Swinburne University of Technology

ICT10001

Problem Solving with ICT

FINAL REPORT

Due date: Friday, 1/4/2022

Group 4 – IS Consulting Organization (ISCO)

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Executive Summary

This final report is created by Group 4 of IS Consulting Organization with the aim to illustrate the current business situation of Baby Hut and demonstrate our team approach to create a new information system that satisfies the requirements of the company. Important findings, recommendations for the future and a detailed user guide are also included in the report.

Baby Hut is a baby equipment sale and rental chain that has had a place in the local market in Melbourne. However, in order to enhance the company's offering and expand the business scale to other countries, a new information system to monitor performance and provide customer support is required.

After carefully considering the current problems such as lack of connectivity, time-consuming procedures, and further requirements from Baby Hut, our team has designed a fully functional website by WordPress with the use of Google Analytics to track visitor traffic.

Moreover, we have some recommendations for better operation:

- Search Engine Optimizer (SEO) for more potential customers.
- Upgrading to WordPress yearly subscription plan for greater customization.
- Paying for a website server hosting service for better scalability.

Our team believes with the website prototype and the investments like our recommendations, Baby Hut will reach its business goals within a short period of time.

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Introduction

This report concerns Baby Hut and demonstration of a new information system to improve their business.

Baby Hut is a moderate baby products sale and rental company based in Melbourne with a near future goal to extend business to the international market. The current business of the company relies heavily on stand-alone operating systems at each individual store, resulting in a lack of connectivity, management and a possibility of human errors. This poses a threat to the expected growth of Baby Hut's business.

As an analysis team, our goal is to analyze the ICT needs of the company and provide a feasible solution.

This report consists of two main sections, namely analysis and recommendation. In the first section, the approach, methodology used to evaluate the situation and the process to generate the solution are discussed. The recommendation section provides the details of the final prototype and further recommendations for future operation.

Project Client and Team Members

Project Clients:

Peter Hamill, James George and Angel White

(the owners of Baby Hut)

Team Members:

Dang Vi Luan (103802759) – Project Manager

Tran Bao Huy (103505799) – Developer

Nguyen Nhat Huy (103802911) – Designer

Nguyen Dinh Nhat Minh (103802490) – Drafter

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Organization Background

Baby Hut was founded a few years ago by Peter Hamill, James George and Angel White. The company has successfully filled a market niche by offering further customer services, namely pickup, delivery and personal consulting, and the hire/sale/purchase service for baby products. There are currently five stores in Melbourne and more locations expected to be opened in major cities across the globe. In the era of online shopping, the owners are aiming to incorporate online and mobile technologies into the business to not only expand business scale but also improve customer experience.

Baby Hut's business relies heavily on the stand-alone systems at individual stores and the ability to manually monitor the whole procedure by the owners themselves. Although this has been working when the company is at a moderate scale, major adjustments are required for Baby Hut to reach a greater business scale in the future.

Therefore, our clients require a new information system that is able to perform business procedures such as processing loans, customer maintenance, online shopping, product reserving and customer servicing. Additionally, generating reports and storing data for supervising purposes are also required within the website.

Problem and Project Scope

1, Problem Statements

The current business procedures at Baby Hut are suitable for a moderate business scale where the owners can manually monitor the performance.

The main problem that the company is facing is the lack of connectivity among individual stores. Although all stores have their own managing software solutions, they are not directly linked together and are limited to only the MS Office suite of applications. Therefore, there is little chance for the unification of reports generated from different stores and the customization of the software itself.

The second problem of Baby Hut is the manual and time-consuming procedures such as the consolidation of the reports by the owners. When upgrading to a greater business scale, these procedures will create the possibility of human errors.

The last problem is the fact that the company does not have an online platform to promote its services and increase revenue. The company is only popular within the local Melbourne market. In the era of online shopping, Baby Hut will be missing out on many sale opportunities if they cannot reach online customers.

In order to solve all of the mentioned problems, our team has designed a website for online customer service and managing purposes.

2, Project Scope

Project name: **Baby Hut's Information System**

Project Justification	- A system to monitor performance, connect databases of multiple stores and provide customer services.

Scope Description	***In Scope:***
	- A website with 2 interfaces (mobile compatibility for computers, phones, tablets):
	
	  + Customer's interface: providing customer support with various services
	  + Employee's interface: providing tools to do customer support and access to data to generate reports back to the headquarters
	
	- Providing samples to client for deeper visualization and possible scope change
	
	- Testing the website to avoid bugs
	
	- Providing maintenance, SEO and security services for the agreed time period in the contract
	
	- Providing user guide and further support for Baby Hut's founders and employees
	
	Out of Scope:
	- Support for the company's activity other than what related to the new website

	- Additional information systems (apps, social media accounts)
Project Objectives	- A fully functional website that meets all functional and nonfunctional requirements
Project Deliverables	- A website with SEO and Google Analytics plug-ins - User Guide (instruction for all features of website)
Estimated Costs	- Website making fee: 1000$ - Maintenance service: 100$/year - Google Analytics 360: 150$/year SEO fee: 100$/year
Acceptance Criteria	- Client is satisfied with the product and desirable results are generated.

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Methodology

When developing a suitable solution for our client, we decided to choose the waterfall method, which is "a linear project management approach, where stakeholder and customer requirements are gathered at the beginning of the project, and then a sequential project plan is created to accommodate those requirements." (ProjectManager 2021).

1, Task Management (Scheduling)

Task	Task Description	Status	Category	Assigned To	% Complete	Start	Finish
1	Project Brief and Orientation	Done	Uncredited	All	100%	15/1/2022	19/1/2022
2	Project Proposal	Done	Credit	All	100%	15/1/2022	8/2/2022
	Project Client and Team Member	Done	Sub-project	Josh	100%	15/1/2022	8/2/2022
	Project Description	Done	Sub-project	Brett	100%	15/1/2022	8/2/2022
	Project Scope	Done	Sub-project	Brian	100%	15/1/2022	8/2/2022
	Project Schedule	Done	Sub-project	Josh	100%	15/1/2022	8/2/2022
	Project Risks	Done	Sub-project	Nani	100%	15/1/2022	8/2/2022
	Acceptance and Approval	Done	Sub-project	Josh	100%	15/1/2022	8/2/2022
3	Project Prototype	Ongoing	Credit	All	100%	14/2/2022	5/3/2022
	Log in system + Term/policy	Ongoing	Sub-project	Josh	0%	14/2/2022	5/3/2022
	Homepage + About us	Ongoing	Sub-project	Brett	90%	14/2/2022	5/3/2022
	Shop system	Ongoing	Sub-project	Nani + Brian	50%	14/2/2022	5/3/2022

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2, Website Developing

To meet the requirements provided by the client, we decided to utilize WordPress to create the website. WordPress is currently the most popular content management system with over 30 million active users and takes up 35.6% of every website on the Internet (Schäferhoff 2021). With tons of plugins and extensions to fit all your needs as well as a flourishing and active community, WordPress is simply the best choice out there.

a, Theme

When choosing a theme, it is important to find one that has a sleek design as well as an easy navigation system, as stated in one of the client's requests. Our advisor team decided to settle for the Astra theme due to its minimalistic design, paired with the vast array of customization options available thanks to its pre-built templates, that would allow our editors to have a much easier time formulating the website.
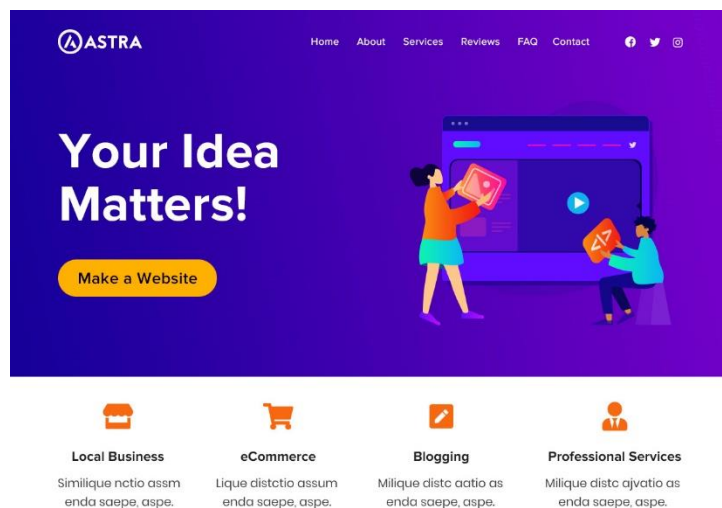
b, Plugins

- **Elementor**

  For ease of maintenance and editing, we decided to incorporate the Elementor plugin into our website. A very popular plugin with over 5 million active users, Elementor greatly simplifies the editing process to a drag and drop format that allows even beginners to maintain the page. The plugin also comes with many widgets and features that offer another layer of customization to make the site look as eye-catching as possible.

