

## **DYNAMIC WEBSITE FOR TAGAYTAY CITY**

A Capstone Project  
Submitted to the Faculty of  
School of Computer Studies  
City College of Tagaytay

In partial fulfillment  
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Bachelor of Science in Information Technology

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## ABSTRACT

Lecture timetabling is a very important process in any educational institution. It is an open-ended program in which courses must be arranged around a set of time slot 'T' and remains so that some constraints are satisfied. It constitutes a class of difficult-to-solve optimization problems that lacks analytical solution method. Data gathering on the current system was analysed to create a requirement definition for the improved timetable system. Literature review was carried out to search the best approach that can help to solve the problem in the timetable system. Genetic Algorithm has been implemented in the Timetable Management System. This is because Genetic Algorithm is able to produce a feasible timetable system. Java, XML and PHP programming languages were used in developing the solution. MySQL database was used as the back-end for the solution. The front-end solution will be implemented in an android mobile operating system for easier accessibility and proximity to users.

## **Chapter I**

### **INTRODUCTION**

In a society where constant access to the latest information is demanded and expected, the growth and development of the web are rapid. Websites that have information that's updated frequently are dynamic to make it easier and faster to get information online. Nowadays, the use of dynamic website is taking the lead to most developed websites. Based on Computer Hope (2020), Dynamic website was described as a website that contains information that changes depending on the viewer, the time of day, the time zone, the native language of the viewer, and other factors. Dynamic sites are highly functional, easy to update and can be interactive. With the use of dynamic website instead of having to change the entire page, you can change the site behavior within an individual web page. It is a great way to build an attractive and versatile site that's also easy to update and manage.

There are two types of websites: static and dynamic. According to Kalkman (2020), static websites are made up of a collection of HTML files, each of which represents one of the website's physical pages. Moreover, the data is shown precisely as it is stored. It is made up of HTML coded web pages that are kept on a web server. It does not change; it remains the same, or "static", for all site visitors. Dynamic websites, on the other hand, are websites that displays different types of content every time a user view it (Paredes, 2020).

Tagaytay is one of the most visited places in the Philippines and a perfect place for permanent residency. In Tagaytay alone, the Department of Tourism (DOT) claimed

4.22-million-day tourists and 982,120 overnight visitors in 2018 (Arnaldo, 2020). With regards to this, Tagaytay needs to have a website that can provide information to the residents and could provide a visual story of their area and the services it provides. In this present time, Tagaytay City has a static website running that can only provide limited function were changing and updating the page will be time-consuming and expensive. Due to this, the proponents aim to develop a dynamic website that will serve as a primary source of information where everyone can learn about the city. From basic information, city's history, emergency hotlines, latest updates, etc. can be found on this website. It has multiple function and is a great way of communication.

According to Thakur (2019), everything that alters the design of a web page is considered a dynamic web page. This makes it much easier for businesses to attract visitors and, as a result, convert them into potential buyers. There are several websites offering items and services on the internet in this technological era. However, it is also true that creating an efficient website necessitates a significant amount of effort and following the correct path. It should also be compatible with web standards.

It is the reason why the proponents are inspired to create a dynamic website for Tagaytay City that has the purpose of providing a better system, where everything from basic information to the latest updates in Tagaytay City can be found. The information is more organized and easier to access by everyone. The city itself can upgrade their local product endorsements, promotes its best tourist spots, provide guides on news and current events, and offer assistance to what the user wants to know.

## **Objectives of the Study**

The general objective of the study is to develop a “Dynamic Website for Tagaytay City” that is capable of updating information from time to time, make changes to its contents and use the website as a communication platform of the government of Tagaytay City and the residents and non-residents of the city.

Specifically, the study aimed to:

1. design a “Dynamic Website for Tagaytay City” that will provide:
  - a. access to the assigned system administrator and content creator;
  - b. manage the information by the system administrator and content creator; and
  - c. monitor and post the updates by the assigned system administrator of Tagaytay City.
2. test the website through unit testing, performance testing, acceptance testing and integration testing;
3. evaluate the website if it conforms to ISO9126 standards; and
4. prepare an implementation plan for the deployment of the system.

## **Scope and Limitation of the Study**

The study focuses on the Development of Dynamic Website for Tagaytay City that will help Tagaytay City to promote, communicate and give real time information and updates for the people living inside and outside the city in an easy and manageable way. The development of this system will benefit the city as well as the residents, tourists, investors and people who want to know more about Tagaytay.

The City of Tagaytay Official Website is a dynamic website where it contains the following:

1. Tagaytay City Official Logo – Located on the upper part of the website. Served as the website's title. This can be seen wherever page of the website the user's in.
2. Home – Located on the menu bar of the website.
  - a. Recent Posts – located at the left side of the website. It shows the preview of the recent post and when you click in every post it will redirect to the original post where user/viewer can leave a comment/reply with required name and e-mail and would need an approval from the author of the post.
  - b. Picture of the Mayor – located at the right side of the website with information about the City of Tagaytay below.
  - c. Tagaytay Weather Forecast – it is located below the Recent Posts. It shows the current weather temperature of Tagaytay City.
  - d. Different Buttons – buttons that will show information about City Government Officials, Taal Volcano Bulletin, Things to do in Tagaytay, Events(Festivals) and Sight Seeing/Parks.
  - e. Informative Videos and Clickable Photos – videos and photos that can be helpful for the residents/tourists.
  - f. Quick Links Buttons to Specific Part of the Website – Quick buttons linked to specific parts of the website.
  - g. Follow Us! – Located on the bottom part of the website. List of the City's official social media accounts.

3. About Us– Located on the menu bar of the website.
  - a. History – Sub menu. Past happenings and important events in the history of Tagaytay. Below is an example from the current official website of Tagaytay.

## History



Legendarily, the word Tagaytay came from "TAGA" meaning to cut and "ITAY" which means father. A father and son were said to be on a wild boar chase when the animal they were pursuing suddenly turned and attacked them. Fearing for his father's safety as the boar violently charged the old man, the son cried out "TAGA, ITAY!" which means "cut him down, father!" The son's exhortation and shouts reverberated in the valleys of the ridge and were heard by the residents, wood gatherers, hunters and kaingeros in the forests. Thus, the shout and the words Taga, Itay became the subject of conversation among the people in the countryside for several days. In time, the place from where the shouts came began to be known as the beautiful southern city of Tagaytay.

Figure 1. Official Website of Tagaytay(<https://www.tagaytay.gov.ph/history.html>)

- b. Quick Facts – Sub Menu. Contains the Demography Geophysical Location of the Tagaytay City
- c. Ecological Profile – Sub Menu. Ecological Profile of Tagaytay
  - I. The History of Tagaytay
  - II. Geo-Physical Environment
  - III. Population and Social Profile
  - IV. Local Economy
  - V. Infrastructure / Utilities / Facilities
  - VI. Local Institutional Capability
- d. City Google Map – Sub Menu. Google Map of Tagaytay City

- e. Component Barangays – Sub Menu. Contains all the list of Barangays and its Barangay Captain
4. Governance – Located on the menu bar of the website.
- a. Vission Mission – Sub Menu. Tagaytay's Mission and Vision
  - b. Local Officials – Sub menu. Images (.jpg), names and position in the local government of Tagaytay
  - c. Citizens Charter– Sub menu. Tagaytay City Citizens' Charter
  - d. Directory – Sub menu. Contains Contact number, addresses and person in charge of:
    - I. Local Government Offices
    - II. National Agencies
    - III. Non-Government Offices
    - IV. Conference and Training Centers
    - V. Commercial Complex
    - VI. Gasoline Station/ Water Refilling Station
    - VII. Leisure and Recreation Centers
    - VIII. Restaurants / Cafe/ Farms / Flower Shop/ Spa and Wellness Center
    - IX. Hotels/INNS/Apartelle/Apartment/Condo/Villas
    - X. Travel & Tours
    - XI. Religious
    - XII. Schools
    - XIII. Medical
    - XIV. Banks

- e. Full Disclosure- Sub Menu. Full Disclosure of Annual Budgets and Statement of Debt Services.
  - f. Invitation To Bid- Sub Menu.
  - g. City Seal- Sub Menu. Contains about the information of the Official City Seal of Tagaytay City.
5. Businesses – Located on the menu bar of the website.
- a. Investment Code – Sub Menu.
  - b. Business Permits and Licensing – Sub menu. Instructions on how to secure permits and licensing with list of requirements.
6. Tourism – Located on the menu bar of the website.
- a. Hotels and Restaurants – Sub Menu. Best Hotels and Restaurants.
    - I. Hotels – Sub Menu. Contains informations about different hotels
    - II. Restaurants - Sub Menu. Contains informations about different restaurants.
  - b. Tourist Spots – Sub Menu.
    - I. Amusement Parks – Sub menu. List and Information about Amusement Parks
    - II. Events and Festivals - Sub menu. List and Information about different Events and Festivals
7. News and Updates - Located on the menu bar of the Website. Contains all the news and update posted by the system administrator and content creator.
8. Downloads – Located on the menu bar of the Website. Contains all the list of files that can be downloaded.

9. Contact Us – Located on the menu bar of the website. Contains the telephone number, e-mail address and website address of Tagaytay City.
10. Dark Mode Button - Located on the lower right part of the screen in all pages of the website.
11. Acknowledgement – Located on the bottom part of the website. Can be seen wherever page of the website the user's in. The Tagaytay City Hall Building Address, Telephone number and name of the developers are included in this section.

There are three level of access:

System Administrator is responsible in running the system. Has the ability to change the website's UI and function. The person creating account and give access to the content creator and can remove account information. System administrator is also responsible in system customization, update content and system maintenance.

Content Creator is the one responsible in making the content for the website's facade. Has the ability of managing the content by adding post, edit and delete/retrieve post as it was the only authorized to them within the website. Their access on the website will be given by the system administrator and can only edit their profile photo, nickname, e-mail address and password.

User/Viewer can only view the website and doesn't have the ability to change anything on the website's UI and functions. Can view and leave a comment/reply to be approved by the author of the post but doesn't have the access to post anything on the website. Has the ability to download files from the Downloads Menu.

The proponents used Content Management System or CMS specifically the WordPress as it is an easy platform to use in web development because it is customizable, the plugin and the theme it has can build almost any type of site.

However, the study is limited of providing an access without an internet connection. The default view is on desktop view, and when viewed on mobile devices, the website will be more compact and compressed. Image, text, audio, and video file sizes are limited depending on the database size. The size of images/video is adjustable from 32mb up to 64mb per post. The theme cannot be change just as what you want because it might affect the functionality. The widgets cannot be used if it is not unlock in the editor, the themes and elementor plugin should be upgraded by purchasing its pro version to use its full features. The availability in any browser and mobile devices cannot be assured.

### **Significance of the Study**

The “Development of Dynamic Website for Tagaytay City” is conducted to provide a fast and easy manageable, easy update in a real time information and a user-friendly website to the intended user.

Furthermore, it would be beneficial for **Tagaytay City** in promoting and providing updates to its local residents and tourists in the most convenient way.

The **System administrator** will gain benefits to the system because they can easily update and manage the content of the website without having to change the entire page.

The **Assigned staff in every department** that labeled as the content creator will be benefitted in terms of managing the content that will be more easy and more organize that can also gives a real time update of information about the City.

The **Residents, Tourists and all the persons interested in the city** that labeled as the user/viewer will also benefit a lot because they can get information about the city without going personally to the city office that will also limit physical contact to other people for inquiries.

The **Proponents** gained benefits from the study because they were able to gain more knowledge, developed skills in terms of creating documents, presentation and programming, as well as develop self- confidence. The proponents could also give back to the community.

The **Future Researcher** can use the study as a reference for related study or to other organization and can also be used to upgrade the website.

## Theoretical Framework

The combine idea of the proponents to the development of the system and the proposed relation between the system administrator, content creator, user/viewer and the system will define in the figure below:

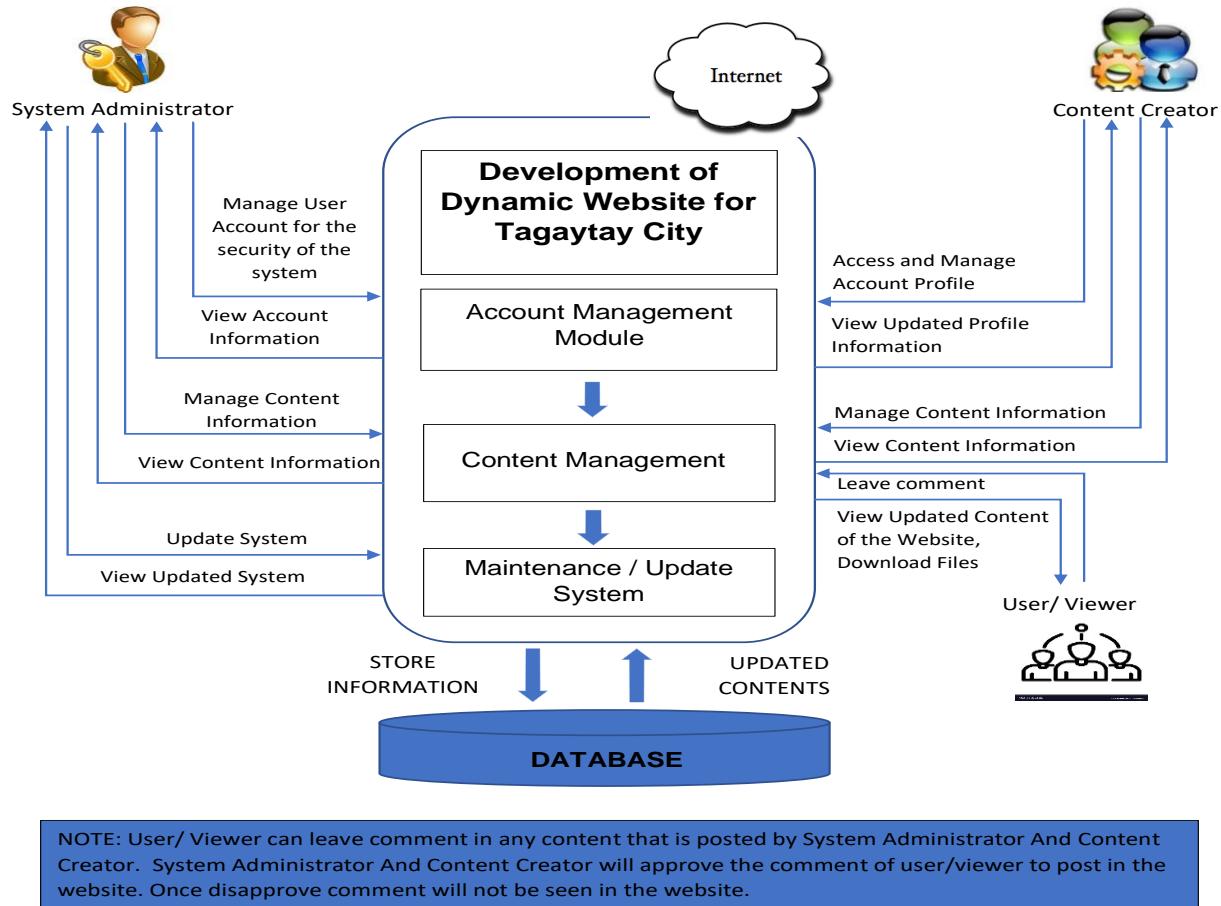


Figure 2. Theoretical Framework of Development of Dynamic Website for Tagaytay City

The Theoretical Framework of the study as shown in Figure 2 illustrates the process/flow of the study through every user. The illustration shows the “Development of Dynamic Website for Tagaytay City” which has three modules, the account management module where system administrator has the access in order to edit and update the website and for the information to be secured in any harmful acts done by others. The

system administrator will also provide an account and give roles to the content creator. And the content creator can only edit their profile photo, nickname, e-mail address and password. In the content management, the system administrator and content creator will be able to update contents by adding post, approve/disapprove comments of the user/viewer, edit and delete/retrieve post. These updated contents of the website can be seen or view by the users. The user/viewer can download files and leave comments/reply to be approve by the author of the post. For the maintenance/update system module, the system administrator will monitor the behavior of the website and prevent any bugs that may encounter by the users. All of the information of the system will be saved in the database and updated contents will be ready to be seen by the users.

## Conceptual Model of the Study

With the collection of ideas, theories, and related studies, conceptual model was developed as shown in the figure below.

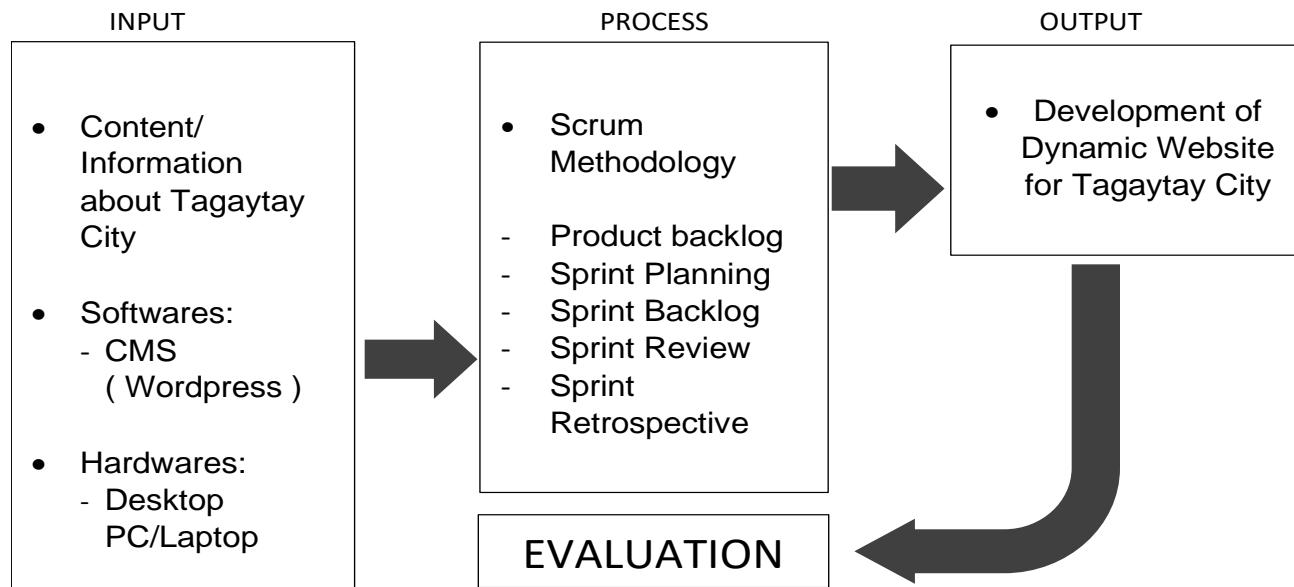


Figure 3. Conceptual Model of Development of Dynamic Website for Tagaytay City

Figure 3 illustrates the three main activity that was used in the development of the study which includes Input, Process and the Output where in the Input contains of the information about Tagaytay City including the Tagaytay City Official Logo, Tagaytay Weather Forecast, Picture of the Mayor, History, Ecological Profile, City Google Map, Component Barangays, Vision, Mission, Local Officials, Citizens Charter, Directory, Full Disclosure, Invitation to Bid, City Seal, Investment Code, Business Permits and Licensing, Tourism, Amusement Parks, Events and Festivals. For the Software Requirements, the study used a WordPress CMS and for the hardware requirement a computer or laptop is required in constructing the system.

