced mobile-first optimizations like touch gestures or simplified menus.

7. No Recommendation System

 The website does not suggest related products or use any form of AI to enhance user shopping experience.

8. No Multi-language or Currency Support

 The platform only supports one language and currency, limiting its global usability.

9. Security Features are Basic

 The system lacks advanced security measures like CAPTCHA, twofactor authentication, or HTTPS encryption for production-level deployment.

5.4 Future Work

Features Worked Out:

The **Watch Hub** website includes several successfully developed features that provide users with a smooth and engaging watch-browsing experience. These features ensure both functionality and usability for customers and administrators.

1. User Interface & Navigation

- A clean and responsive layout that adjusts to desktop, tablet, and mobile views.
- Navigation bar with links to:
 - Special Offers
 - o Brands
 - o Men, Women, Luxury categories
 - o Stores, Blogs, Contact Us
 - o Policy and Help pages (e.g., FAQs, Privacy, Returns)

2. Product Browsing & Filtering

- Watch listings organized by:
 - o Brand, Gender, Price range, Type (Analog/Digital/Smart)
- Product detail pages with:
 - High-quality images
 - o Descriptions, Specifications, and Availability

3. User Account System

- User registration and login/logout functionality
- Secure profile management (view/update basic info)

4. Shopping Cart (Basic)

- Users can add and remove watches to/from cart
- View cart contents before checkout (simulated)

5. Order Tracking (Simulated)

• "Track My Order" page where users can enter an order ID and view mock order status

6. Informational Pages

- Policy pages fully created:
 - o Privacy Policy
 - o Return, Exchange & Refund Policy
 - Terms and Conditions
 - o Warranty Information
 - o Authenticity Guarantee

7. Contact and Support

- "Contact Us" form for customer inquiries
- FAQ section answering common user questions

8. Blog and Store Pages

- Blog section for articles related to watches, trends, and buying tips
- Store locator with basic info (optional map/location listing)

CHAPTER - 6 REFERENCE

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