- **Woocomerce**

  Woocommerce is a plugin that is imperative to our process of creating a functioning online shop with many useful tools to assist us with such needs. Woocommerce, in itself, is already an incredibly popular plugin with more than 3 million active users (Keith 2022), making it one of the leading E-commerce platforms on the internet. The plugin provided us with many tools, such as product management, taxing and shipping options.

- **Yoast SEO**

  Search Engine Optimization techniques to reach its potential consumer by appearing at the top of the search (Sharma, D, Shukla, R, Giri, AK & Kumar, S 2019). The developers installed a plugin called Yoast SEO to aid with the Baby Hut website's online performance. Yoast SEO provides a variety of tools and features to help us achieve the highest standard of website SEO and overall readability.

- **MonterInsight (Google Analytics)**

  Per the client's request to utilize Google Analytics to track customer's browsing behavior, we decided to implement MonsterInsight, an easy to use, yet powerful plugin that essentially adds Google Analytics functionalities to the website, such as tracking where customers come from, how long did they stay on the site, which page did they go to, etc.

3, Security

As technology changes, it has become increasingly challenging for businesses to keep their company's information and their customer's information secure from cyber-thieves.

Understanding the importance of cybersecurity for any business, we have implemented various countermeasures against cyber security threats.

1. HTTPS – a secure internet protocol to ensure safe data transmission.

The main benefit of HTTPS is that it provides security and trust, HTTPS can protect users from attacks that can be launched from compromised or insecure networks. Moreover, it can also optimize the Google search engine which will be a major advantage over other websites.

2. Procedure security – most data breaches are caused by stolen or weak credentials (Kaspersky, 2020)

Administration personnel on our team are required to create a strong password for their account and this password is changed weekly to ensure the integrity, confidentiality, and availability of our website. The users on our website are also required to create a strong password to keep their information safe.

3. Jetpack – A powerful plug-in that is compatible with WordPress to ensure a safe website for the customers.

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Jetpack is a product of a company called Automattic which is the largest WordPress-based company in the world. This plug-in can block malicious attacks to our website, spam comments and spam emails are also dealt with using Jetpack.

We strongly recommended that Baby Hut executive consider purchasing the premium version of Jetpack to gain the backups and security scanning features as well as brute force attack protection for our website.

4, Mobile Compatibility (Portability)

Regarding website mobile compatibility, we have modified various aspects of the pages to fit the smaller resolutions of mobile and tablet devices. We needed to make sure the content was accessible and viewable through mobile devices, per the client's request.

Result

After spending weeks on the drawing board and going through multiple prototype testing, we were able to put together a simple, yet intuitive website for Baby Hut with all the requested features implemented and additional information that can help with their business.

1. **Design**

Logo - the designers went for a simple baby trolley in the center, a banner with the company name at the bottom, finished with a half-circle on top to make the logo resemble an igloo or a hut.

Theme - as mentioned before, Astra is the theme of choice, since it is easy to navigate and provides a very professional look to the website.

Browser Compatibility - the site can be accessed through different browsers, making it accessible to every potential buyer.

Portability - The website can be viewed on any device, whether it be desktop, tablet, or mobile.

2. Information Pages

Home - The home page contains a brief introduction to the company and buttons that redirect buyers to other pages (shop, company, etc.).

Company - The company page features everything people need to know about Baby Hut, from the background to the purpose of the company.

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3. Main features

Shop - Contains a catalog of products for the customers to browse through. When they click on a product, it will transfer them to the purchasing interface of said product.
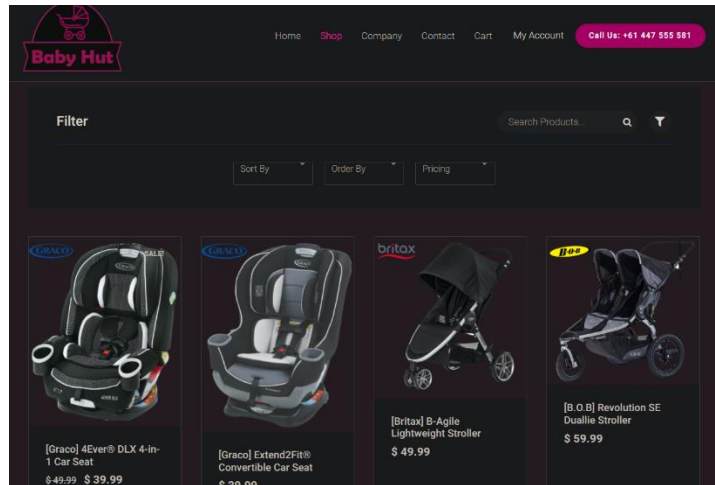
SEO - The Yoast SEO plugin elevates the Baby Hut website to another level by making its online presence more pronounced.

Sign-in - A sign-in option is integrated into the website in order to make it easier for the customer to buy, loan, and hire baby products. This feature also helps eliminate illegitimate buyers or bots.
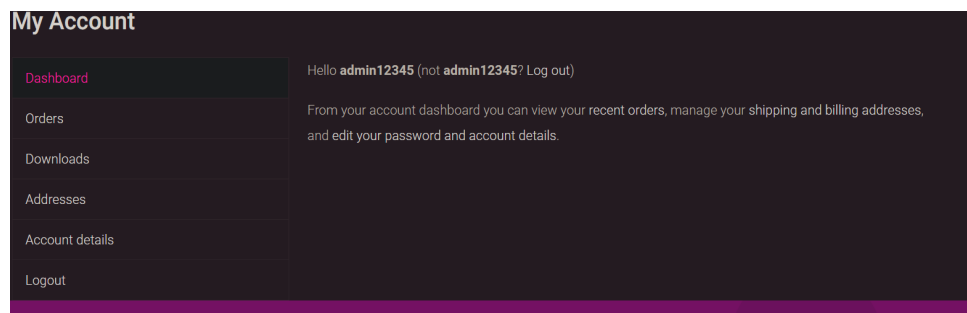
Contact - The contact page allows other companies and consumers to contact Baby Hut for cooperation or troubleshooting/technical support.

Social Media - An icon at the footer to direct visitors to Baby Hut's Facebook page.

Change Management

The old business process of Baby Hut did not use any online application such as a website. Moreover, the client has stated that they only possess basic IT skills. Therefore, there are requirements for the client before handling the website:

- Fully understand the user guide and organize training for other employees to maintain the website
- Pay attention to new updates and features on WordPress
- Constantly keep the information on the website up-to-date with the real data
- Constantly back up data on the website to prevent server crash or hacking activity
- Correctly use and update the Google Analytics, SEO and other plug-ins on WordPress
- Regularly check the security log on WordPress to notice abnormal activities
- Pay for the additional fee of hosting server and WordPress yearly subscription plan
- Notify us if there is any serious problem when maintaining the website so we can offer further support

Since the website is built by WordPress - a simplified tool used to build websites, it is not difficult for the owners and the company's staffs to maintain and use our website. However, if the business scale continues to expand and there are more data imported to the system, regular monthly maintenance and buying of additional storage for plug-ins should be carried out to ensure optimal performance.

Recommendation for future

Throughout the development of this project, we came across a variety of limitations and improvements that are needed for the future usage of the website. Although these limitations are mild and have not affected the overall quality and functionality of our website. It is suggested that Baby Hut executives should take these problems into consideration to optimize the effectiveness of the website in the long term. Detailed description of the mentioned limitations, as well as recommendation, are as follows:

1, Irrelevant website domain name

Description: It was required by Baby Hut executives that we should not register the domain name as the name of the company. A disparate domain name is less than ideal because it will subsequently lead to poor search engine optimization, diminishment of credibility and branding image.