In the Process Stage, the proponents followed the cycle of the scrum methodology that consist of Product Backlog, Sprint Planning, Sprint Backlog, Sprint Review and Sprint Retrospective to guide and help the team and organization in the development of the dynamic website.

In the Output Stage, the proponents provides a developed application called "Dynamic Website for Tagaytay City".

The Evaluation was the important part of the process because this help in improving the website. For the pre evaluation the proponents got feedbacks from the intended users and for the final evaluation the proponents provided a questionnaire/evaluation form to know if the system meet the standards based on ISO9126.

## **Chapter II**

### **REVIEW OF RELATED LITERATURE AND STUDIES**

This chapter presents the review of related literature and studies underlying the framework of the study.

Today, one of the most effective and efficient ways to communicate is over the Internet. The Internet allows us to connect with a wide range of individuals and read news and information from all around the world, whether through Facebook, Myspace, Yahoo, or another website. It is important for a business or a city to have its own website for its customer or tourists to know if it is worth investing or going for. According to Suriani, et al. (2016), websites are a global information medium that are used for information exchange and have recently expanded their functions to include socialization and transaction. Websites are considered medium for delivering information and as a tool of promotion, which is sufficient to help a firm flourish.

When creating a website, a good web design is a requirement. Good web design directs your users' eyes and tells them where they should look. There are two types of web design: dynamic web design and static web design. In dynamic web design, the term 'dynamic' usually refers to the ability to change, whereas in static web design, the term 'static' refers to the ability to remain fixed. Static web design is appropriate for tiny websites; however dynamic web page design is ideal for larger websites (Mansoor & Abdullatif, 2017). It is important for the web designer to draw the audience attention and make them interested on the content of your website.

In this present time, dynamic websites are more popular than static websites. Dynamic websites are easy to use and more convenient to the creator and the users. It changes depending on the viewer, the time of day, the time zone, the viewer's native language, and other variables as explained in a study of Yahaya, et al. (2017). A dynamic website is a platform that allows for two-way interaction between the website's creator and the user, or between the user and the user. The website serves not only as a hub for city information, but also as a promotional tool and media, marketing tool and media, and a repository for the city's digital data. With a dynamic website, it will be easier to measure some aspects of the city, such as satisfaction, suggestions, and the economic value of figures and data (Nastiti, et al., 2018). A simple way to tell if a website is dynamic or not is to engage with it. If you interact with it, it is most likely dynamic.

The use of dynamic website is very evident nowadays. As stated in an article by Tihalt Technologies, writing blogs, e-commerce sites, calendar, to-do sites and other types of sites which needs updating frequently are examples of dynamic websites. Amazon.com, ranked as the most popular e-commerce site in the world (analysis by [www.similarweb.com](http://www.similarweb.com), updated last July 2021), is a dynamic website. Apartmenttherapy.com, sayyes.com, as well as brightbazaarblog.com are examples of dynamic website.

The most crucial aspect of creating a dynamic website is to achieve the principle of "dynamic". In contrast to a static website, the content of a dynamic website can be altered by the user (Song, 2012). Dynamic websites should be adaptable, user-friendly, and simple to manage, and they should be referred to as applications rather than sites (Yahaya, et al., 2017). In addition, there are also five elements to be considered during

the implementation. Firstly, the website home page, since the user will get first expression. Therefore, the home page should be clearly displaying the purpose of the website. Secondly, the page layout is important as well. For example, the content of website should be visible without scrolling. Thirdly, the navigation should exist in all pages and the scheme of navigation should be same. Lastly, the website color, developer should prevent the use of glaring colors, because glaring colors can distract users' attention. (Zalas, 2012).

Based on Granholm (2015), website development can be done manually on a computer or with the help of various Content Management Systems (CMS). CMS allows anyone to create a website quickly and easily, even if they are not familiar with programming languages. The rising complexity of website design and management necessitated the creation of a Content Management System (CMS). CMS stands for content management system, and it is a powerful tool that makes ordinary tasks like administration, publication, and change much easier. The use of this platform allows users to concentrate on the semantic substance of provided information rather than the design and code.

Since information on a website change more frequently than the layout, the CMS principle divides content and design into two independent components, substantially facilitating the application of any modifications to the site and making populating a new template much easier. Ready-made modules and plugins, which can be chosen by a web developer, compose and build the website like a constructor. The user-friendly interface for editing material makes it simple for anyone with no coding experience to interact with information on web pages. CMS is also highly useful for a skilled web developer because

knowing markup and scripting languages expands the options for modifying module structure and creating unique designs and functions. WordPress is the most popular CMS, according to [opensourcecms.com](http://opensourcecms.com)'s 2015 ranking of building platforms.

WordPress is the most widely used, free, search engine optimized, user-friendly, and open-source content management system (CMS) which established on PHP and MySQL database (Rab, 2018). It is used in creating a website, customizing it, optimizing your website and designing. You can change the look and feel of your site by editing the HTML, CSS (style sheets), or PHP (server-side code) of your site because WordPress and its themes are open source. Using tutorial resources available on the web, even non-technical people who aren't completely familiar with HTML or CSS can make simple changes, such as changing colors, fonts, and positions (Allen, 2008). Yahaya, et al. (2017) performed a study on four elements that motivate people to embrace software methodology: policy, basic SW methodologies, useful tools, and customized methods. The useful tools were rated as the most important aspect. This emphasizes the critical relevance of the tools that developers should have access to. The Content Management System, or CMS, is one of the most significant technologies. CMS is presently playing in the dynamic website domain due to the greatest percentage of respondents who said they utilize CMS while creating dynamic websites.

The Walt Disney Company, one of the multinational mass media and entertainment company, uses WordPress for its corporate website. Sweden's Official Site is the country's official information portal, which shares business, culture, customs, nature, facts, and society-related news. It's built on WordPress and makes good use of it. Katy Perry, Sony Music, Sylvester Stallone, The Official James Bond and many huge

names are using WordPress, to display what they want to promote, endorse and their products.

Frameworks assist researchers in determining the best technique and methodologies to use in a given situation based on what they are attempting to learn (Godfrey, 2019). It also helps in the organization and planning of research activities based on the breadth and scope of the topics being investigated. Based on a literature study, the theoretical framework describes the research's major concepts, offers relationships between them, and examines important theories. A strong theoretical framework provides direction for research, allowing for persuasive interpretation, explanation, and generalization of findings (Vinz, 2020). A conceptual framework depicts what a researcher should expect to find during their study. It identifies the study's relevant variables and shows how they may be related to one another (Swaen, 2015). Based on inputs and outputs, a data flow diagram depicts how data is processed within a system. The flow of information, data sources and destinations, and where data is stored are all represented using visual symbols. As stated in an article from Lucid (<https://lucid.co/>), data flow diagrams are frequently used as a starting point for system redesign. It creates an easy-to-understand image of what a system works by providing a graphical representation of it at any level of detail. A context diagram, also known as a level 0 DFD, which depicts a system as a single process, provides a general overview of a system. A level 1 diagram goes into greater detail and focuses on the primary functions of a system. Level 2 and above diagrams show the operation of a system in greater detail. Because of the rising complexity, it's uncommon for a DFD to go beyond level 2, making it less effective as a communication tool.

Yourdon-Coad and Gane-Sarson are the two primary varieties of data flow diagram notation, both named after the specialists who helped establish DFD methodology: Ed Yourdon, Peter Coad, Chris Gane, and Trish Sarson. There are some stylistic distinctions between the different notation systems. Yourdon and Coad notation, for example, utilize circles to depict processes, but Gane and Sarson notation use rectangles with rounded corners to describe processes. Another variant is the symbol used for data stores: parallel lines are employed by Yourdon and Coad, but an open-ended rectangle is used by Gane and Sarson. Because DFD symbols differ, it's critical to keep your notation consistent in order to avoid confusion. If you're using DFD software, it's likely that it'll tell you which symbols you can use. Entity, process, data store, and data flow are the four essential parts of all data flow diagrams.

Websites are becoming a significant interaction between citizens of a country and various government organizations providing various types of services, according to Manhas & Mansotra (2013). A website's quality and reliability are critical due to its potential global audience. To make a website portable, Manhas and Mansotra advocated testing it on a variety of popular and extensively used browsers throughout the design phase. Use the development tools to add more functionality to pages that are supported by the majority of browsers. The only approach to avoid these issues is to adhere to the rules.

According to an article by GCFLearnFree.org, a web browser is a piece of software that allows users to explore the Internet and view webpages. There are numerous online browsers available, but Google Chrome, Internet Explorer, Safari, Microsoft Edge, and Mozilla Firefox are among the most popular. Websites are tested to different web

browsers and devices to make sure that it is working properly. Different mobile devices, operating system and versions are also used by web developers for trial and checking of changes in the design. Developers can easily detect and adjust the mistakes on the positioning of images in the websites when tried to different web browsers and devices especially every device have different screen sizes.

ISO/IEC 9126 is an international standard intended to ensure the quality of all software-intensive products including safety-critical systems where lives are at risk if software components fail (Al-Kilidar, et al., 2005). This criteria has been widely applied in studies aimed at determining a system's quality. The ISO/IEC 9126 standard specifies six quality characteristics: functionality, dependability, usability, efficiency, maintainability, and portability (Suwawi, et al., 2015). It is divided into four parts: ISO/IEC 9126-1, ISO/IEC 9126-2, ISO/IEC 9126-3, and ISO/IEC 9126-4. ISO/IEC 9126-1 or Part 1: Quality model gives the recommended quality model for the final product, which includes crucial quality attributes. Part 2: External Metrics offers external quality metrics for evaluating software quality attributes relevant to an executable software product during testing or operation after entering the operation process at a later stage of development. Part 3: Internal Metrics offers internal quality metrics for assessing software quality characteristics that apply to a non-executable software product during the design and coding stages of the development process. Lastly, Part 4: Quality in use metrics offers quality-in-use metrics for assessing the quality of an executable software product after it has entered the operation process (Djouab & Bari, 2016). The six main quality characteristics are identified by the ISO 9126 software quality model, namely: functionality, reliability, usability, efficiency, maintainability, and portability. These qualities are divided into

subcategories (Buenaflo, 2017). It also identifies three model of software product quality, namely: internal quality, external quality, and quality in use (Djouab & Bari, 2016).

The Raosoft sample calculator is a piece of software that primarily calculates or generates a research or survey's sample size. It might be difficult to estimate a sample size for a survey, project, or research. As a result, the Raosoft sample size calculator provides both sample size confidence interval calculation to help you avoid these common research problems. The margin of error, confidence level, and response distribution are all taken into account by this software. It also allows you to see how the margin of error might be with different sample sizes (projecttopics, 2018).

## **Related Studies**

Here in the Philippines, local governments have developed e-governance through the use of websites. According to an article by DICT Philippines (2014), Electronic government (e-government) is the use of information and communication technology (ICT) and other web-based technologies to improve public service delivery, efficiency, and effectiveness. Citizens may get information and services anytime and anywhere with an ICT-enabled government, and government operations are more transparent and accountable. e-Government allows people within its authority to transact with the government electronically. These services vary depending on the needs of the users, and this has resulted in the growth of several types of e-Government (Khalid et al., 2019).

The Official Website of the Municipality of Alfonso developed by Mr. Añonuevo (2017) is an example of an e-Government dynamic website. This government website is created for the residents and non-residents of the Municipal to provide the information

they need. It is built to promote local products and tourism. The WordPress VIP Director of Platform Services, Peter Slutsky, recommend the use of WordPress CMS to develop government websites.

A study was conducted by Incognito, et al. (2016), in which they developed a website that can be browse using any browser available on desktop and even in mobile devices which provides help and a tool in advertising the subdivision to every client in an electronic manner. A website that is capable of viewing the information of the model houses/open houses for sale by the clients . This study had followed the guidelines of the World Wide Web and meets the criteria based on the evaluation instrument from the ISO 9126.

Bautista et. al (2013) developed a website which used for a faster way of finding a restaurant and help the users by guiding their travel. It is also the best way for advertising the restaurant business. The web-based locator is a static website whose output depends on the only present output of the input. The website has various functions which is to provide information about the restaurants, provide the location detail of the chosen restaurant, allow the users to search for a specific restaurant and provide user an interactive map. This project was designed using CSS/bootstrap and Adobe Photoshop CS6. ISO 9126 was used that served as the main tool in collecting and ranking the system performance and got an excellent rating that proves that the website is suited to the functional requirements and is user-friendly, portable, and adaptable to the environment.

## Chapter III

### METHODOLOGY

This chapter contains Project Design, Project Methodology and its phases, System Operation and Testing Procedures as well as the Evaluation Procedure.

#### **Project Design**

The “Development of Dynamic Website for Tagaytay City” was designed to have a fast and easy manageable website that provides user-friendly and easy update of real time information. It was developed with the use of CMS WordPress that help the proponents to achieve its goal because it provides a flexible, easy to use and it is 100% customizable. The proponents used Data Flow Diagram to show the whole process including the individual process of every user within the website. The diagram helps the user to easily understand the process of the system.

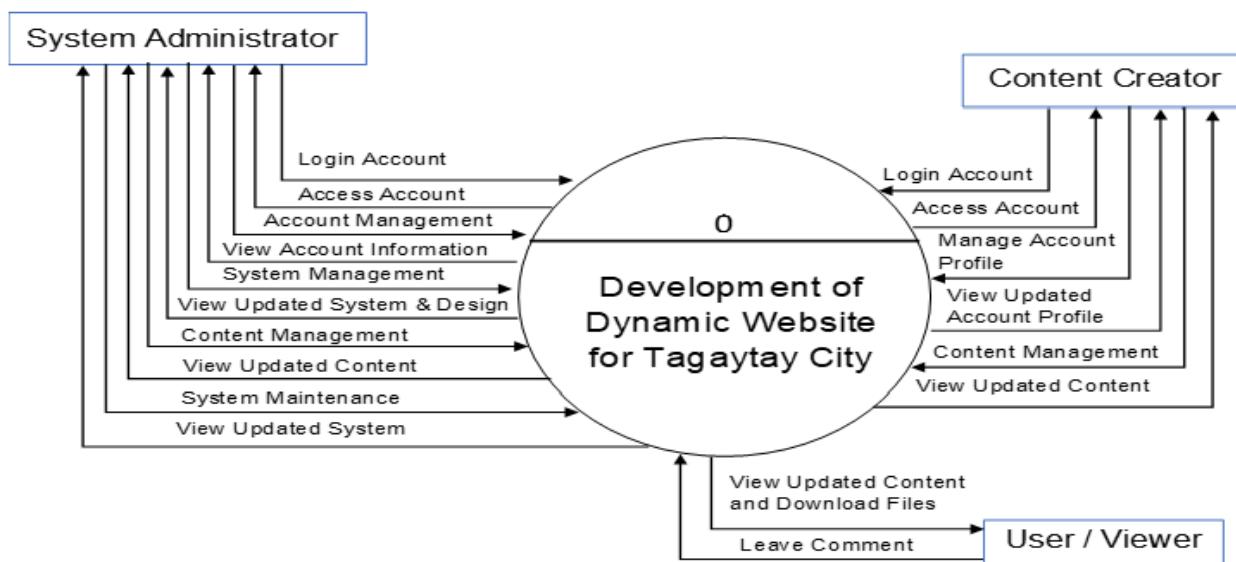


Figure 4. Context Diagram of the Development of Dynamic Website for Tagaytay City

Figure 4 demonstrates the whole process of the “Development of Dynamic Website for Tagaytay City” from the system administrator, content creator up to the user/viewer; this shows the limited access they have on the system. It shows what the System Administrator can do everything from managing of accounts, system management, managing and viewing of contents and maintaining the system. This also shows that the content creator can manage the profile account by only changing the photo, e-mail address, nickname and password and can manage the content of the website while the user/viewer can only view, download files and leave a comment on a post in the updated content and cannot change anything.