Recommendation: According to research by Karan Girotra (2010) over one million internet domain names, a thoughtful domain name that is related to the business is important in promoting customer recognition and eventually is the key in enhancing search engine optimization and branding image. It costs around $10 - $20 a year to have and maintain a domain name. Since the company name is Baby Hut, our recommendations for the new website domain names are:

- Babyhut.com.au
- Babyhutofficial.com.au
- Babyhutstore.com.au
- Babyhutshop.com.au

2, Poor scalability for web server

Description: Our team is currently hosting the website on Profreehost.com which is a free hosting server with limited bandwidth and poor scalability. Considering the reputation of Baby Hut and page views of the old website, the free hosting server will have been inadequate once our website is put into commercial use. Therefore, the current web hosting site will be unfitting for future scalability.

Recommendation: A web server plays an important role in displaying the website content to our visitors. It is worth considering that a solid web server will be able to deliver information to customer as quickly as possible (Brenda Barron, 2022). A dedicated web hosting service costs between $5 - $830 per month, but we believe it is a worthwhile investment as it will cover all maintenance related to the server itself, including root configurations, security, backups, and disaster recoveries. Hosts that suit Baby Hut business plans and specialize in services designed just for WordPress are recommended below:

Host	Price	Subscription length for price shown
SiteGround	$10.69	1 month
BlueHost	$13.95	1 month
InMotion	$14.99	1 month
A2 Hosting	$41.99	1 month
WPEngine	$292	1 month

3, Limited options of customizations

Description: Our website is currently using a WordPress free plan with only 3 GB of space for uploading files and images, this may seem enough for the time being but as our business grows so does the need for more space for media and plug-ins. The current version of WordPress that we are using also does not allow for audio or video upload which will impede future marketing operation if the company decides to use video to promote their products.

Recommendation: We suggest that the Baby Hut executives should consider subscribing to WordPress yearly subscription plan. The advantages to upgrading to WordPress business are prominent, with the price tag comes a whole lot of additional features including more storage, the ability to use third party services, and the access to MySQL database. The recommended plans for WordPress subscription are as follows:

Plan	Price	Subscription length for price shown
Premium	$8.99	Per month, billed yearly
Business	$27.50	Per month, billed yearly
eCommerce	$49.50	Per month, billed yearly

User Guide

A detailed user guide with all of the steps and visual demonstration has been made by our team (see Appendix A)

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Conclusion

A new information system that is customizable, easy to maintain, safe and secured is the solution for the problems that Baby Hut is facing.

The website our team presented has satisfied almost all criteria and requirements. However, there are minor details that we could not complete due to the limitations of the free version of WordPress and website hosting service.

Nevertheless, our team strongly believe that our product and our support will give Baby Hut the lift it needs to reach its potential in the future.

Appendix

Appendix A

Swinburne University of Technology

ICT10001 - Problem Solving with ICT

Semester: January 2022

User Guide

BABY HUT

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Overview

Our web site provides the following functionalities:

1. Function 1: Log in, registration and profile system.

2. Function 2: Shopping system.

3. Function 3: Contact information system.

Administrative site

WordPress admin dashboard is basically the control panel for our entire WordPress site. We can create and manage content, add plug-ins to create more functionality, change themes, color and operate our database.

WordPress admin dashboard can be accessed through http://ictgroup4.ezyro.com/wp-admin with the provided username and password.

WordPress admin dashboard may be overwhelmed in the beginning; however, Front-end managers and Front-end users should just focus on the 5 main setting in the dashboard which are:

• Pages – where you can manage pages of your website, create a new one or delete any unwanted page on your website.

• WooCommerce – the backbone of our website, every functionality in our shopping system is powered by WooCommerce and this is the place where the shop manager can adjust according to the business situation.

• Appearance – where we can manage the outlook of our website, changing theme, adjusting color, or customizing the overall appearance of our website can be done here.

• Setting – General setting of our website will be managed here. Our site title, address, administration email address are the most basic yet important information of our website and the shop manager should be able to customize the mentioned information to best suit our business plan.

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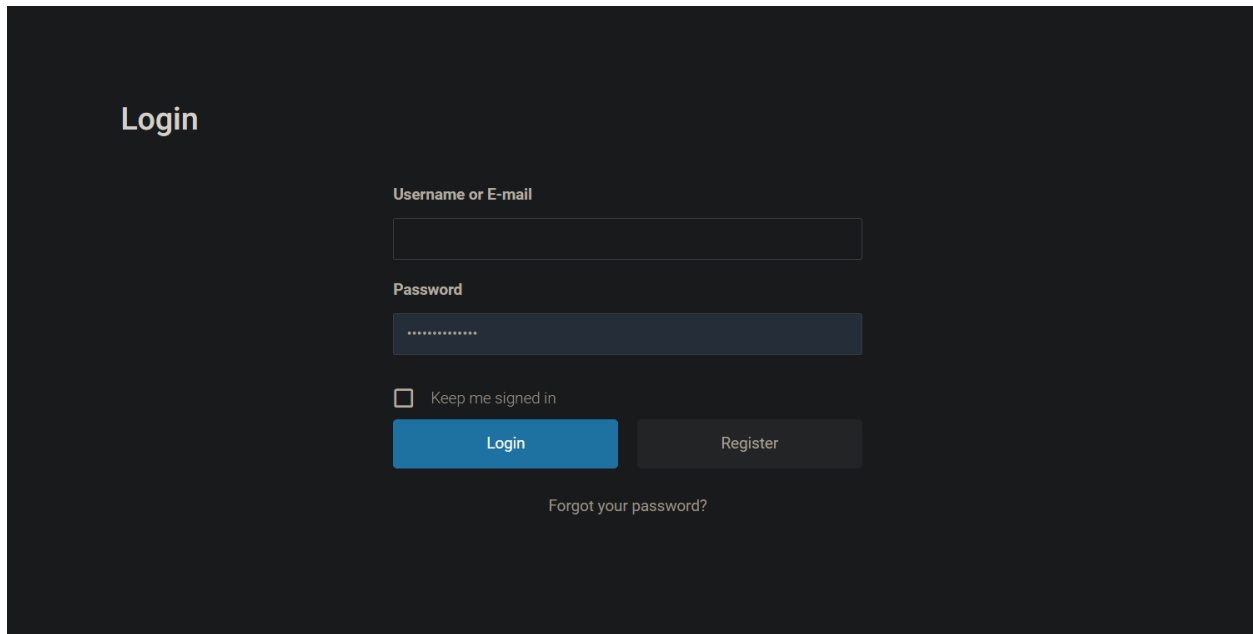
• SEO and Insights – These are the most useful tool for the analytic team of Baby Hut, search engine optimization tips and website insight will be provided in these plug-ins and the shop manager can also make change of these plug-ins to better manage the business.

Function demonstration

Function 1: log in, registration, and profile system

A. Log in system

Let's start by looking at our website log-in page (note that the log-in page for customer and log-in page for staff are different)

This will be the log-in page for customer and customer can not edit or customize any thing that is related to the front-end or back-end of our website

After finishing logging in the customer will automatically transfer to our home page
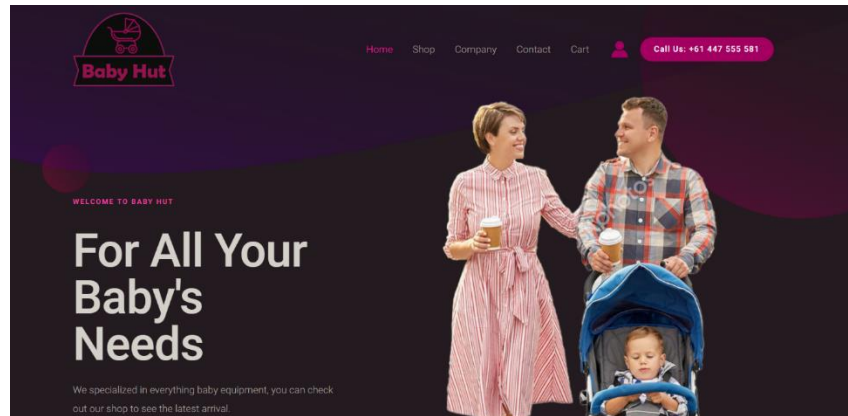
B. Registration system

Before the customer can be able to access our shopping system, they will need to register an account on our website. The register page will look like this.

After the registration process, the user will need to click on the login button to access our website and start shopping.

C. Profile system

The customers can view their profile and make change to their profile details
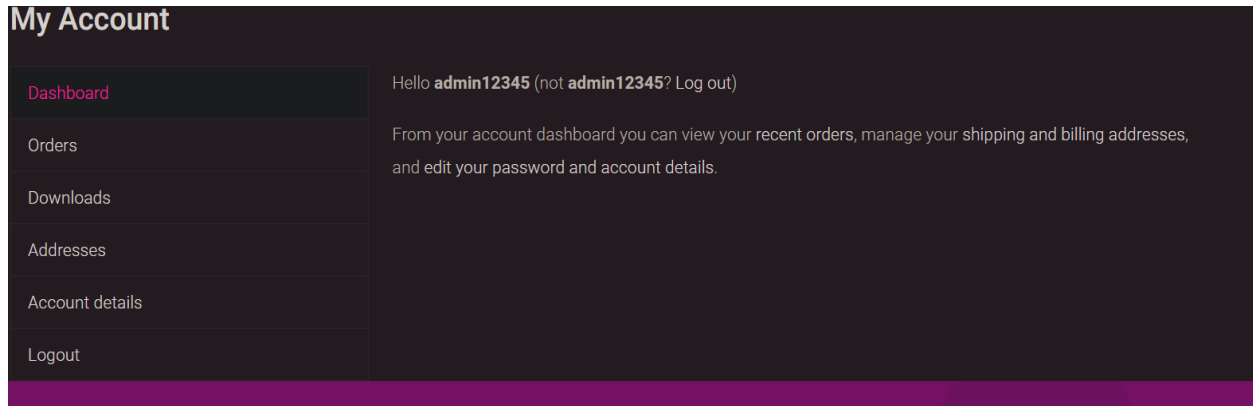
The information that customer can change are as follows:

A thorough profile system like this will enhance the users' shopping experience, give them the ability to customize information when change happens, and also empower Baby Hut operation team to serve the customer better.

Function 2: Shopping system

Once the user is logged into our website they can view Baby Hut product and purchase them.
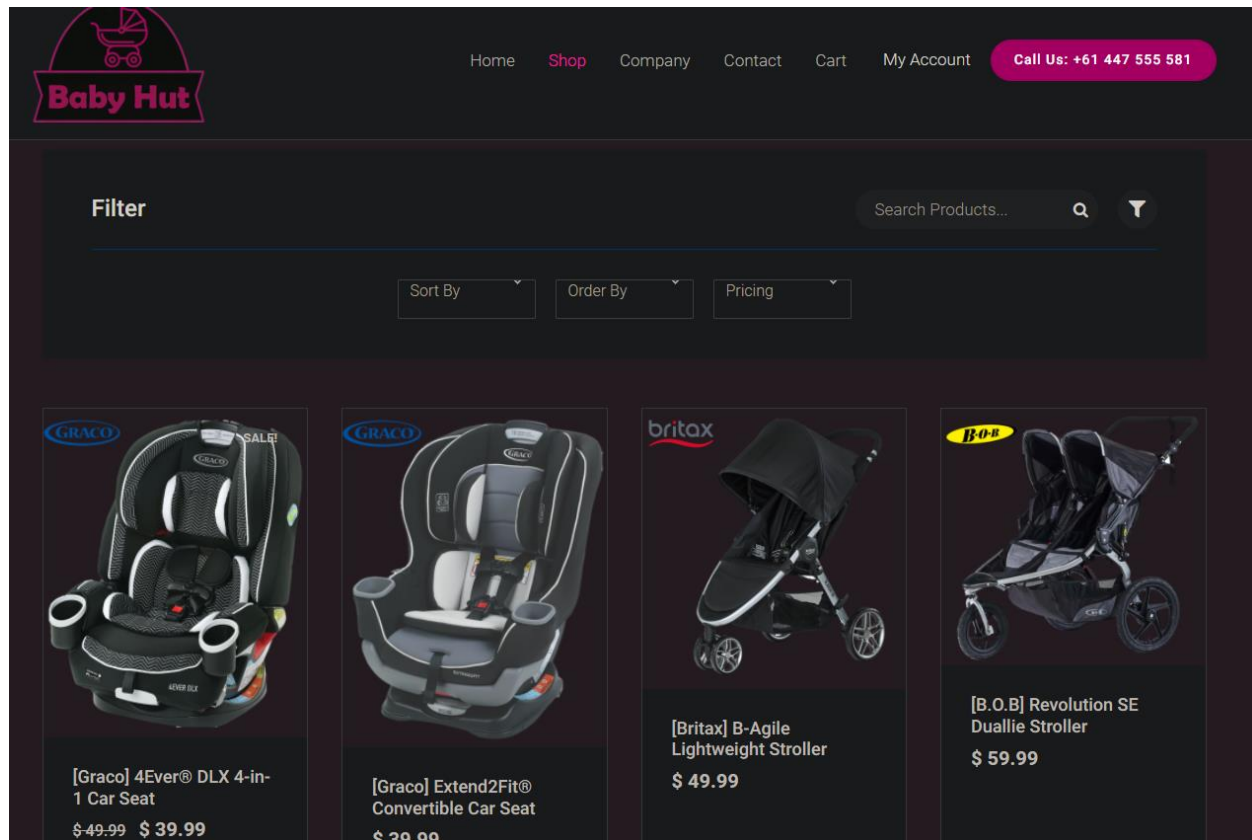
The user then can choose to have a quick view through the product or add them directly to the shopping cart

[Graco] 4Ever® DLX 4-in-1 Car Seat

$ 49.99 $ 39.99

[Britax] B-Agile Lightweight Stroller

$ 49.99
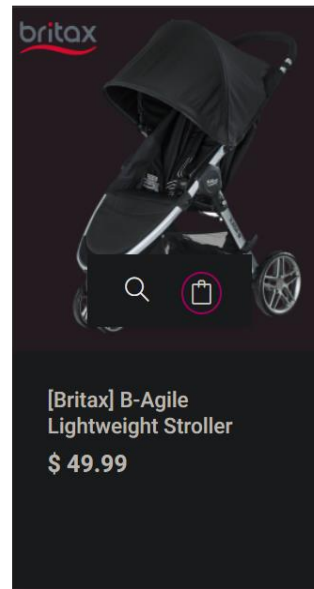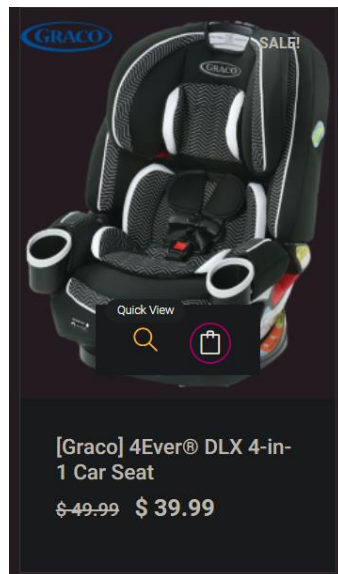
		Product	Price	Quantity	Subtotal
×		[B.O.B] Revolution SE Duallie Stroller	$ 59.99	1	$ 59.99
×		[Graco] 4Ever® DLX 4-in-1 Car Seat	$ 39.99	1	$ 39.99

The user can also view a list of products that they have added and apply coupon (if available) the the product to have a reduction.

The total amount of a product is presented, and the user can then proceed to checkout.

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The User then will have to submit the necessary information and click on place order to issue an order.

Billing details

First name *

Last name *

Company name (optional)

Country / Region *

Australia

Street address *

House number and street name

Apartment, suite, unit, etc. (optional)

Suburb *

State *

Victoria

Postcode *

Phone *

Email address *

Your order

Product	Subtotal
[B.O.B] Revolution SE Duallie Stroller × 1	$ 59.99
[Graco] 4Ever® DLX 4-in-1 Car Seat × 1	$ 39.99
Subtotal	$ 99.98
Shipping	Flat rate
Total	$ 99.98

● Direct bank transfer

Make your payment directly into our bank account. Please use your Order ID as the payment reference. Your order will not be shipped until the funds have cleared in our account.