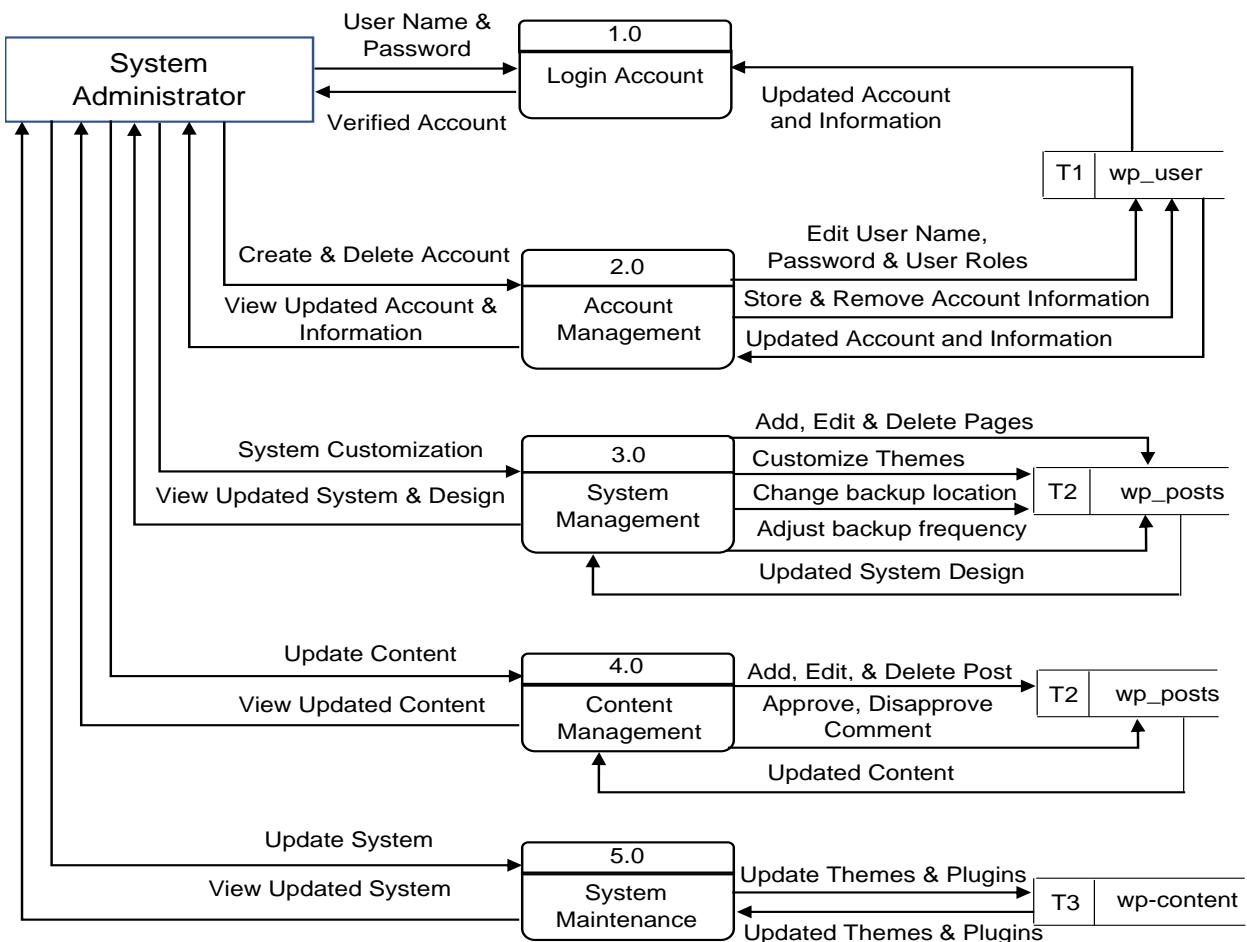


Figure 5. Data Flow Diagram of the System Administrator Entity

Figure 5 shows the flow of system when the System Administrator logs into the system. The system will verify if the account is logged in by a System Administrator. It shows that the System Administrator can update the account information, edit usernames, password, user roles and can store and remove account information. The System Administrator can also manage the website's UI, customize the theme, add, edit and delete pages, change backup location, adjust backup frequency and update system design. They can also update what to see in the website and its content and update the system themes and plugins. Every change from addition to removal of any part of the system will be stored, removed and updated in the database.

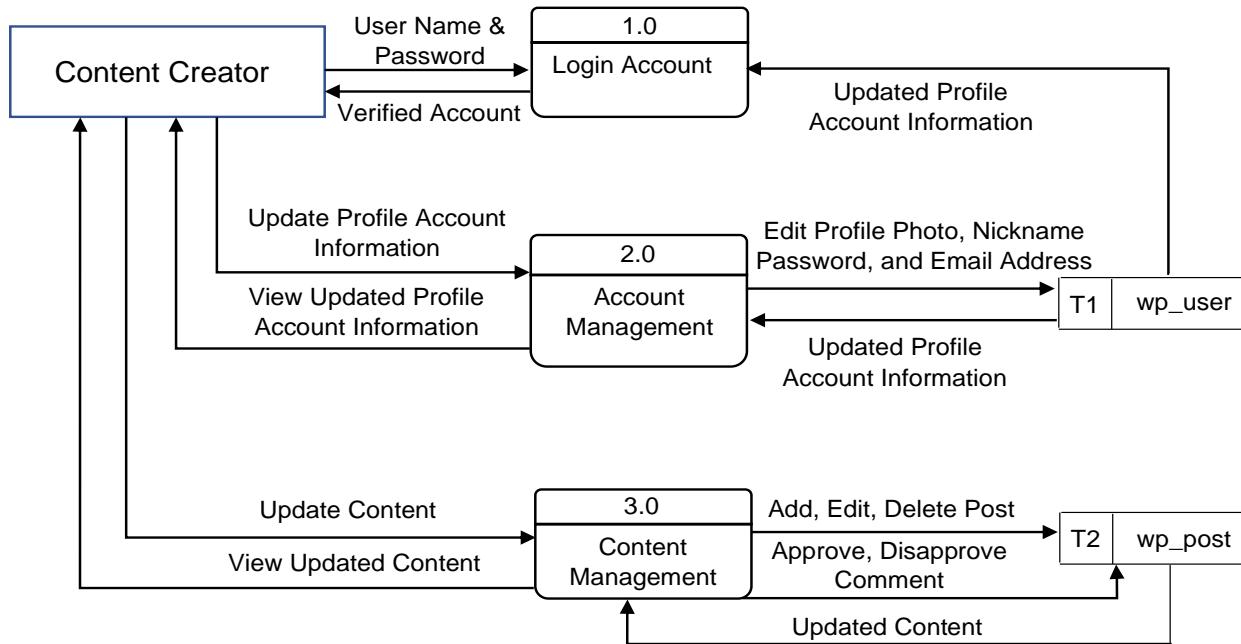


Figure 6. Data Flow Diagram of Content Creator Entity

Figure 6 shows the flow of the system when you logged in as the Content Creator. First, the system will verify the account if it's belonged to a Content Creator. When verified, the Content Creator can now edit profile account information such as edit profile

photo, nickname, password and e-mail address and update the website's content. They can add, edit, delete/retrieve post from the website and approve/disapprove comment from the user/viewer. Any changes in the website's content are stored and will be stored in the database.

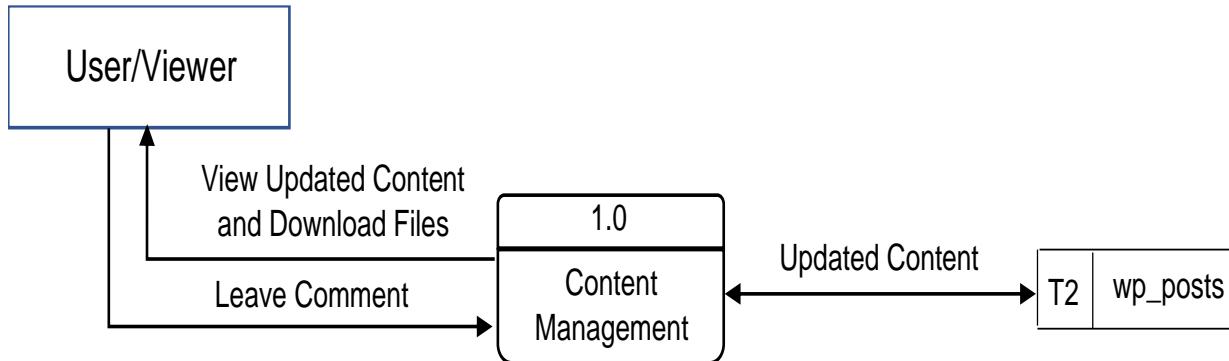
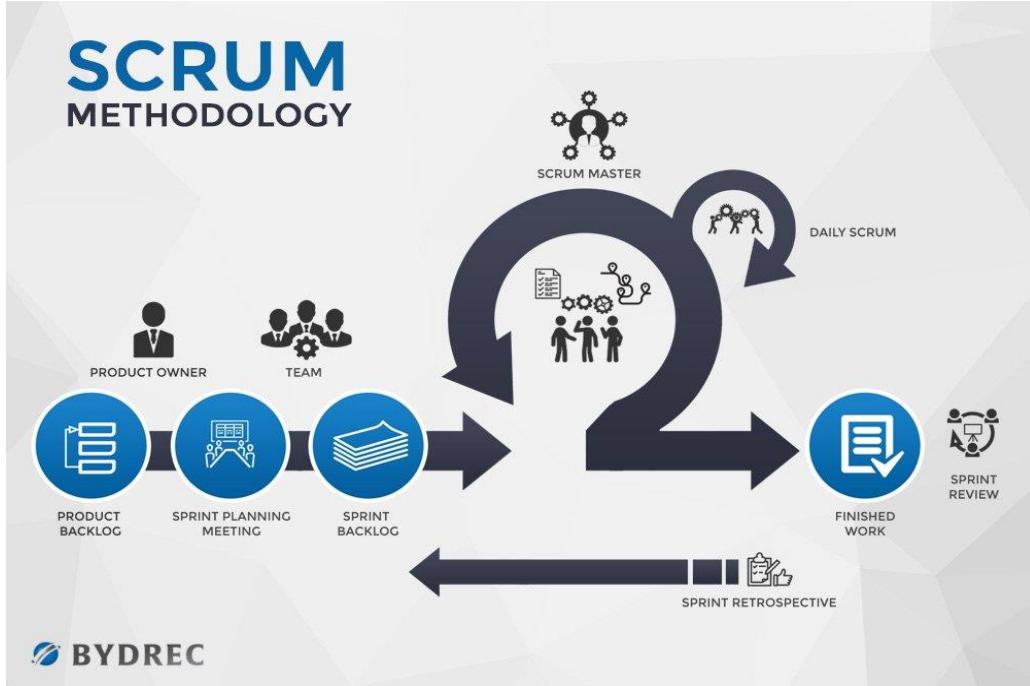


Figure 7. Data Flow Diagram of User/ Viewer Entity

Figure 7 shows the flow of the system when you are a user/viewer. Any updated content from the database made by the content creator and system administrator can be viewed by the user/viewer. They can only see the website's façade but they cannot change or delete any content posted. They can only view updated contents, download files from the downloads menu and can leave a comment in a post of the system administrator and content creator.

## Project Methodology

The proponents used Scrum Methodology as guide in the development of the dynamic website. The proponents chose this methodology because it is a lightweight framework that help people, team and organization generate value through adaptive solutions for complex problems. The proponents performed every phase based on the scrum lifecycle model to ensure that the proponents achieve the goal of the study.



**Figure 8. Scrum Methodology**

Source: A Comprehensive Comparison between the Agile, Scrum and Waterfall Methodology (<https://bit.ly/3zyXnew>)

## Product Backlog

In this phase, the proponents conducted a meeting with the client or the intended user to collect all the necessary requirements, functions and features of the system that will be developed.

## Sprint Planning Meeting

In this phase, All the necessary requirements collected from the client were listed and reviewed by the proponents to determine what will be the priorities to go on the first sprint or sprint backlog. This helps the proponents to fully understand the work ahead in every sprint and manage the product backlog better.

## Sprint Backlog

List of works and features that are obtained from the Sprint Planning Meeting. These are the requirements that must be built in each Sprint.

## **Sprint Review**

After doing the first sprint in 2 to 4 weeks time, the proponents assemble a meeting with the client for a sprint review, this is done to review the first sprint and determine whether the project needs changes.

## **Sprint Retrospective**

After the sprint review the proponents discussed the sprint retrospective to answer key questions like What did the proponents do well, that if not discuss it might forget, what will be the learnings, what to do differently next time, and what is still lacking these questions are needed to be answered by the proponents for the preparation for the next sprint. After passing the sprint retrospective the process starts again on the sprint planning phase until the team achieve its goal. The proponents also performed series of testing procedures to identify any potential bugs or issues that the system may encounter and provided an evaluation according to the standard of ISO9126 to help improve the system.

## **System Operation and Testing Procedure**

The “Development of Dynamic Website for Tagaytay City” was operated by the different level of access such as System Administrator, Content Creator and the User/viewer.

System Administrator will have an account and must log in first to access and view the dashboard panel of a system where all of the features and function of the website are there such as adding pages, editing pages, deleting pages, adding post, editing post, deleting/retrieving post, customizing theme, updating themes, deleting themes, installing

plug ins, updating plug ins, adding user, editing user roles, sending password reset for users, adjusting backup frequency, changing backup locations. System Administrator can create and delete accounts to give access to different content creator.

Content Creator will be asked to login the username and password created by the system administrator and can only edit the profile account information and update the content by adding, edit and delete/retrieve post as their authorization is restricted to that purpose only.

User/Viewer could view the updated content of the website and cannot change anything. They can download files from the downloads menu and leave a comment/reply to the post of system administrator and content creator.

## **Testing Procedure**

In order to test the website the proponents checked the website through unit testing, performance testing, acceptance testing and integration testing.

In unit testing, the system or the websites smallest testable parts or units were individually checked for proper operation.

Integration testing validates interaction of every modules of the website. If all the modules function according to how it was defined.

Performance testing was performed by checking the website according to its behavior when data loads to it. How fast it will respond in accepting loads of data. Different browsers and mobile devices were used in order to check performance of the website.

Acceptance testing, the website was checked if it meets the requirements specification. If the website complied to the required criteria for delivery to intended users.

### **Evaluation Procedure**

For the preliminary evaluation, the proponents reviewed all the necessary things that will need in the completion of the website and apply it to help improve the website.

Results was analyzed to determine if the desire output was met through the given input. For the final evaluation, questionnaire sheet/evaluation form was given to respondents based on the standard of the ISO9126. The comments, suggestions and recommendation would be a great help and will be use to improve and enhance the system. The study used the Evaluation Criteria for software.

The Sample Size Calculator by Raosoft, Inc. was used to calculate the sample size of the student and sample size of the faculty members/IT professional that served as the respondents in the evaluation process.

Table 1 shows the numeric rating and its equivalent interpretation to scale the results of project evaluation.

Table 1. System Evaluation Sheet Numerical and Descriptive Scale

<b>NUMERICAL RATING</b>	<b>INTERPRETATION</b>	<b>DEFINITION</b>
4.21 - 5.00	Excellent	The system fully meets and far exceeds the most expectations.
3.41 - 4.20	Very Good	The system fully meets all and exceeds several expectations.
2.61 - 3.40	Good	The system fully meets all expectations.
1.81 - 2.60	Fair	The system does not fully meet all expectations.
1.00 - 1.80	Poor	The system fails to meet expectation to a significant degree in several areas

## **Chapter IV**

## **RESULTS AND DISCUSSION**

This chapter presents the Project Description, Project Structure, and Screen Hierarchy of the system.

### **Project Description**

The project entitled “Dynamic Website for Tagaytay City” is a website that provides an easy update and manageable content even without having a knowledge in programming because of the CMS platform that have been used in creating the website. The purpose of the developed study is to help the city to give updates to the residents with a real time information and give the assigned system administrator and content creator a fast and lighter work.

The proponents used the Scrum Methodology, a method that provides an iteration in the development of the system. Product Backlog, Sprint Planning, Sprint Review, and Sprint Retrospective are the parts of Scrum Methodology.

In the Product Backlog, the proponents made a project plan with completion time schedule and discussed it to the client. The proponents and client exchanged ideas about the functions and features of the system and collected all the requirements from the client such as the design of the website and all the information about Tagaytay City to be the content of the system. The proponents also conducted a research to add some information that will help and use in the development of Dynamic website for Tagaytay City.

In Sprint Planning Meeting, the proponents analyzed all the gathered information from the product backlog and planned what to prioritize in the first sprint or in sprint backlog. In this stage the proponents discussed the design, layout, interface and content of the website and concluded CMS WordPress will be the application to use in constructing the system because of the easy customization it offers.

In Sprint Review, the project that has been worked out in every sprint including designing, coding, content and all the client's request were presented and reviewed by the client and the proponents, if the system functions according to what was planned. In this process the proponents got feedback from the client that leads to a new product backlog for the new adjustments.

In Sprint Retrospective, the proponents conducted a meeting to identify the potential problem and resolve immediately. It helped the proponents to inspect and create a plan on what can be improve in the system during the next sprint. Different testing was also performed if the system response according on what should it be. The proponents also conducted a survey to evaluate the system if it conforms with the standards of ISO 9126 and obtained the mean average of 4.15 which interpreted as "Very Good". This shows that the system fully meets all and exceeds several expectations. After conducting the Sprint Retrospective, the proponents started the process again on the sprint planning phase until the goal is achieved.

## **Project Structure**

The developed study has registered a domain name and purchased a web hosting plan for the website to be available online. All the data of the website are stored on the

server provided by web hosting service provider. For the implementation of the website, the client or the intended user of the system would need to make a WordPress website on their webhost site and from there the proponents will make a copy or back up of the system including its design, layout and content and will use a plugin to migrate the copy of the system to the clients WordPress website using the same plugin.

The system has three users namely: the System Administrator, Content Creator, and the User/Viewer. The system administrator has the largest part in managing the website particularly in the maintenance and update of the website. The system administrator has the ability to change the website's UI and function, and can create/remove account and give access to different content creator of the website. On the other hand, the content creator's job is to manage the content by editing, adding and deleting/retrieving post as it was the only authorized to them within the website. And the User/Viewer can view what was posted on the website, download files and have the ability to leave comment/reply to the post of system administrator and content creator but doesn't have the ability to change anything on the website.