○ Check payments

○ Cash on delivery

Your personal data will be used to process your order, support your experience throughout this website, and for other purposes described in our privacy policy.

Place Order

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Function 3: Contact system

If the customer needs more information regarding the product or the company policy, they can contact our support team, this can be done via the contact system.

Technical summary

Apart from user-oriented functionality, the shop manager also needs to know some basic information regarding the back-end of our website. We will discuss the domain information, hosting server and analytic tools for the clients to enhance the website functionality.

Domain information

Our domain is currently being hosted by profreehost.com which provide free hosting service, the domain is being protected by HTTPS encryption protocol; however, the HTTPS license will be out-of-date.

We recommend using sslforfree.com service to renew the license to make our site as safe as possible for our customers.

Domain setting and configuration can be accessed through the cPanel of our server, tutorial on how to access this information are as follows:

Step 1: Contact with our hosting service (in this case it is profreehost) and click on Client Area with the provided password.
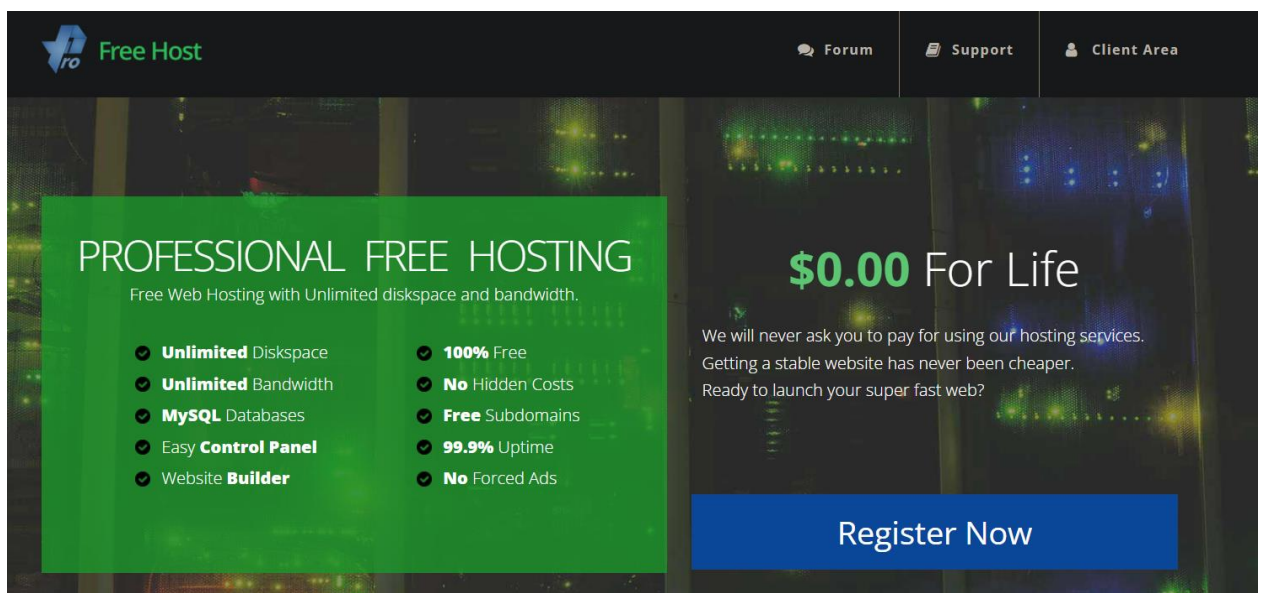
Step 2: Control panel of our website can be viewed through Client Area
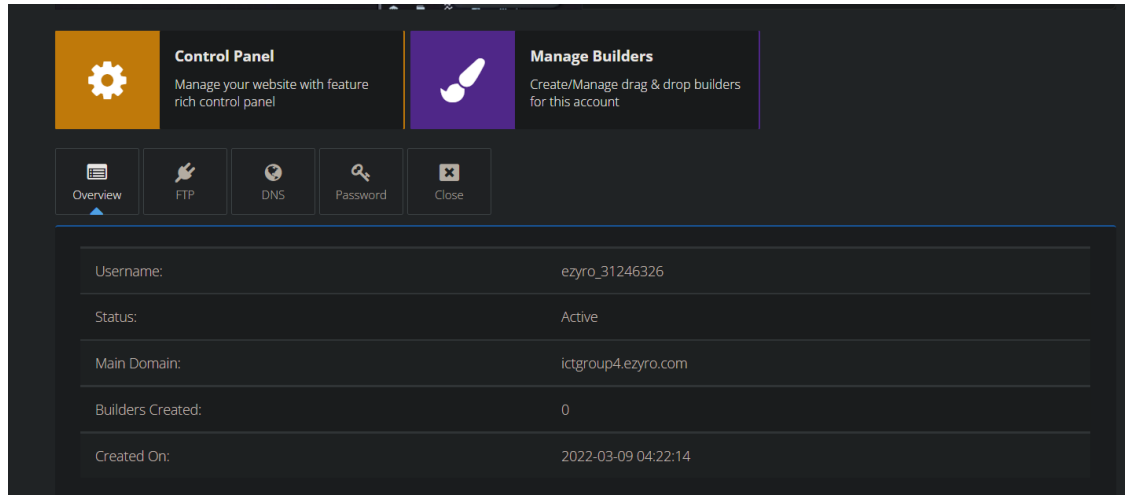
Step 3: Find the Domain section
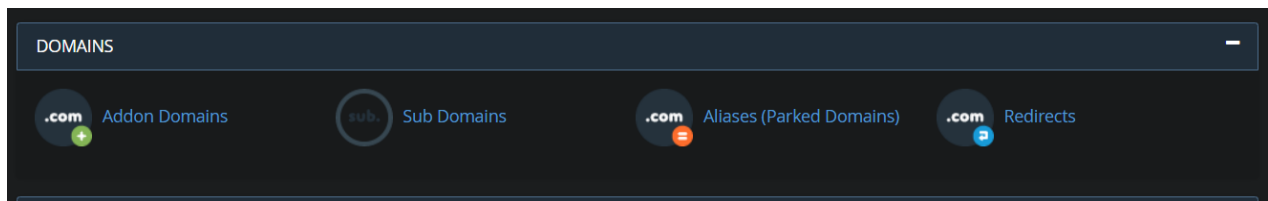
Please note that the data in the domain section is extremely important for the operation of our website, specialized knowledge is required to make change to these data.

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Hosting information

Our hosting provider is located at profreehost.com, overview and additional information about the hosting server can be accessed via:

Step 1: Contact with our hosting service (in this case it is profreehost) and click on Client Area with the provided password.
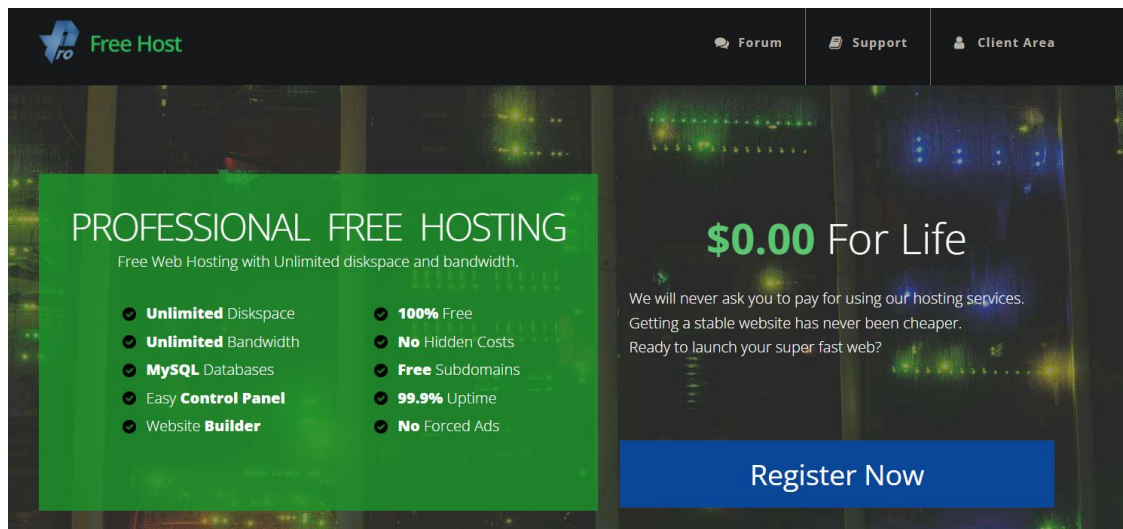
Step 2: Information about the hosting server is right below the control panel

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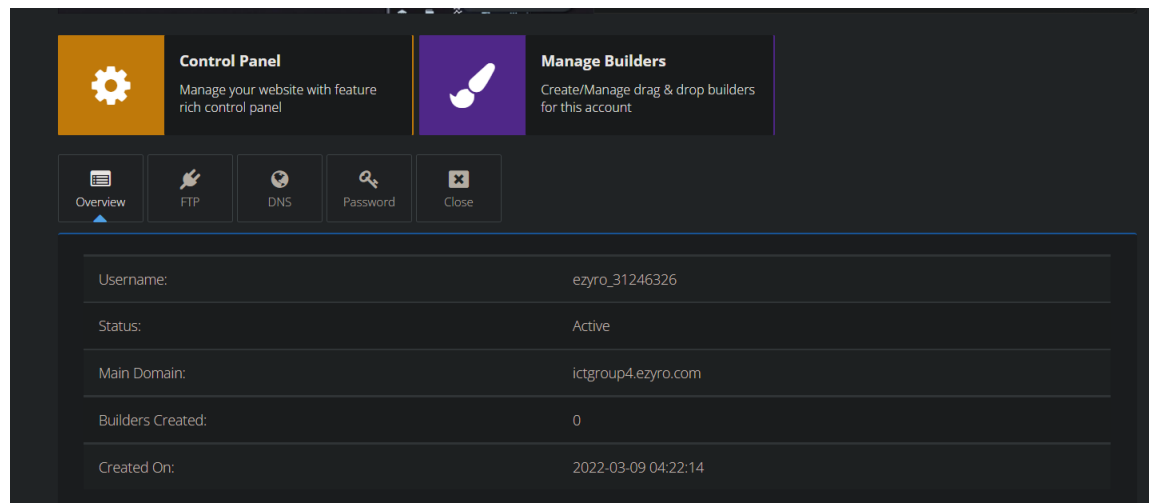
WordPress site

To manage the website effectively, shop manager should be able to perform 5 main settings in the WordPress site:

<u>Setting 1: Managing pages.</u>

Step 1: Access pages configuration via WordPress admin dashboard
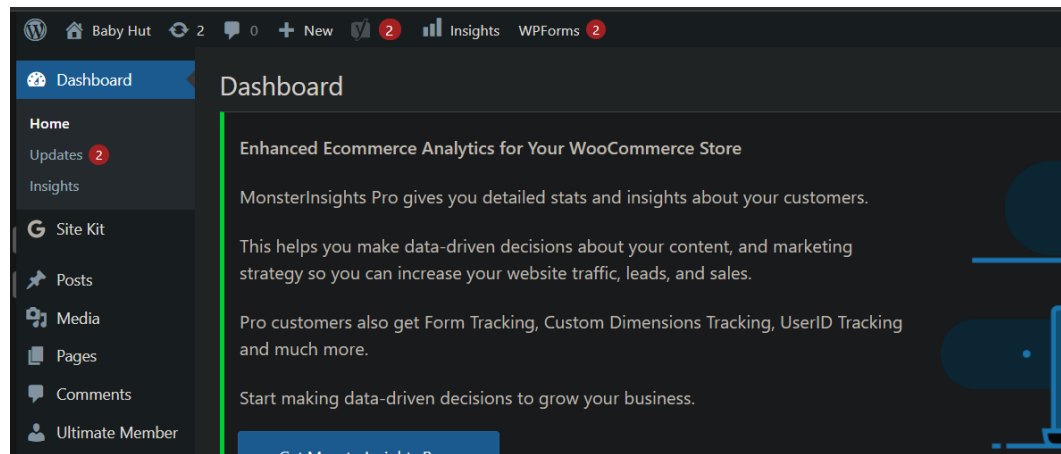
Step 2: Details about website pages will be presented

Step 3: User will be able to add new page via this button
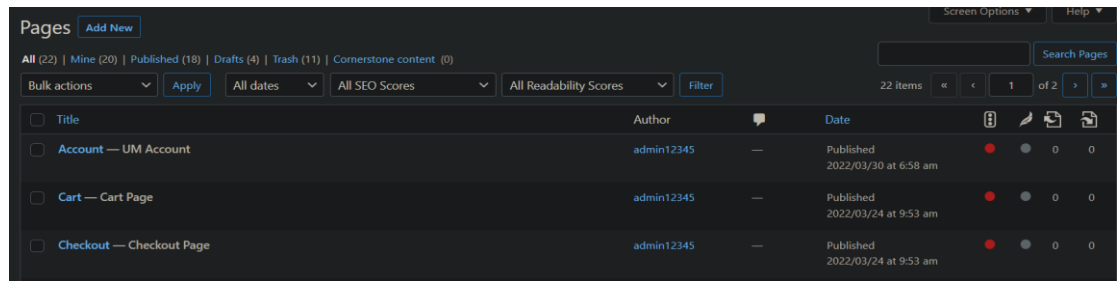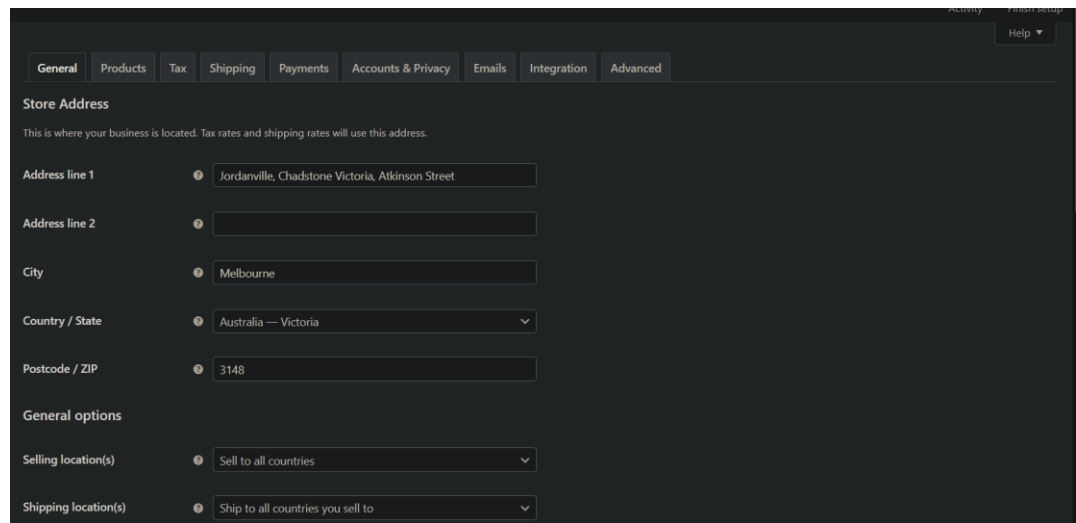
Setting 2: WooCommerce configuration