## Screen Hierarchy

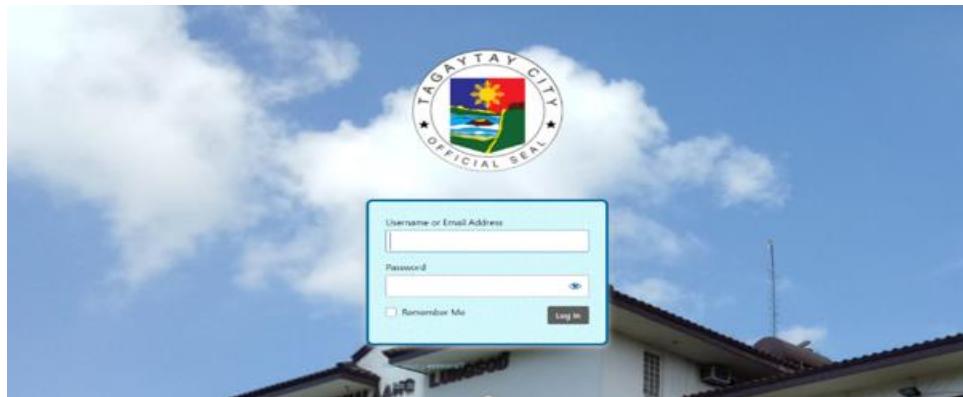


Figure 9. Login Form

Figure 9 shows the login interface for the Content Creators and the System Administrator. The text fields are where the credentials (username or email address or password) will be inputted. The ‘Log in’ button will validate if the inputted credentials are correct. Checking the checkbox labeled as ‘Remember Me’ before clicking the ‘Log in’ button will save the username or email address and password of the user logging in and will save it for next login attempt. The ‘Go to’ button will direct the user to the website.

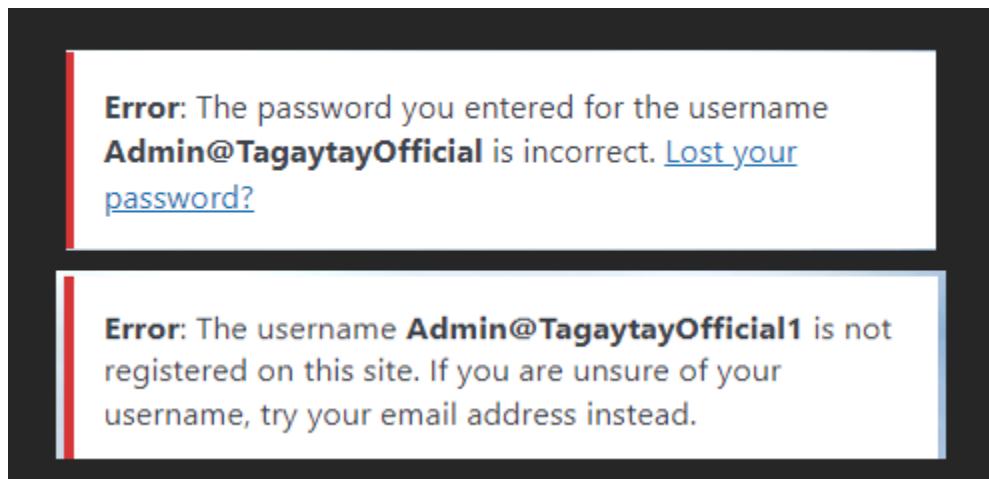


Figure 10. Wrong Input of Username or Password

The ‘Lost your password’ button will help the user in changing password without needing to change it directly to the system. Error messages will pop-up if the inputted credential is wrong as shown in Figure 10.



Figure 11. 'Lost Your Password'

Figure 11 shows the interface when the 'Lost your password?' button is clicked. It includes a text field for the user to input the email associated to the Content Creator or System Administrator's account.

**Error:** There is no account with that username or email address.

Figure 12. 'No email associated'

The 'Get New Password' button would validate if the email inputted is connected to any accounts. If it is connected to any account, then an email will be sent to the email inputted and if not, then an error pop-up message will appear as shown in Figure 12.

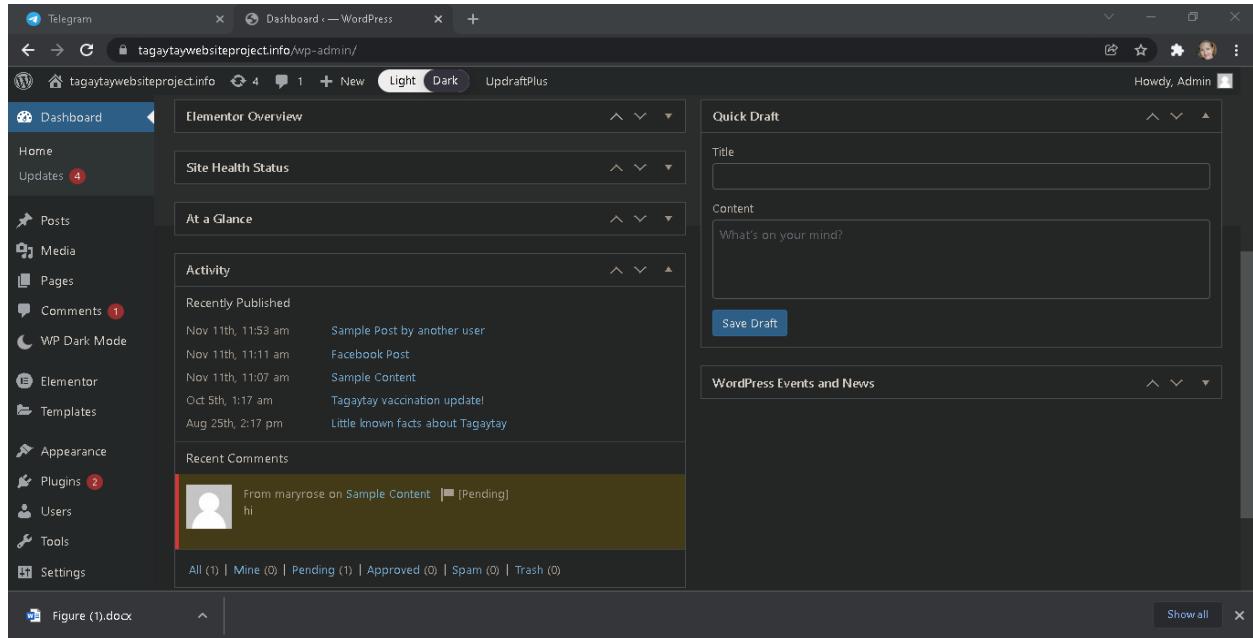


Figure 13. System Administrator's Dashboard

Figure 13 shows the System Administrator's Dashboard that contains At a Glance, Elementor Overview, Site's Health Status, Activity, Quick Draft and WordPress Events and News.

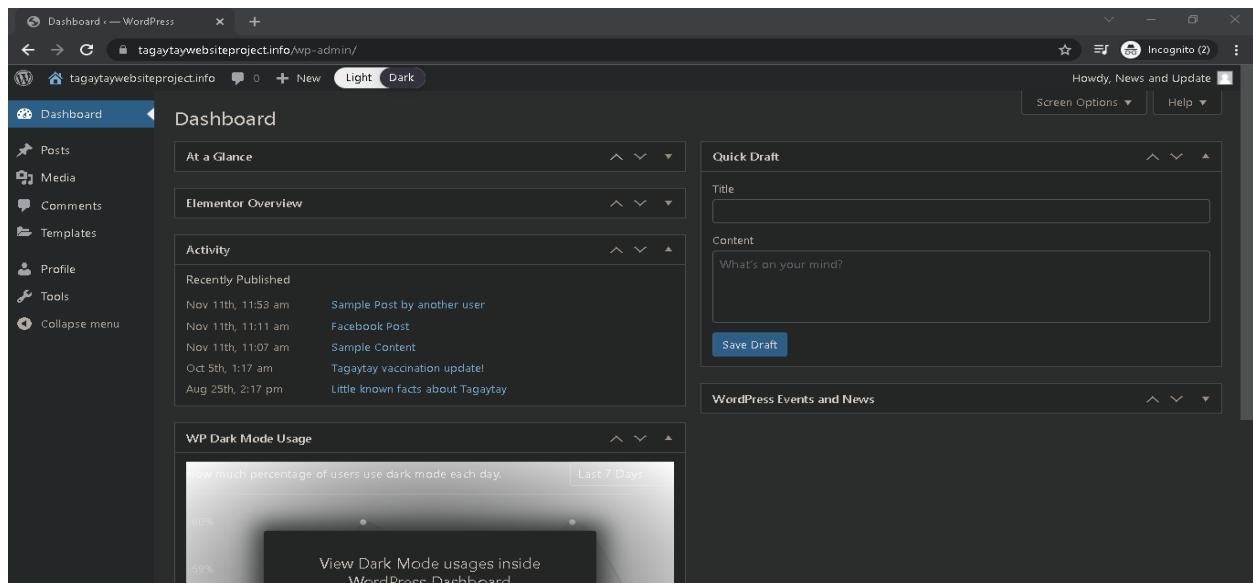


Figure 14. Content Creator's Dashboard

Figure 14 shows the Content Creator's Dashboard. Same as the System Administrator's but the only difference is it doesn't provide a display of the site's health status.

The screenshot shows the WordPress admin interface for a Content Creator. The left sidebar has a 'Posts' section selected. The main area displays a table of posts with columns for Title, Author, Categories, Tags, and Date. There are 7 items listed. The posts include titles like 'ASdasda — Draft', 'Sample Post by another user', 'Facebook Post', 'Sample Content', 'Tagaytay vaccination update!', 'Little known facts about Tagaytay', and 'Byahé ni Drew: What to do in Tagaytay'. The interface includes standard WordPress admin tools like Bulk actions and Apply buttons at the bottom.

Title	Author	Categories	Tags	Date
ASdasda — Draft	News and Update	Uncategorized	—	Last Modified 2021/12/06 at 11:25 am
Sample Post by another user	News and Update	Uncategorized	—	Published 2021/11/11 at 11:53 am
Facebook Post	Admin	Uncategorized	—	Published 2021/11/11 at 11:11 am
Sample Content	Admin	Uncategorized	—	Published 2021/11/11 at 11:07 am
Tagaytay vaccination update!	News and Update	Uncategorized	—	Published 2021/10/05 at 1:17 am
Little known facts about Tagaytay	Admin	Uncategorized	—	Published 2021/09/25 at 2:17 pm
Byahé ni Drew: What to do in Tagaytay	Admin	Uncategorized	—	Published 2021/09/22 at 8:32 pm
<b>Title</b>	<b>Author</b>	<b>Categories</b>	<b>Tags</b>	<b>Date</b>

Figure 15. System Administrator's Posts

Figure 15 provides an overview of the System Administrator's Posts section and all the posts published on the website. Posts section is where the System Administrator and Content Creator can add, edit, delete, and preview posts.

The screenshot shows the WordPress admin interface for a System Administrator. The left sidebar has a 'Posts' section selected. The main area displays a table of posts with columns for Title, Author, Categories, Tags, and Date. There are 3 items listed. The posts include titles like 'ASdasda — Draft', 'Sample Post by another user', and 'Tagaytay vaccination update!'. The interface includes standard WordPress admin tools like Bulk actions and Apply buttons at the bottom.

Title	Author	Categories	Tags	Date
ASdasda — Draft	News and Update	Uncategorized	—	Last Modified 2021/12/06 at 11:25 am
Sample Post by another user	News and Update	Uncategorized	—	Published 2021/11/11 at 11:53 am
Tagaytay vaccination update!	News and Update	Uncategorized	—	Published 2021/10/05 at 1:17 am
<b>Title</b>	<b>Author</b>	<b>Categories</b>	<b>Tags</b>	<b>Date</b>

Figure 16. Content Creator's Posts

Figure 16 shows the Content Creator's Posts section which is the same as the System Administrator's except the only posts showed are those posted by the Content Creators and not those posted by the System Administrator. A search bar and a filter are also included to quickly search posts.

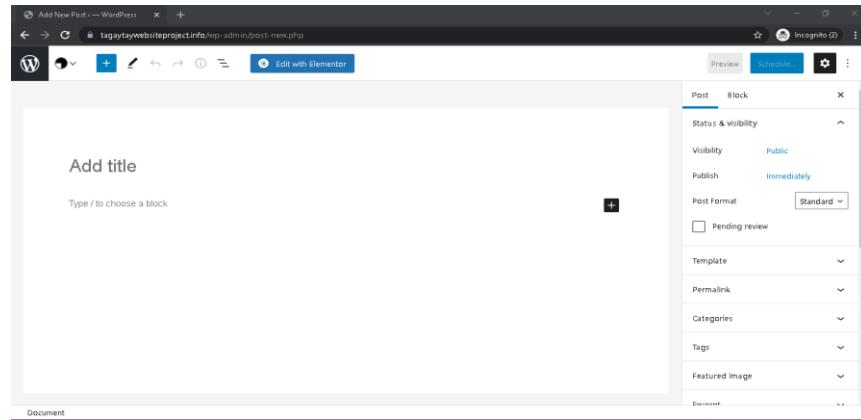


Figure 17. Add New Post using WordPress

Figure 17 displays one of the two ways of adding new post. These are used to popularize the website.

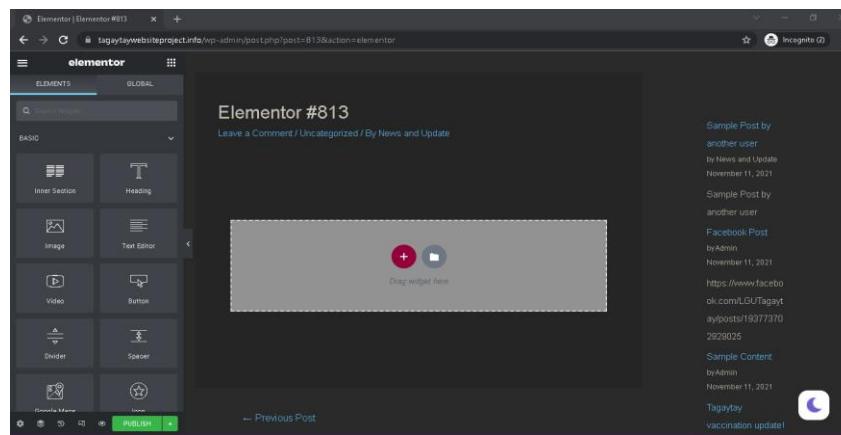


Figure 18. Add New Post using Elementor

Another way of adding new post is by the use of Elementor, as shown in Figure 18.

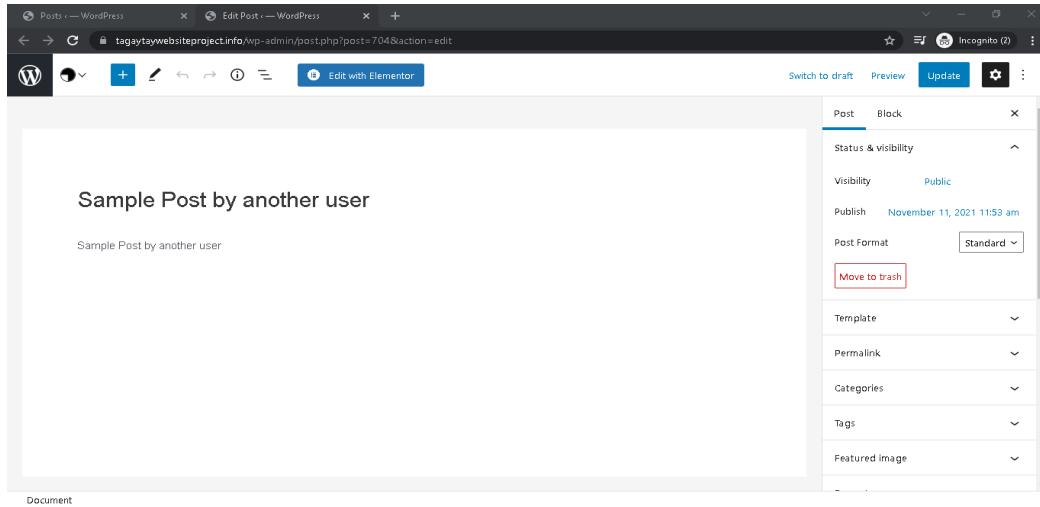


Figure 19. Edit Post using WordPress

Figure 19 shows the interface when the post is being edited in WordPress.

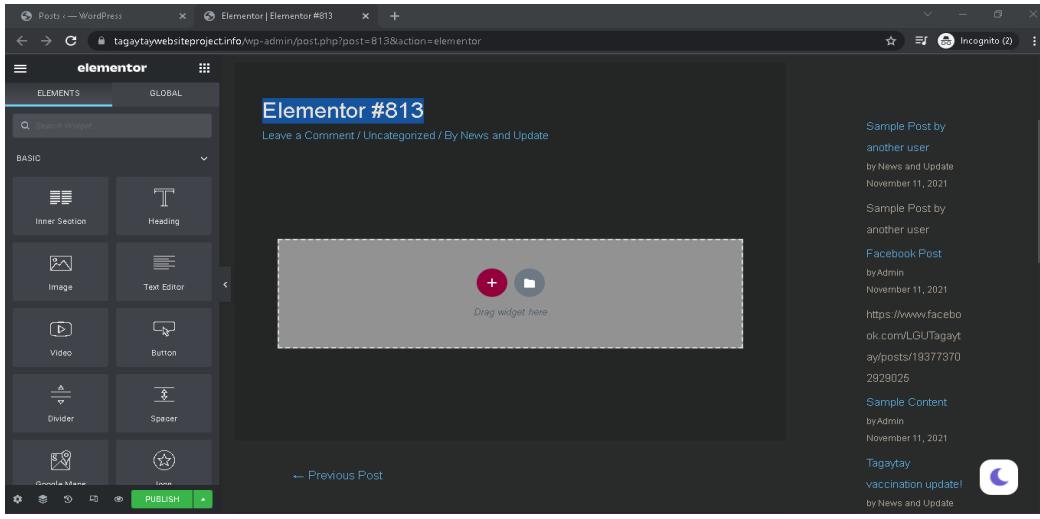


Figure 20. Edit Post using Elementor

Figure 20 displays the screen when the post is being edited in Elementor. If the post is created using Elementor, then the ‘Edit with Elementor’ feature is added in the options.