Step 1: Access WooCommerce setting in the WordPress admin dashboard
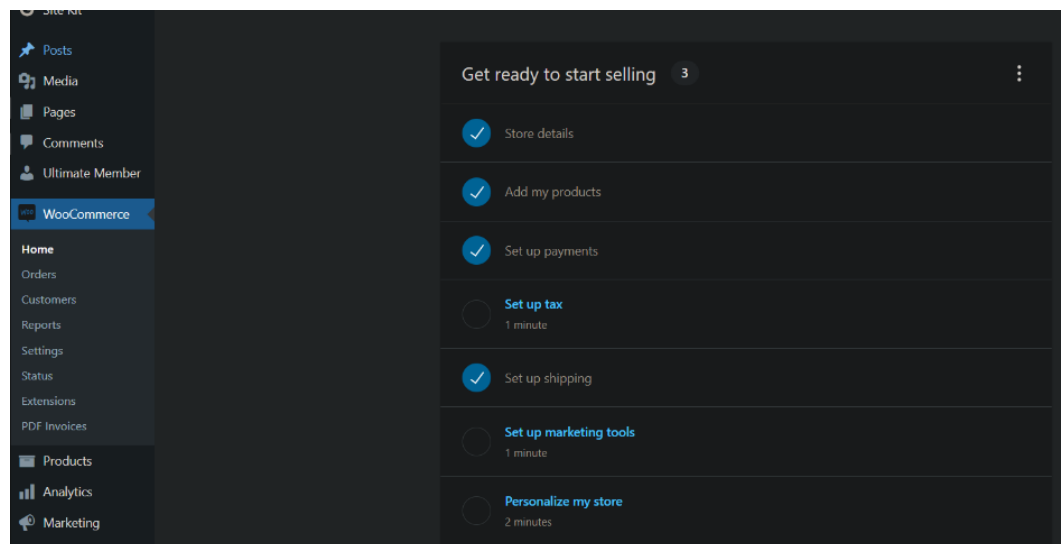
Step 2: WooCommerce general setting can be managed through these button

Setting 3: Appearance configuration

Step 1: Access Appearance setting in the WordPress admin dashboard

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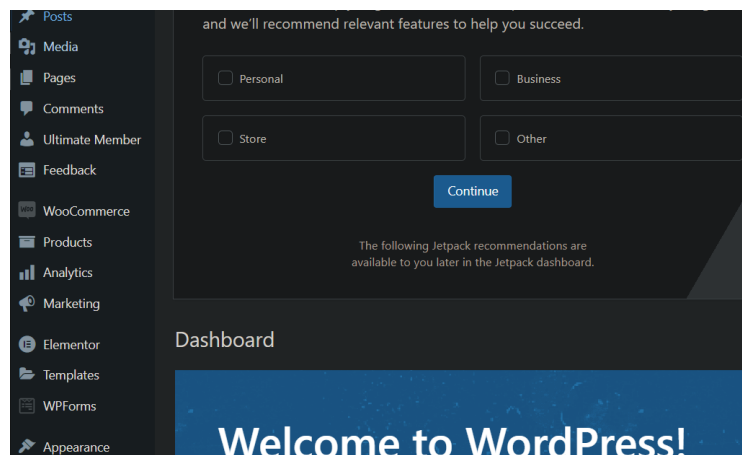
Step 2: Appearance menu contains a variety of options; however, shop manager should just focus on the menu option as other option might require specialized knowledge to customize.
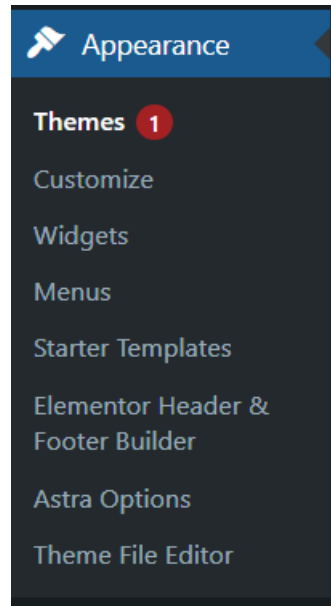
Step 3: Menu option allow the administrator to control what will appear on or page. Tick on the box where adding is needed and simply click on add to Menu

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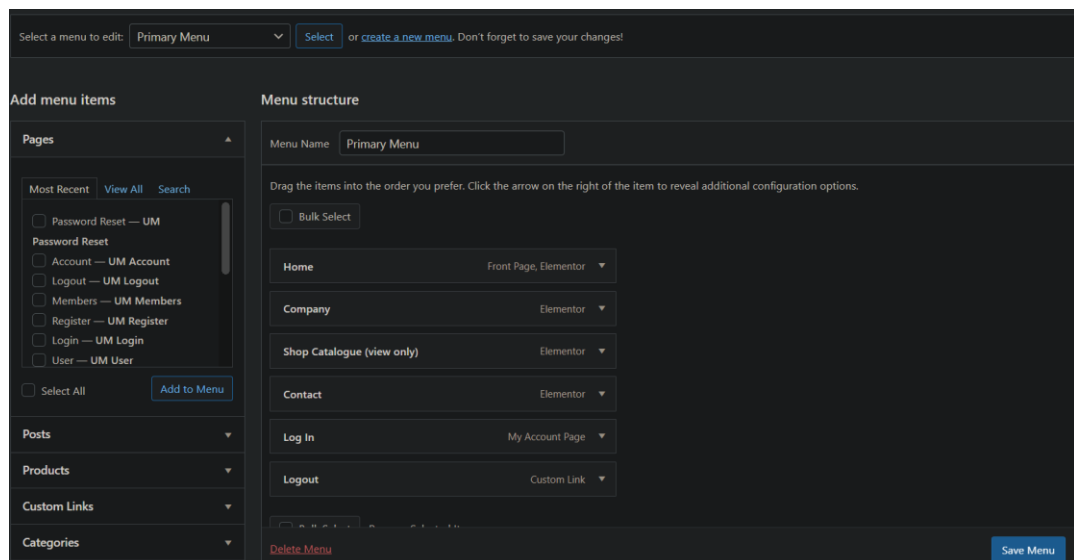
Setting 4: Website general configuration

Step 1: Access general setting in the WordPress admin dashboard
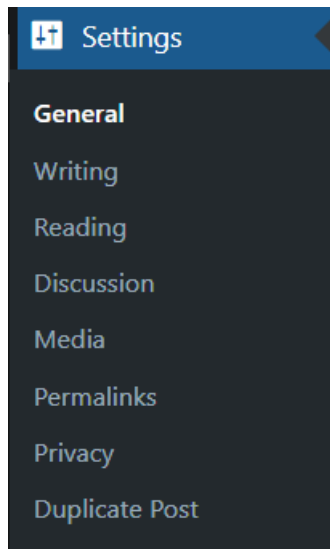
Step 2: Basic information such as the website title, address and administration email address can be edited here.
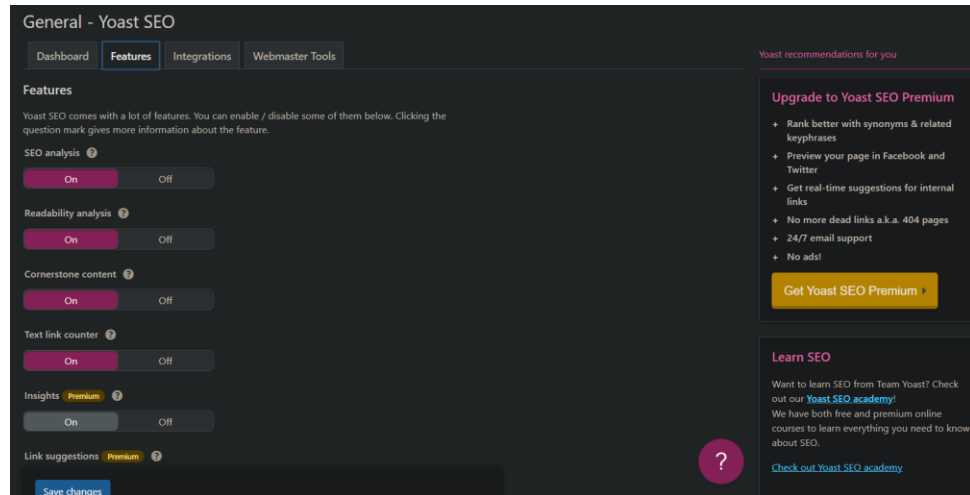