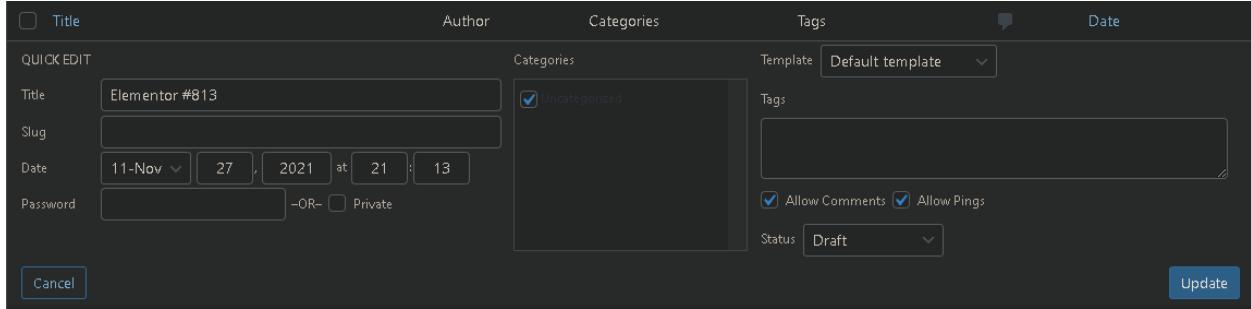


Figure 21. Quick Edit

Hover the cursor to the post to access Quick Edit. Edit the basic information of the post using Quick Edit as shown in Figure 21.



Figure 22. Delete Posts

Figure 22 shows the way to delete your post. After clicking ‘Trash’, the deleted post will be added in the Trash section.

The screenshot shows the WordPress admin dashboard with the 'Posts' screen selected. The title bar indicates the URL is `tagaytaywebsiteproject.info/wp-admin/edit.php?post_status=trash&post_type=post`. The main content area is titled 'Posts' and shows a list of 3 items in the 'Trash' category. The columns in the list are 'Title', 'Author', 'Categories', 'Tags', and 'Date'. The first item is 'Elementor #813' by 'News and Update' in 'Uncategorized' category, last modified on 2021/11/27 at 10:06 pm. The second item is 'This post is for testing purpose' by 'News and Update' in 'Uncategorized' category, last modified on 2021/11/05 at 8:02 am. The third item is 'This post is for Testing Purpose' by 'Admin' in 'Uncategorized' category, last modified on 2021/11/05 at 7:52 am. At the bottom of the list, there are 'Bulk actions' and 'Apply' buttons.

Figure 23. Trash

Figure 23 shows the destination of all deleted post. This also shows when it was deleted and who deleted the post.

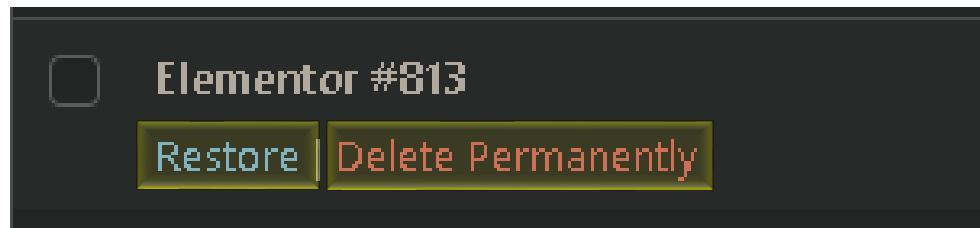


Figure 24. Restore & Delete Permanently

When the cursor hovers on the deleted post, then two more options, the Restore and Delete Permanently, will be displayed as shown in Figure 24. Deleted post can be restore or deleted permanently.

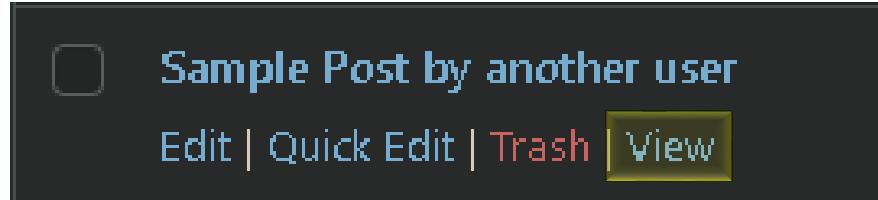


Figure 25. Preview

Figure 25 shows the button to click to preview the post published. The System Administrator and Content Creator can edit, quick edit and move to trash the publish post.

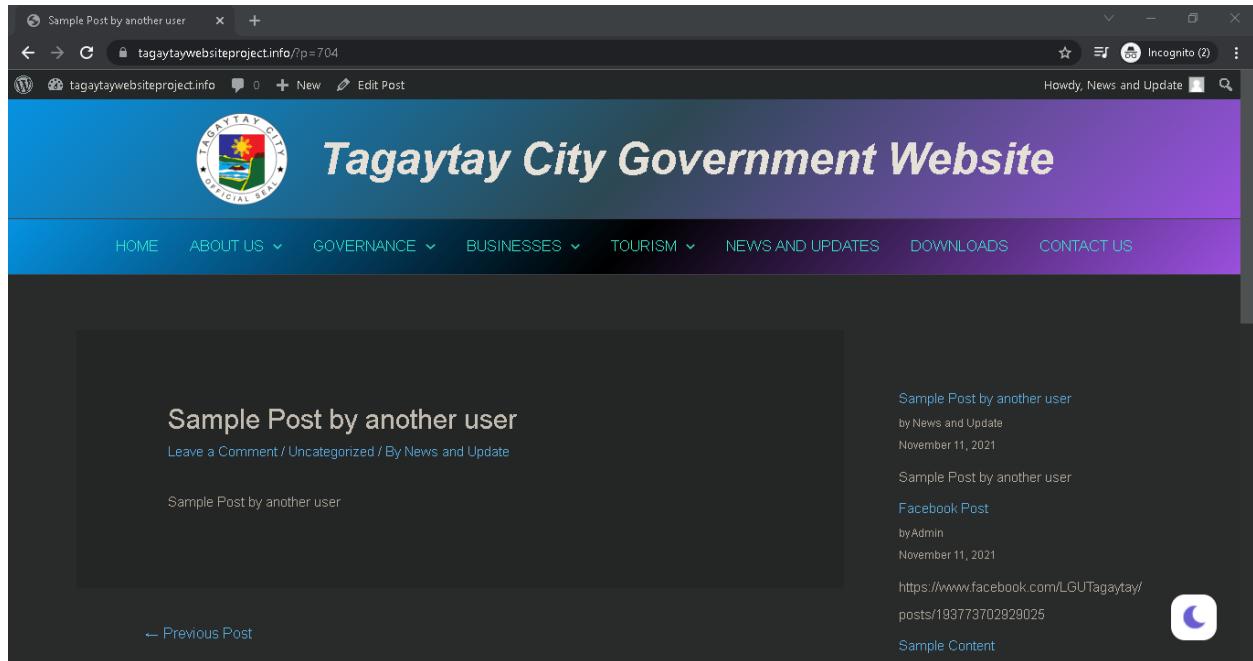


Figure 26. Preview Post

Figure 26 shows what will appear on screen if the view button is clicked. The system administrator and content creator can go back to the previous post.

The screenshot shows the WordPress 'Categories' screen. On the left, there's a sidebar with various menu items like Posts, Media, Pages, and Appearance. The main area has a title 'Categories' and a sub-section 'Add New Category'. It includes fields for 'Name' (containing 'The name is how it appears on your site.'), 'Slug' (containing 'The "Slug" is the URL-friendly version of the name. It is usually all lowercase and contains only letters, numbers, and hyphens.'), and 'Parent Category' (set to 'None'). Below these are sections for 'Description' (with a note about its visibility) and 'Bulk actions' (with an 'Apply' button). To the right, a table lists existing categories: 'Uncategorized' (Count: 6). At the bottom, there's a note about deleting categories and a link to a converter.

Name	Description	Slug	Count
Uncategorized	—	uncategorized	6

Figure 27. Categories

Figure 27 shows the Categories which can be used to organize the posts in the website. The System Administrator is the only person authorized to add, edit, and delete categories as well as viewing the saved categories. To add a new category, indicate the name, slug, the description of the category, and choose a parent category. To edit categories, hover the cursor to the category and choose from 'Edit' or 'Quick Edit'. Click 'View' to view the category.

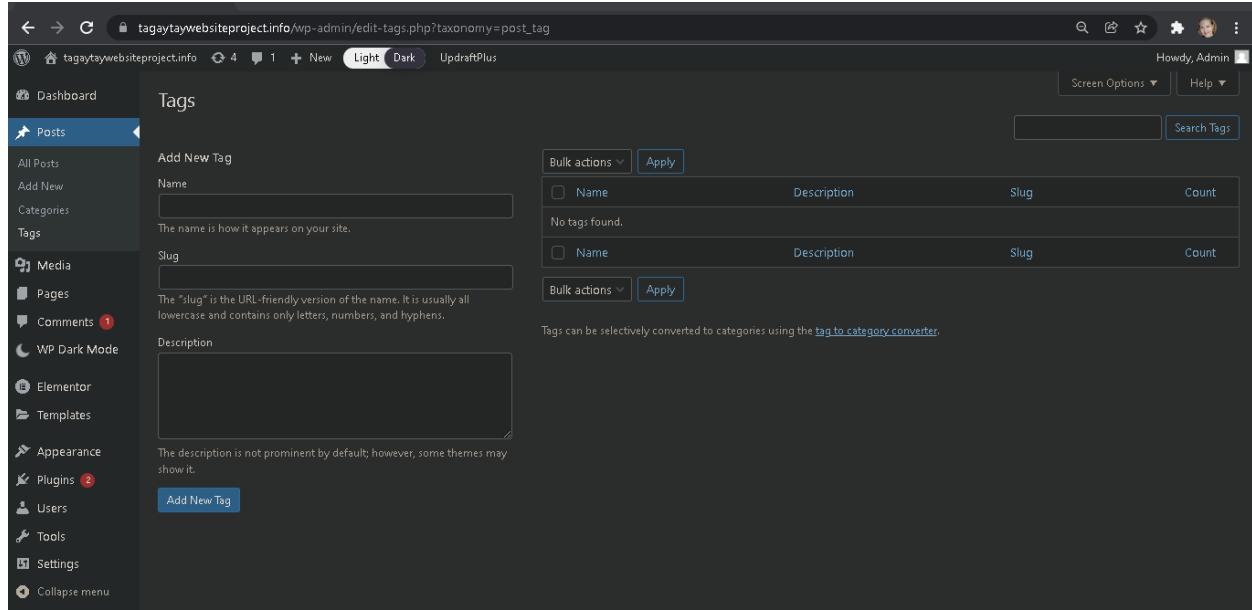


Figure 28. Tags

Figure 28 shows the Tags in the website. Just like the website's categories, tags can be viewed by the System Administrator alone and can't be viewed by others. The System Administrator is the only person authorized to add, edit, delete tags in the website. To add a new Tag, indicate the name, slug and the description of the tag. To edit tags, hover the cursor to the category and choose from 'Edit' or 'Quick Edit'. Click 'View' to view the tags.

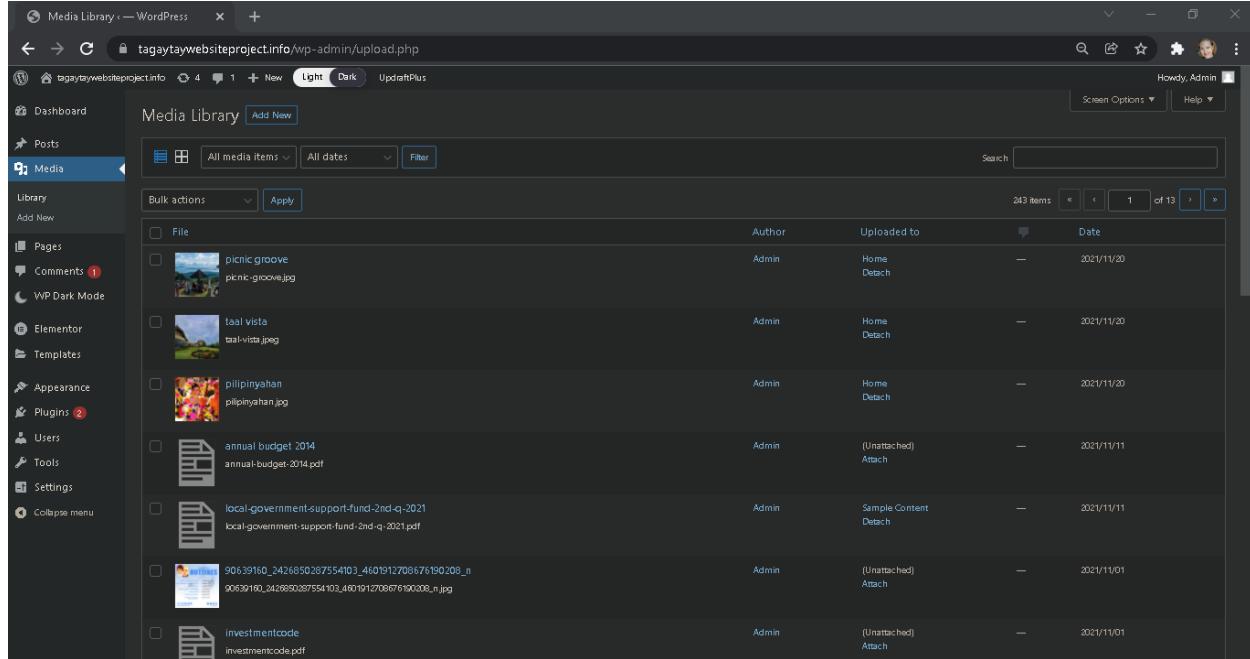


Figure 29. Media Library

Figure 29 shows the Media Library of the website. The Media Library consists of the images, audios, videos and files that can be uploaded and added to the content when writing a Post or Page. The System Administrator and Content Creators can view, add, edit, or delete any media-related objects here if they are no longer required. The only difference is the Content Creators can only edit and delete medias added by other Content Creators.

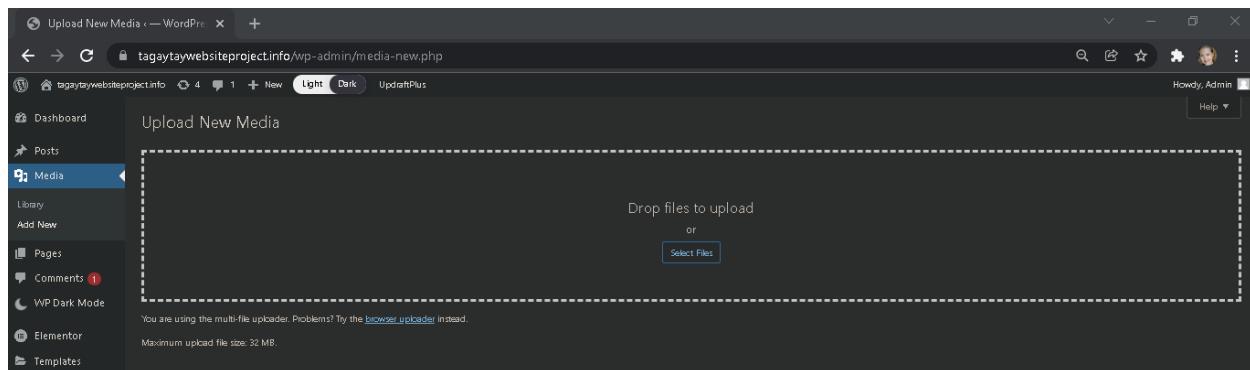


Figure 30. Add New Media

To add new media, click ‘Add New’ and choose the file to be uploaded (see Figure 30). Hover the cursor in the media to view more options like ‘Edit’, ‘Quick Edit’, ‘Delete Permanently’, and ‘View’.

Title	Author	Date
About Us	Admin	Published 2021/08/16 at 4:34 pm
Amusement parks	Admin	Published 2021/08/20 at 3:03 pm
Business Permit and Licensing	Admin	Published 2021/08/16 at 4:45 pm
Businesses	Admin	Published 2021/08/18 at 4:35 pm
Citizens Charter	Admin	Published 2021/08/16 at 4:42 pm
City Google Map — Elementor	Admin	Published 2021/08/16 at 4:40 pm
City Seal	Admin	Published 2021/08/16 at 4:44 pm
Component Barangays	Admin	Published 2021/08/16 at 4:40 pm
Contact Us	Admin	Published 2021/08/16 at 4:36 pm
Directory	Admin	Published 2021/08/16 at 4:42 pm

Figure 31. Pages

Figure 31 shows the list of pages created for the website. Just like the other part of the website, it can only be accessed by the System Administrator. The System Administrator can add, edit, delete and view pages in the website.

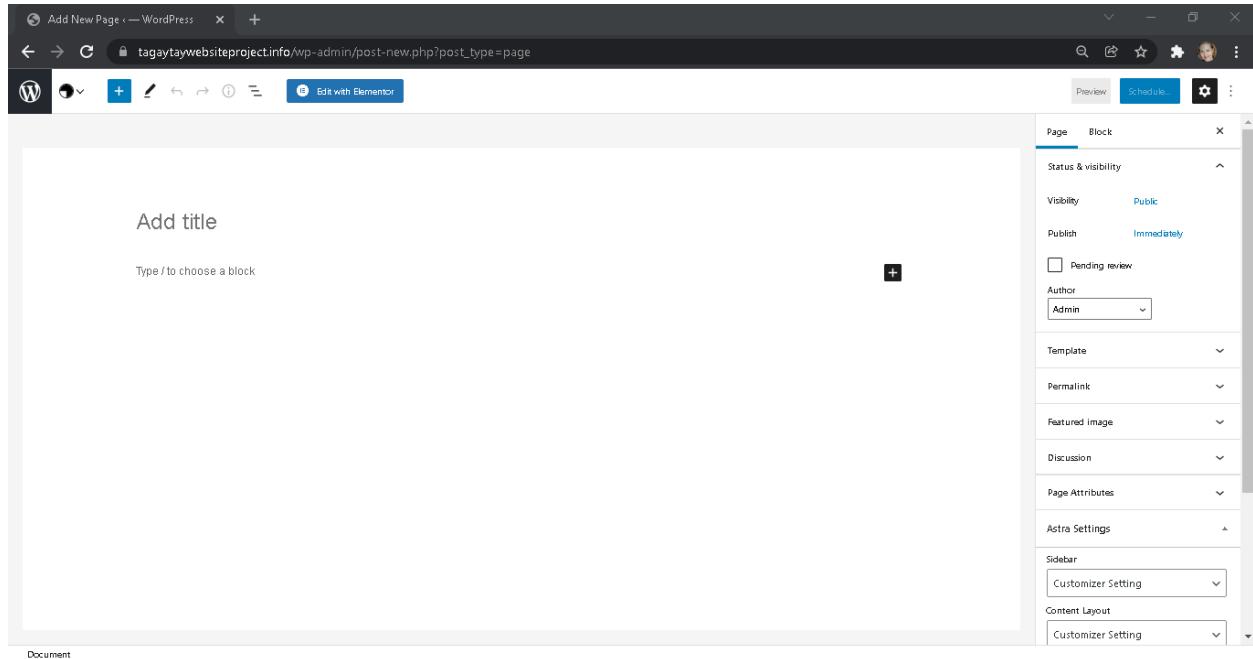


Figure 32. Add New Page

To add a new page, click ‘Add New’ and start creating a page (Figure 32). Hover the cursor in a page to view more options like ‘Edit’, ‘Quick Edit’, ‘Trash’, and ‘View’.

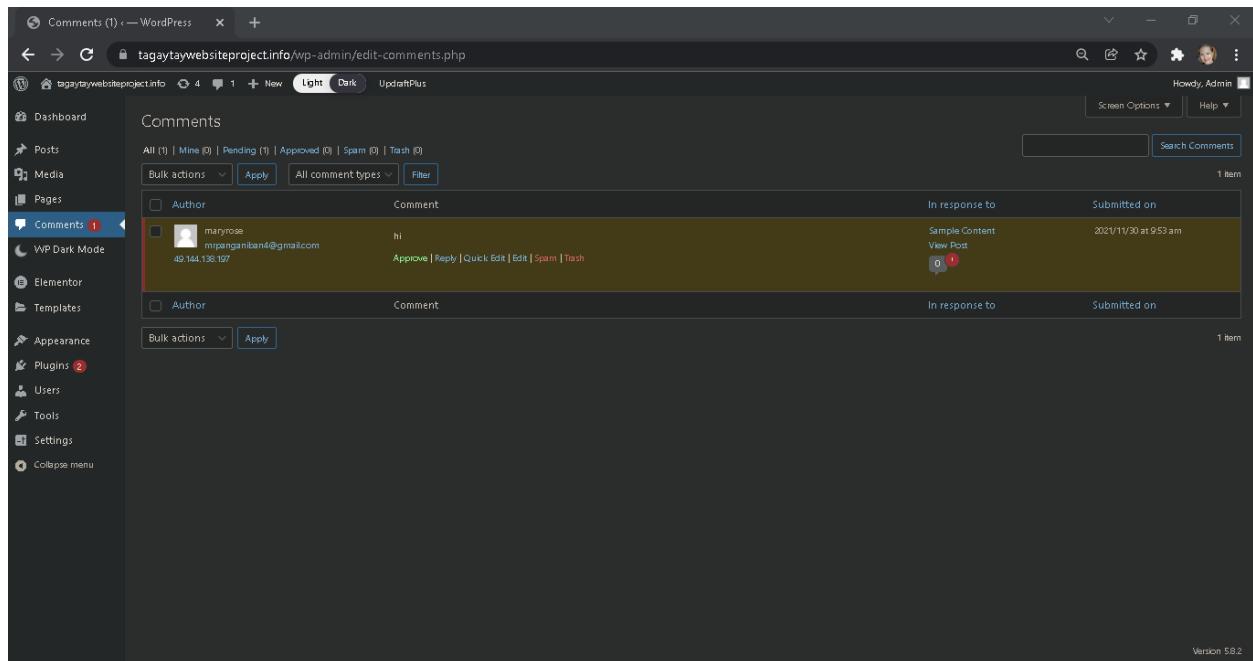


Figure 33. Comments

Figure 33 shows where the comment of a user can be view. System Administrator and Content Creators can approve and delete a comment as well as mark a comment as spam.

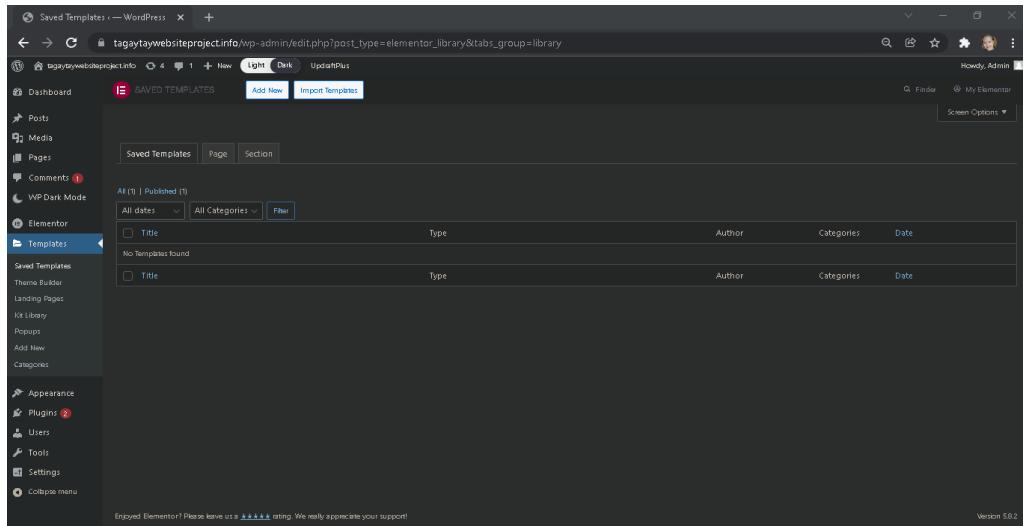


Figure 34. Templates

Figure 34 shows templates of the website. The System Administrator and Content Creators can add, edit, delete templates, import and export templates, as well as view saved templates.

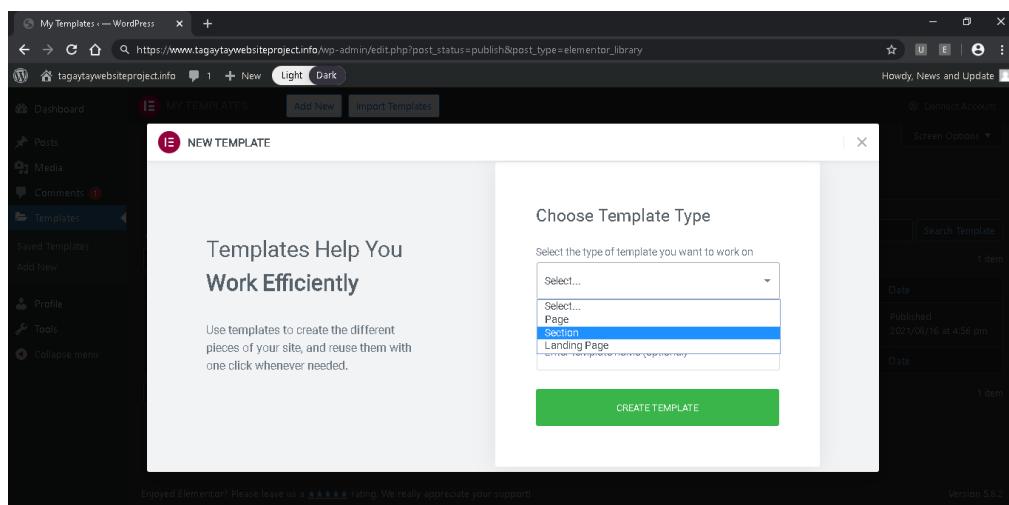


Figure 35. Add New Template

Figure 35 shows the way of adding new template. User can select from three types of templates.

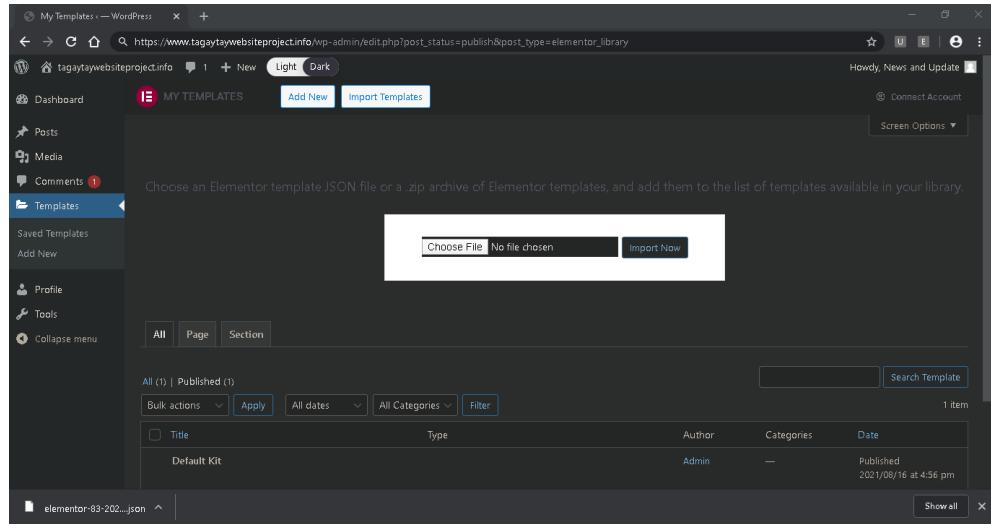


Figure 36. Importing Templates

To import templates, click 'Choose File' and choose the file to be imported and click 'Import Now' (see Figure 36).

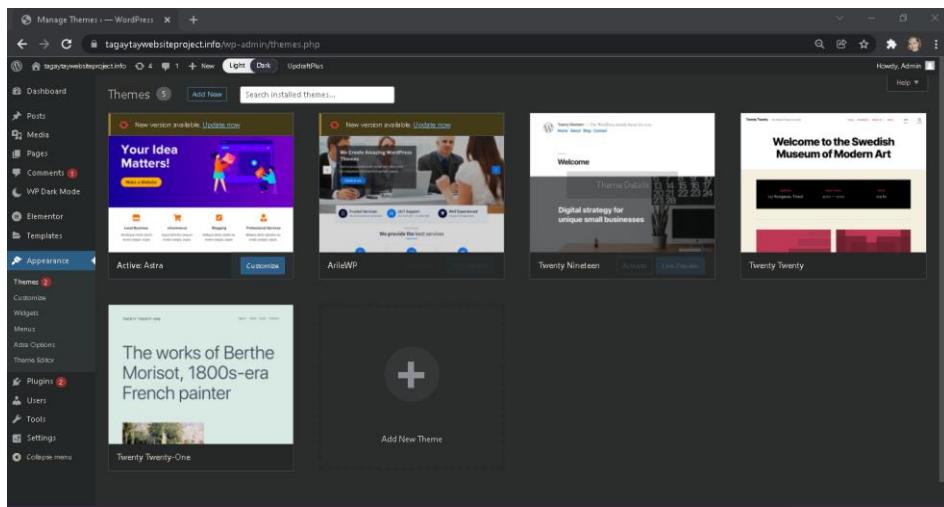


Figure 37. Appearance (Themes)

Figure 37 shows the list of themes added for the website's design. The System Administrator can customize the website, add, edit and delete widgets, edit menus, and edit themes.

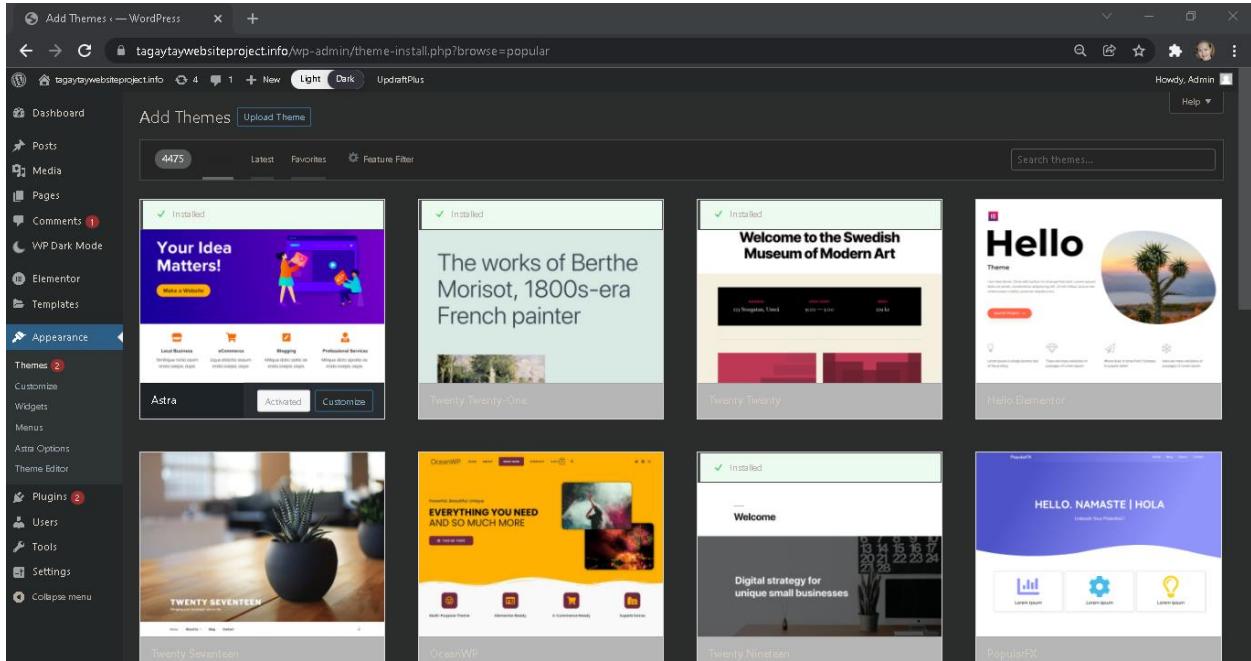


Figure 38. Add New Theme

To add new themes, click 'Add New' or the button with a plus icon next to last theme in the list and choose from more than a hundred of themes available as shown in Figure 38.

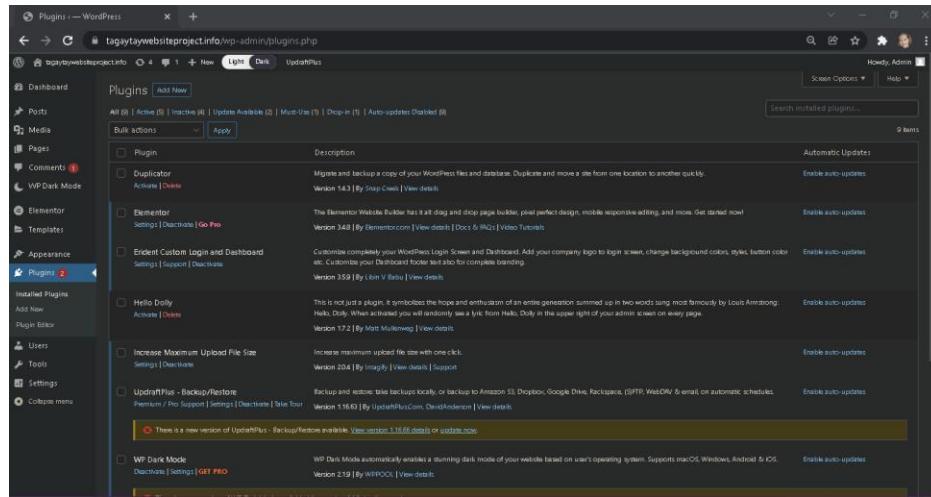


Figure 39. Plugins

Figure 39 shows the list of installed plugins used for the website.

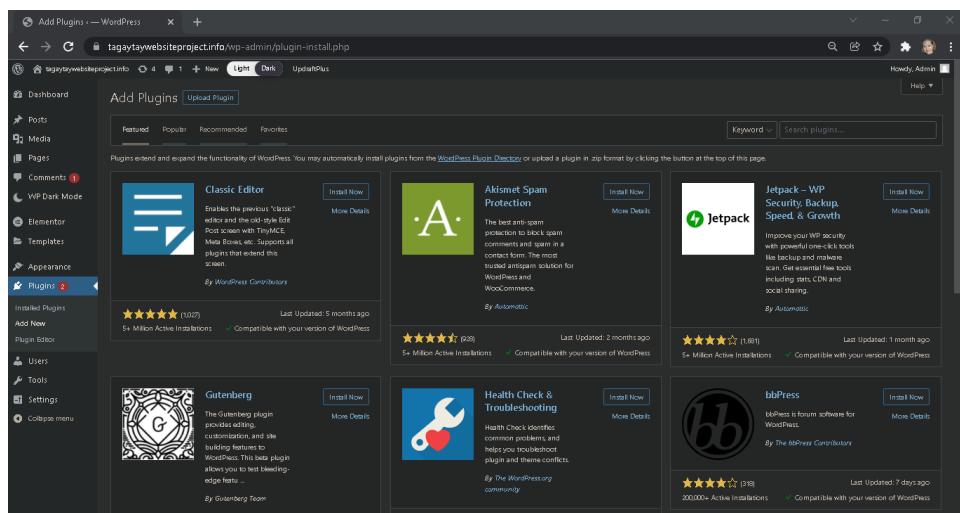


Figure 40. Add New Plugin

To add new plugin, click 'Add New', search the plugin and click 'Install Now' (Figure 40).