Group 4 ISCO

Setting 5: SEO and Insights

Step 1: SEO and Insights information can be accessed via WordPress admin dashboard. SEO general information can be viewed by clicking on the SEO button.
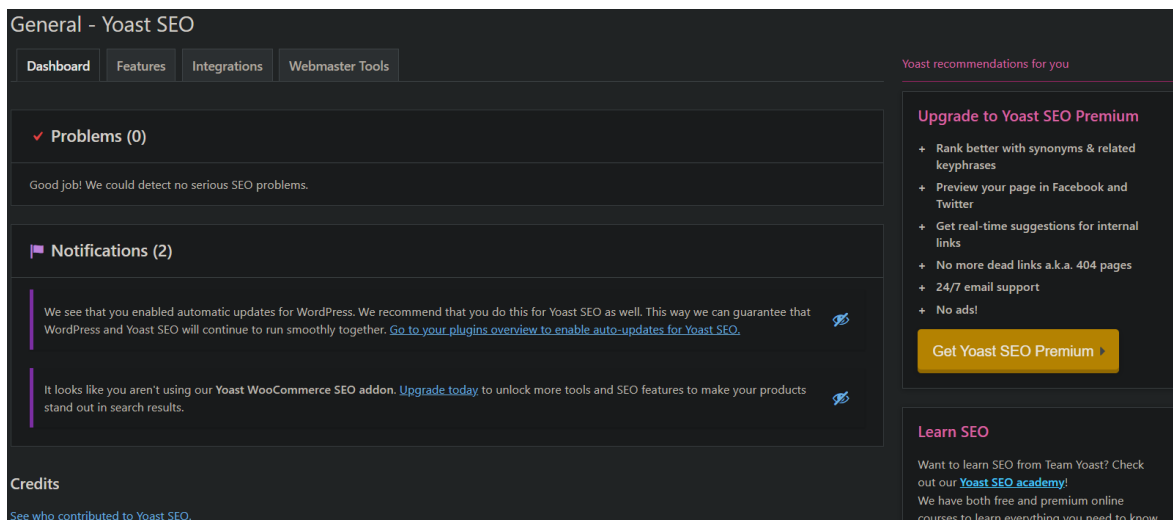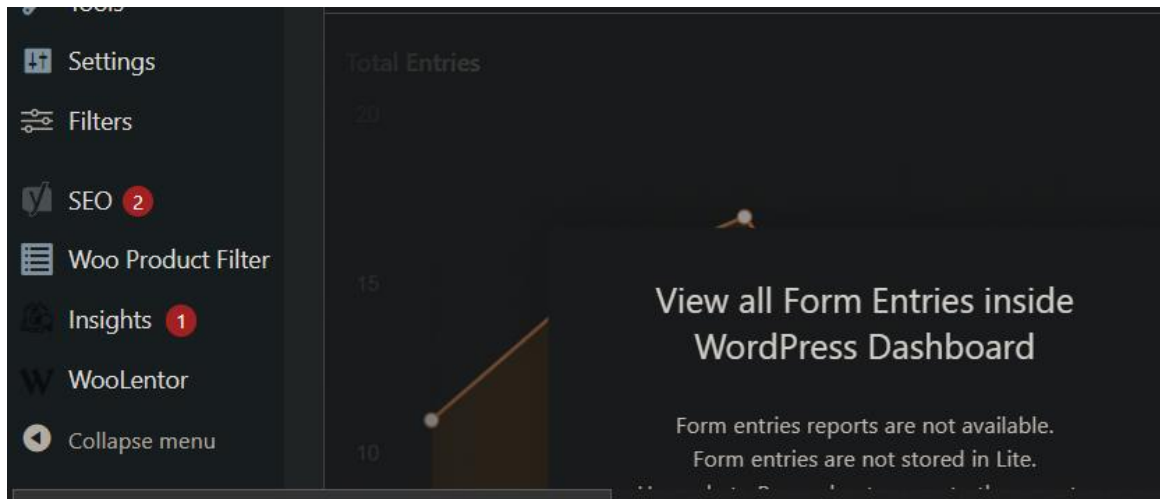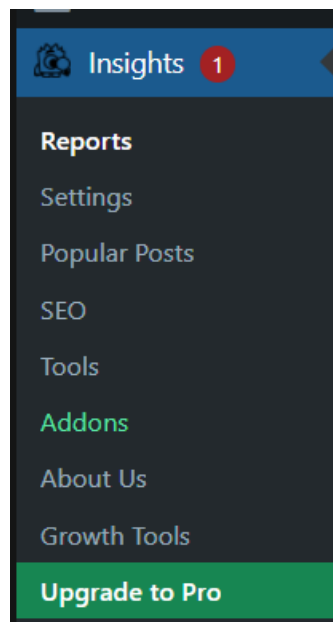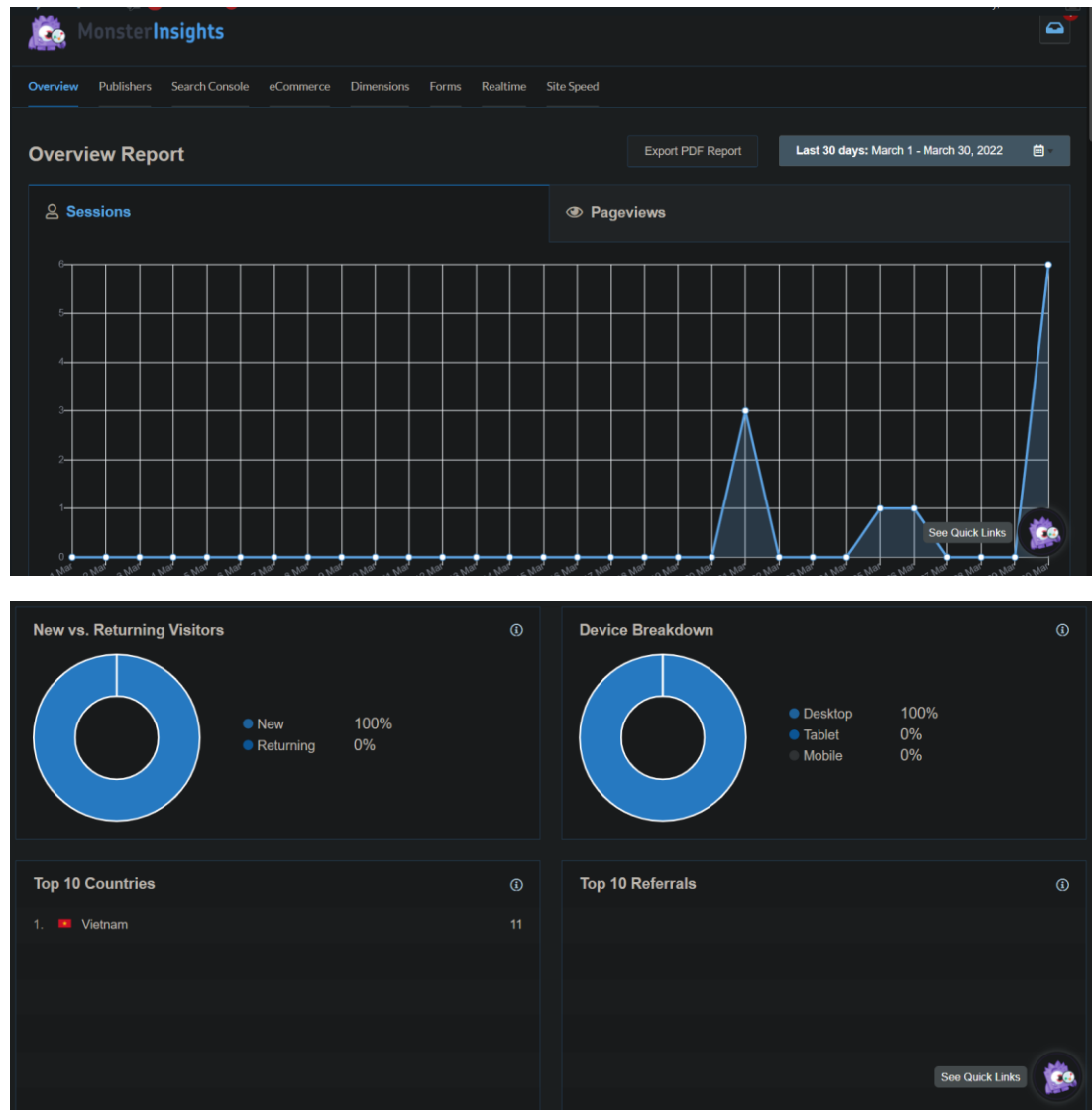
Step 2: More information regarding the SEO is also presented

Step 3: To view Insights information click on the Insights Button on WordPress admin dashboard

Step 4: Detailed information regarding the website traffic is presented

An administrative for google analytic will also be provided upon the project closeout.

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