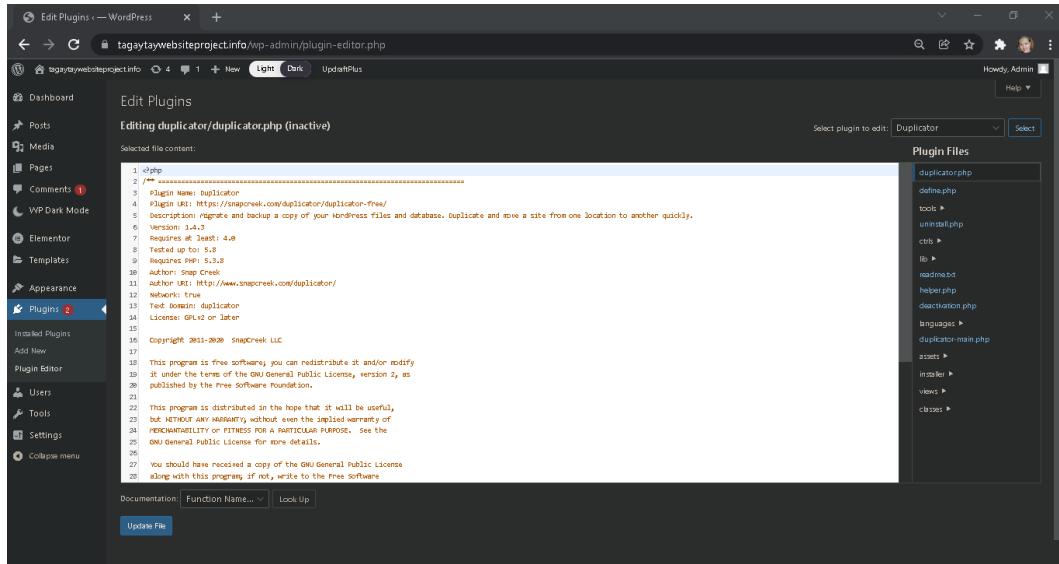


Figure 41. Plugin Editor

To edit, click ‘Plugin Editor’, choose the Plugin to be edited and click the ‘Update File’ button (Figure 41).

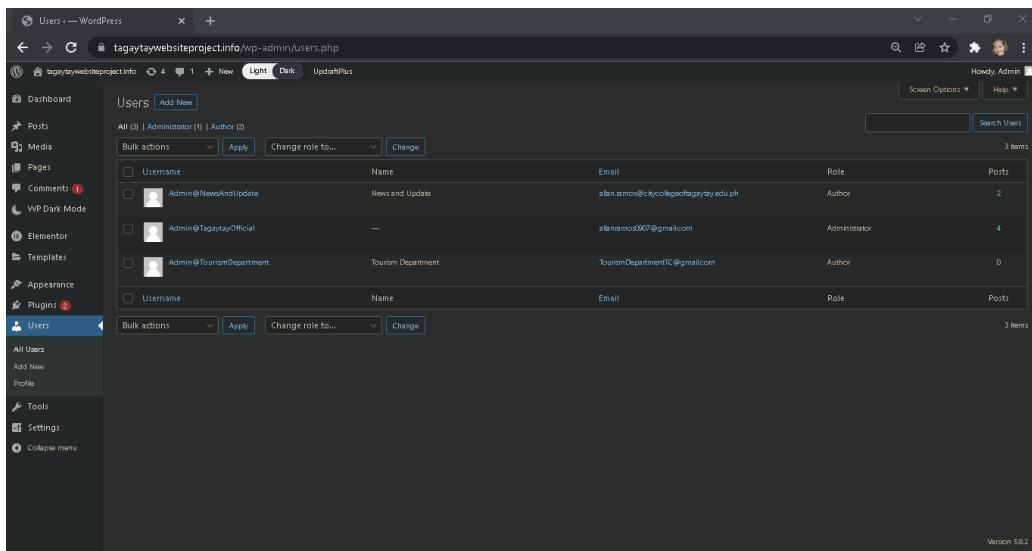


Figure 42. Users

Figure 42 shows the list of authorized users together with their names, number of posts, emails and roles. To edit, view and delete a user, hover the cursor to the user and choose from the options below the username.

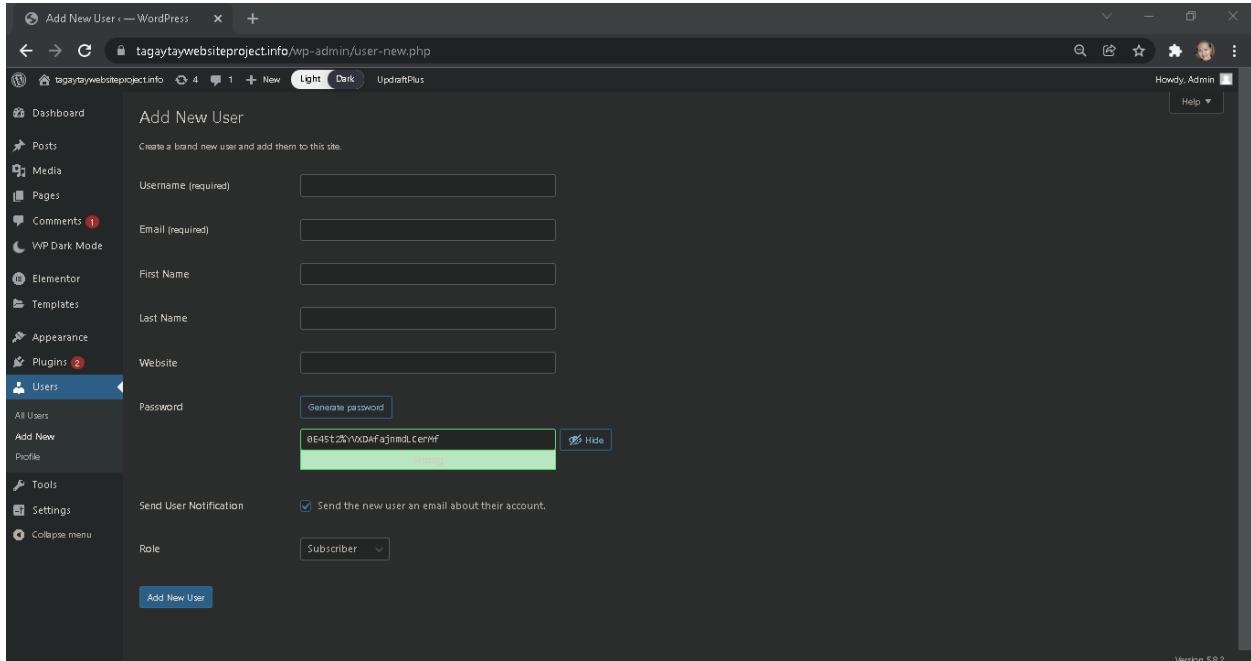


Figure 43. Add New User

To add new user, click 'Add New', fill up the text boxes with the information, choose a role and click 'Add New User' (Figure 43).

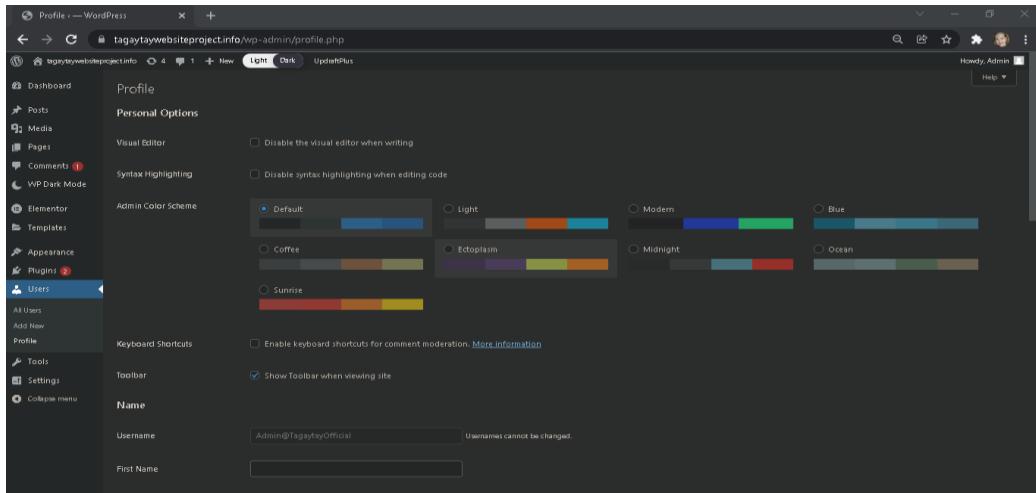


Figure 44. Profile

Figure 44 shows the user's profile. This is the same to the Content Creator's profile. This is where the user can edit the admin color scheme, name, email, biographical info, and profile picture. Checkboxes are also included along with its definition when checked. To save changes, click 'Update Profile' in the bottom part of the page.

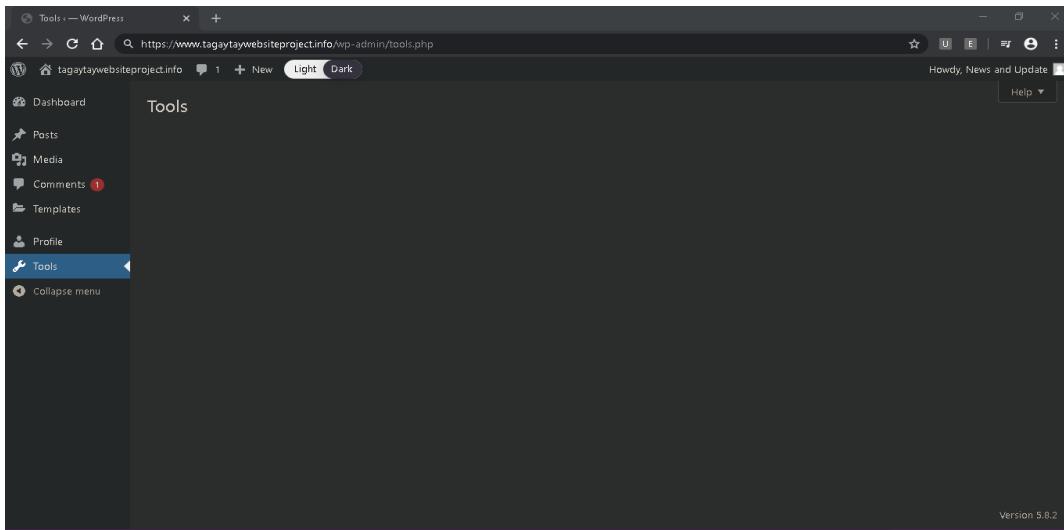


Figure 45. Tools

Figure 45 shows the tools used in the website. The website is currently not using any tools.

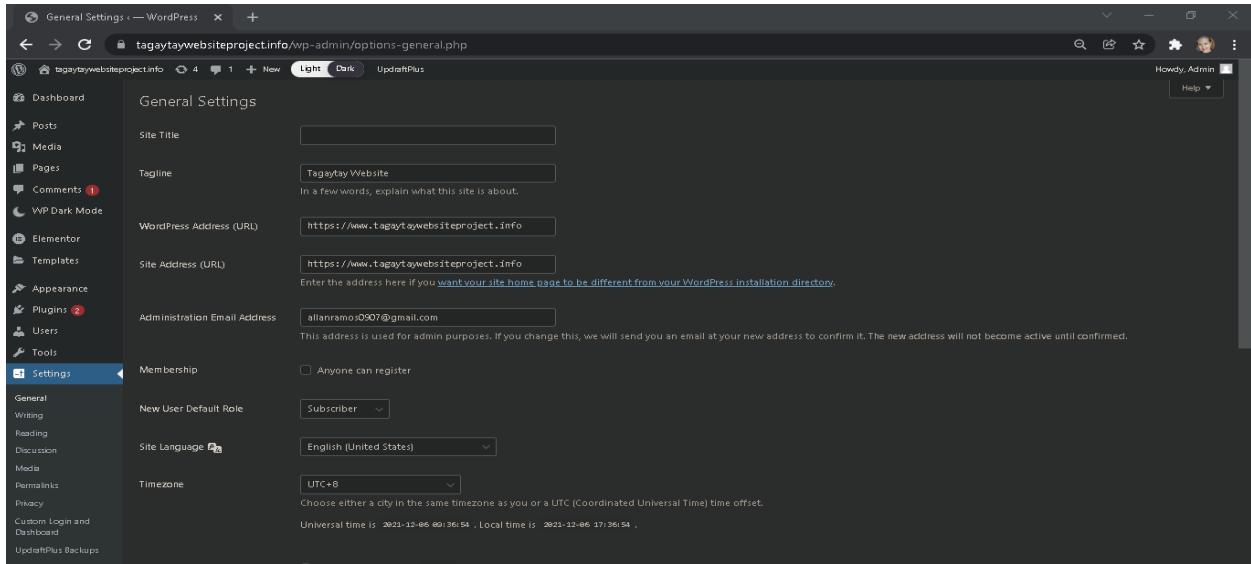


Figure 46. Settings

Figure 46 shows the settings where the System Administrator can edit the defaults in the entire website.

## Project Evaluation

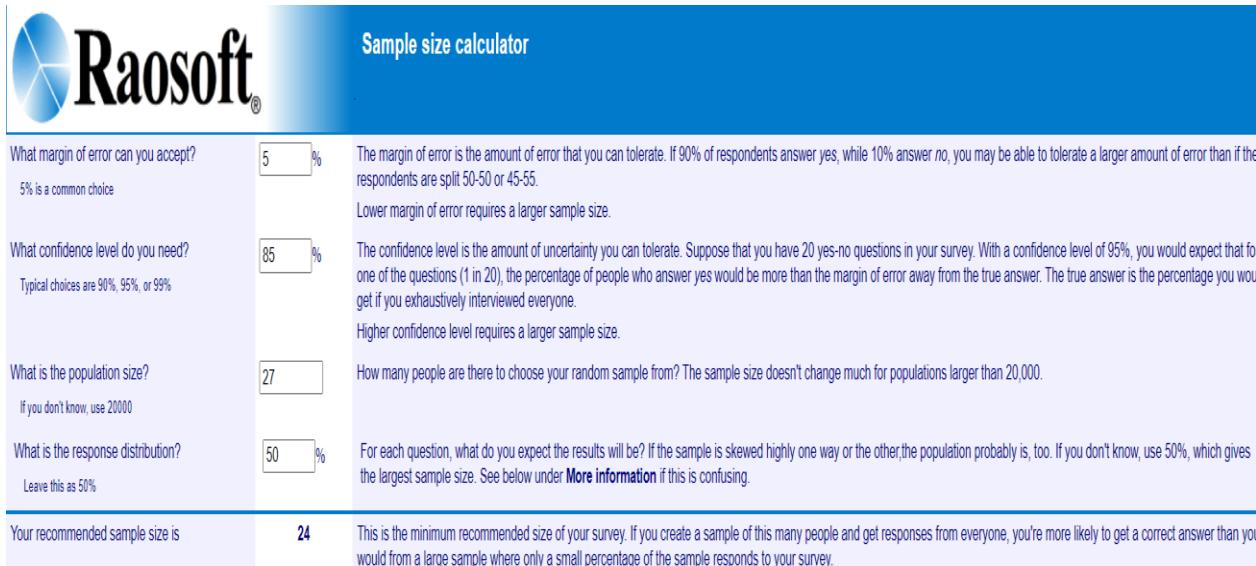
The proponents provided a survey form to evaluate the developed system based on ISO 9126 standard that consists of six (6) categories namely: functionality with sub-categories: suitability, accuracy, interoperability, compliance, and security which will evaluate the capability of the software product to provide functions meets stated and implied needs. Reliability which is sub-divided into maturity, fault-tolerance, and recoverability that will evaluate the capability of the software product to maintain a specified level of performance. Usability where capability of the software product to be

understood, learned, used and attractive to the users is being evaluated with its sub-categories' understandability, learnability, operability and attractiveness. Efficiency with the sub-categories time behavior and resource behavior that will help evaluate the capability of the software product to provide appropriate performance, relative to the number of resources used. Maintainability and its sub-categories analyzability, changeability, stability and testability, the capability of the software product to be modified. Modifications may include corrections, improvements or adaptation of the software to the changes in the environment, and in requirements and functional specifications; and Portability with adaptability, instability, conformity and replaceability, the ability of the software to run with little or no modification.

### **Breakdown of the Respondents**

The proponents conducted a survey about a Capstone Project entitled "Dynamic Website for Tagaytay City". Assuming there were 4340 Students and 27 Faculty Members/IT Professionals of School of Computer Studies (SCS) of City College of Tagaytay; at least how many of these students and faculty members/IT professionals would the proponents need to answer the survey if the proponents want to conduct the study with a 5% margin of error?

The proponents used the sample size calculator by Raosoft, Inc. to identify the sample size using a 5% margin of error, 85% confidence level and a 50% response distribution. The population size for the student is 4340 and 27 is the population size of the faculty member/IT professionals.



The Raosoft Sample size calculator interface for Faculty/client and IT Professionals. The calculator asks for the following inputs:

- What margin of error can you accept? 5%
- What confidence level do you need? 85%
- What is the population size? 27
- What is the response distribution? 50%

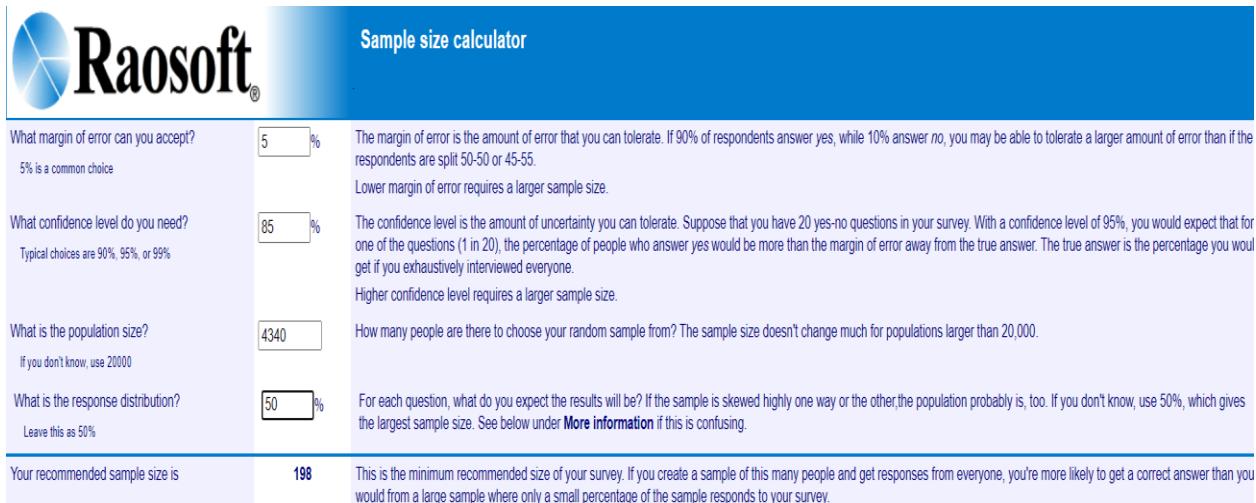
The calculator displays the following results:

- Your recommended sample size is 24.

Explanation for the result: This is the minimum recommended size of your survey. If you create a sample of this many people and get responses from everyone, you're more likely to get a correct answer than you would from a large sample where only a small percentage of the sample responds to your survey.

**Figure 47. Raosoft Sample size Calculator for Faculty/client and IT Professionals**

The figure 47 illustrates the computation of the sample size of the faculty member/IT professionals that resulted to 24 total of respondents. The proponents would need 24 out of 27 Faculty Members/IT Professional to answer the survey so that they can confidently conduct it with a 5% margin of error.



The Raosoft Sample size calculator interface for Students of City College of Tagaytay. The calculator asks for the following inputs:

- What margin of error can you accept? 5%
- What confidence level do you need? 85%
- What is the population size? 4340
- What is the response distribution? 50%

The calculator displays the following results:

- Your recommended sample size is 198.

Explanation for the result: This is the minimum recommended size of your survey. If you create a sample of this many people and get responses from everyone, you're more likely to get a correct answer than you would from a large sample where only a small percentage of the sample responds to your survey.

**Figure 48. Raosoft Sample size Calculator for Students of City College of Tagaytay**

Figure 48 illustrates the computation of the sample size of the students that resulted to 198 total of respondents. The proponents would need 198 out of 4340 students to answer the survey so that they can confidently conduct it with a 5% margin of error.

Table 2 shows the breakdown of the respondents Twenty-four (24) Faculty Members/IT Professionals, and one hundred ninety-eight (198) Students evaluated the system with the use of evaluation instrument questionnaires based on ISO 9126 standard. The number of respondents who evaluated the system shown at Table 2.

Table 2. Breakdown of the Respondents

CLASSIFICATION	NUMBER	PERCENTAGE (%)
Students	198	89.19 %
IT Professional	24	10.81 %
<b>TOTAL</b>	<b>222</b>	<b>100%</b>

### **Respondents' Assessment of the Functionality**

Table 3 shows the respondents assessment of the functionality of the system. The system was evaluated and obtained the mean average of 4.12 which interpreted as "Very Good". This shows that the system fully meets all and exceeds several expectations.

Table 3. Respondents Assessment of the Functionality

INDICATORS	MEAN	INTERPRETATION
Suitability	4.15	Very Good
Accuracy	4.18	Very Good
Interoperability	4.13	Very Good
Compliance	4.18	Very Good
Security	3.95	Very Good
<b>MEAN AVERAGE</b>	<b>4.12</b>	<b>Very Good</b>

**Scale:**

4.21 – 5.00	Excellent
3.41 – 4.20	Very Good
2.61 – 3.40	Good
1.81 – 2.60	Fair
1.00 – 1.80	Poor

**Respondents' Assessment of the Reliability**

Table 4 shows the respondents assessment of the reliability of the system. The system was evaluated and obtained the mean average of 4.03 which interpreted as “Very Good”. This shows that the system fully meets all and exceeds several expectations.

Table 4. Respondents' Assessment of the Reliability

INDICATORS	MEAN	INTERPRETATION
Maturity	4.09	Very Good
Fault Tolerance	4.03	Very Good
Recoverability	3.96	Very Good
<b>MEAN AVERAGE</b>	<b>4.03</b>	<b>Very Good</b>

**Scale:**

4.21 – 5.00	Excellent
3.41 – 4.20	Very Good
2.61 – 3.40	Good
1.81 – 2.60	Fair
1.00 – 1.80	Poor

**Respondents' Assessment of the Usability**

Table 5 shows the respondents assessment of the usability of the system. The system was evaluated and obtained the mean average of 4.27 which interpreted as “Excellent”. This shows that the system fully meets and far exceeds the most expectations. This also demonstrates that the the system is capable to be understood, learned, used and attract the user.

Table 5. Respondents' Assessment of the Usability

<b>INDICATORS</b>	<b>MEAN</b>	<b>INTERPRETATION</b>
Understandability	4.30	Excellent
Learnability	4.42	Excellent
Operability	4.31	Excellent
Attractiveness	4.06	Very Good
<b>MEAN AVERAGE</b>	<b>4.27</b>	<b>Excellent</b>

**Scale:**

4.21 – 5.00	Excellent
3.41 – 4.20	Very Good
2.61 – 3.40	Good
1.81 – 2.60	Fair
1.00 – 1.80	Poor

**Respondents' Assessment of the Efficiency**

Table 6 shows the respondents assessment of the efficiency of the system. The system was evaluated and obtained the mean average of 4.25 which interpreted as "Excellent". This shows that the system fully meets and far exceeds the most expectations. This also demonstrates that the system is capable to provide appropriate performance relative to the number of resources used.

Table 6. Respondents' Assessment of the Efficiency

<b>INDICATORS</b>	<b>MEAN</b>	<b>INTERPRETATION</b>
Time Behavior	4.17	Very Good
Resource Behavior	4.32	Excellent
<b>MEAN AVERAGE</b>	<b>4.25</b>	<b>Excellent</b>

**Scale:**

4.21 – 5.00	Excellent
3.41 – 4.20	Very Good
2.61 – 3.40	Good
1.81 – 2.60	Fair
1.00 – 1.80	Poor

**Respondents' Assessment of the Maintainability**

Table 7 shows the respondents assessment of the maintainability of the system. The system was evaluated and obtained the mean average of 4.11 which interpreted as "Very Good". This shows that the system fully meets all and exceeds several expectations.

Table 7. Respondents' Assessment of the Maintainability

INDICATORS	MEAN	INTERPRETATION
Analyzability	3.99	Very Good
Changeability	4.13	Very Good
Stability	4.07	Very Good
Testability	4.24	Excellent
<b>MEAN AVERAGE</b>	<b>4.11</b>	<b>Very Good</b>

**Scale:**

4.21 – 5.00	Excellent
3.41 – 4.20	Very Good
2.61 – 3.40	Good
1.81 – 2.60	Fair
1.00 – 1.80	Poor

### **Respondents' Assessment of the Portability**

Table 8 shows the respondents assessment of the portability of the system. The system was evaluated and obtained the mean average of 4.14 which interpreted as "Very Good". This shows that the system fully meets all and exceeds several expectations.

Table 8. Respondents' Assessment of the Portability

<b>INDICATORS</b>	<b>MEAN</b>	<b>INTERPRETATION</b>
Adaptability	4.17	Very Good
Instability	4.11	Very Good
Conformity	4.15	Very Good
Replaceability	4.14	Very Good
<b>MEAN AVERAGE</b>	<b>4.14</b>	<b>Very Good</b>

#### **Scale:**

- 4.21 – 5.00 Excellent
- 3.41 – 4.20 Very Good
- 2.61 – 3.40 Good
- 1.81 – 2.60 Fair
- 1.00 – 1.80 Poor

### **Respondents Overall Assessment**

Table 9 summarizes the result of the system evaluation. The evaluators rated the Usability Criteria with the mean average of 4.27 as the highest criteria that concludes that the systems are able to be understood, learned, used and attract user. On the other hand, IT Professionals, Client and Faculty rated the over-all mean performance of the Dynamic Website for Tagaytay City as 4.13 and students, which is 4.17 with the mean average of 4.15.

Table 9. Summary of Evaluation

<b>Software Evaluation</b>	<b>Mean</b>	<b>Interpretation</b>
Functionality	4.12	Very Good
Reliability	4.03	Very Good
Usability	4.27	Excellent
Efficiency	4.25	Excellent
Maintainability	4.11	Very Good
Portability	4.14	Very Good
<b>Mean Average</b>	<b>4.15</b>	<b>Very Good</b>

**Scale:**

4.21 – 5.00	Excellent
3.41 – 4.20	Very Good
2.61 – 3.40	Good
1.81 – 2.60	Fair
1.00 – 1.80	Poor

## Chapter V

### SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

#### Summary of Findings

The proponents designed and developed a “Dynamic Website for Tagaytay City” using CMS WordPress that will help the intended users to inform and make a real time updates to the residents and other people interested in the city in a fast and easy manageable website. The purpose of this system is to replace the current website which is static in to dynamic because updating the current website consumes a lot of time in making changes to it.

In Dynamic Website, the System administrator has the highest responsibility in running the system and has the ability in managing the website’s UI and function. System administrator can also provide account to multiple content creator that will allow access to create, edit and publish content into the website. The content creator are the assigned staff from different department in Tagaytay City Hall, they are the ones responsible in publishing content that can inform and update viewer/user of the website. The user/viewer are the people inside and outside Tagaytay City, they can view the updated website’s façade and contents. The user/viewer can download files from the downloads menu and can leave a comment to be approved by the author (system administrator or content creator) of the post.

Dynamic Website for Tagaytay City is a user friendly website because it is flexible and easy to use. The assigned person who will handle the system should not worry because it doesn’t need a technical or a programming skills in order to operate the

system. Editing and modifying the system can be easily done right away by using the plugins or themes provided by the CMS Wordpress.

The proponents used survey questionnaires as the key instrument in collecting data and level of the system performance. The study was composed of 222 respondents: (a) 24 respondents were Faculty Members/IT Professionals; and (b) 198 respondents were Students from School of Computer Studies of City College of Tagaytay. The questionnaire contained the following categories: (a) functionality which has descriptive scale rating of "Very Good" this means that the system suites the functional requirement; (b) reliability with a descriptive scale rating of "Very Good" which means that the system is stable, consistent and can recover from any failure; (c) usability with descriptive scale rating of "Excellent" this means that the system meets the objectives with effectiveness, efficiency and satisfaction of the users; (d) efficiency got descriptive scale rating of "Excellent" which means that the system can perform task without waste in time and materials; (e) maintainability with descriptive scale rating of "Very Good" and (f) portability with descriptive scale rating of "Very Good" which means that the system is portable in a way that it can be used in the same software with different environment.

The overall rating for the system obtained the total mean average of 4.15 with descriptive scale rating of "Very Good" which means that the system fully meets all need and excels several expectations.

## **Conclusions**

The development of Dynamic Website for Tagaytay City has the capability of updating information from time to time, make changes to its content and would be used

as the communication platform of the government of Tagaytay City and the residents and non-residents of the city.

In consideration of the objectives of the study and results of testing and evaluation carried out, the following conclusions were derived:

1. Dynamic website was designed that provides the following:
  - a. An access to the assigned system administrator and content creator;
  - b. The system administrator and content creator can manage the information; and
  - c. The assigned system administrator of Tagaytay City Hall can monitor and update the website.
2. the website was tested in the different testing procedures, all the modules of the website is properly working and performed well in different browsers and mobile devices.
3. the website was evaluated through the use of ISO9126 standards, and acquire the mean average of 4.15. This shows that the system fully meets all and exceeds several expectations; and
4. for the implementation, the proponents created a letter stating that the website was done and fully functional and will be handle over to Tagaytay City Local Government and decide whether the system will be use or not.

## **Recommendations**

Based on the findings of the study, the following are recommended for the future enhancement of the Dynamic Website for Tagaytay City.

1. Upgrade the themes and plugins for better function and much attractive design.
2. Choose a better webhost and domain that provides a large storage capacity and a better performance to a greater security.

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## **Appendices**

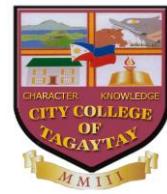
## Appendix A. Summary of Evaluation

Indicators	IT Professionals	Student	Mean Average	Descriptive Rating
<b>FUNCTIONALITY</b>				
Suitability	4.13	4.17	4.15	Very Good
Accuracy	4.13	4.23	4.18	Very Good
Interoperability	4.08	4.18	4.13	Very Good
Compliance	4.13	4.23	4.18	Very Good
Security	3.83	4.08	3.95	Very Good
<b>Average:</b>			<b>4.12</b>	<b>Very Good</b>
<b>RELIABILITY</b>				
Maturity	4.08	4.09	4.09	Very Good
Fault Tolerance	4.04	4.03	4.03	Very Good
Recoverability	3.83	4.10	3.96	Very Good
<b>Average:</b>			<b>4.03</b>	<b>Very Good</b>
<b>USABILITY</b>				
Understandability	4.33	4.27	4.30	Excellent
Learnability	4.46	4.37	4.42	Excellent
Operability	4.38	4.24	4.31	Excellent
Attractiveness	3.96	4.17	4.06	Very Good
<b>Average:</b>			<b>4.27</b>	<b>Excellent</b>
<b>EFFICIENCY</b>				
Time Behavior	4.17	4.17	4.17	Very Good
Resource Behavior	4.33	4.31	4.32	Excellent
<b>Average:</b>			<b>4.25</b>	<b>Excellent</b>
<b>MAINTAINABILITY</b>				
Analyzability	3.92	4.07	3.99	Very Good
Changeability	4.08	4.17	4.13	Very Good
Stability	4.04	4.10	4.07	Very Good
Testability	4.25	4.23	4.24	Excellent
<b>Average:</b>			<b>4.11</b>	<b>Very Good</b>
<b>PORTABILITY</b>				
Adaptability	4.21	4.14	4.17	Very Good
Instability	4.13	4.09	4.11	Very Good
Conformity	4.13	4.17	4.15	Very Good
Replaceability	4.17	4.12	4.14	Very Good
<b>Average:</b>			<b>4.14</b>	<b>Very Good</b>
<b>OVERALL MEAN AVERAGE</b>	<b>4.13</b>	<b>4.17</b>	<b>4.15</b>	<b>Very Good</b>

## Appendix B: Sample Evaluation Sheet



Republic of the Philippines  
 City of Tagaytay  
**CITY COLLEGE OF TAGAYTAY**  
 Akle St., Kaybagal South, Tagaytay City 4120  
 Tel. Nos. (046) 483-0470 / (046) 483 -0672



### SCHOOL OF COMPUTER STUDIES

Title: **DYNAMIC WEBSITE FOR TAGAYTAY CITY**

Proponents: **Maryrose A. Panganiban, Allan A. Ramos, Jhann Rhussel E. Rodriguez,**  
**Camille P. Tenorio**

Evaluator Name: \_\_\_\_\_

Type of Evaluator:      **IT Professional**      **Client/Instructor**      **Student**  
           

**Instruction:** Please kindly evaluate the software material by using the given scale and placing a checkmark (✓) under the corresponding numerical rating.

NUMERICAL RATING	INTERPRETATION	DEFINITION
5	Excellent	The system fully meets and far exceeds the most expectations.
4	Very Good	The system fully meets all and exceeds several expectations.
3	Good	The system fully meets all expectations.
2	Fair	The system does not fully meet all expectations.
1	Poor	The system fails to meet expectation to a significant degree in several areas.

INDICATORS	5	4	3	2	1
<b>A. FUNCTIONALITY</b> (capability of the software product to provide functions which meet stated and implied needs).					
1. Suitability (appropriateness to specifications of the function of the software).					
2. Accuracy (correctness of the functions).					
3. Interoperability (ability of the software to interact with other components or system).					
4. Compliance (compliant capability of software in terms of laws and guidelines).					
5. Security (this relates to unauthorized access to the software).					

<b>B. RELIABILITY</b> (capability of the software product to maintain a specified level of performance).					
1. Maturity (this concern with the frequency of failure of the system).					
2. Fault-tolerance (ability of the software to withstand and recover from component or environmental failure).					
3. Recoverability (ability to bring back the failed system to full operation including data needed).					
<b>C. USABILITY</b> (capability of the software product to be understood, learned, used and attractive to the user).					
1. Understandability (determines the ease of which the system functions can be understood).					
2. Learnability (learning effort for different users).					
3. Operability (ability of the software to be easily operated by a given user in a given environment).					
4. Attractiveness (attribute of software that has the capability of the software product to be attractive to the user).					
<b>D. EFFICIENCY</b> (capability of the software product to provide appropriate performance, relative to the amount of resources used).					
1. Time behavior (characterized response times for a given throughput).					
2. Resource behavior (characterizes resources used).					
<b>E. MAINTABILITY</b> (capability of the software product to be modified. Modifications may include corrections, improvements or adaptation of the software to changes in environment, and in requirements and functional specifications)					
1. Analyzability (ability to identify the root cause of a failure within the software).					
2. Changeability (amount of effort to change a system).					
3. Stability (sensitivity to change of a given system).					
4. Testability (effort needed to verify/test a system change).					
<b>F. PORTABILITY</b>					
1. Adaptability (ability of the system to change new specification or operating environments).					
2. Instability (the effort required to install the software).					
3. Conformity (relates to portability of database used).					
4. Replaceability (plug and play aspects of software components).					

- Based on ISO 9126

**Findings:**

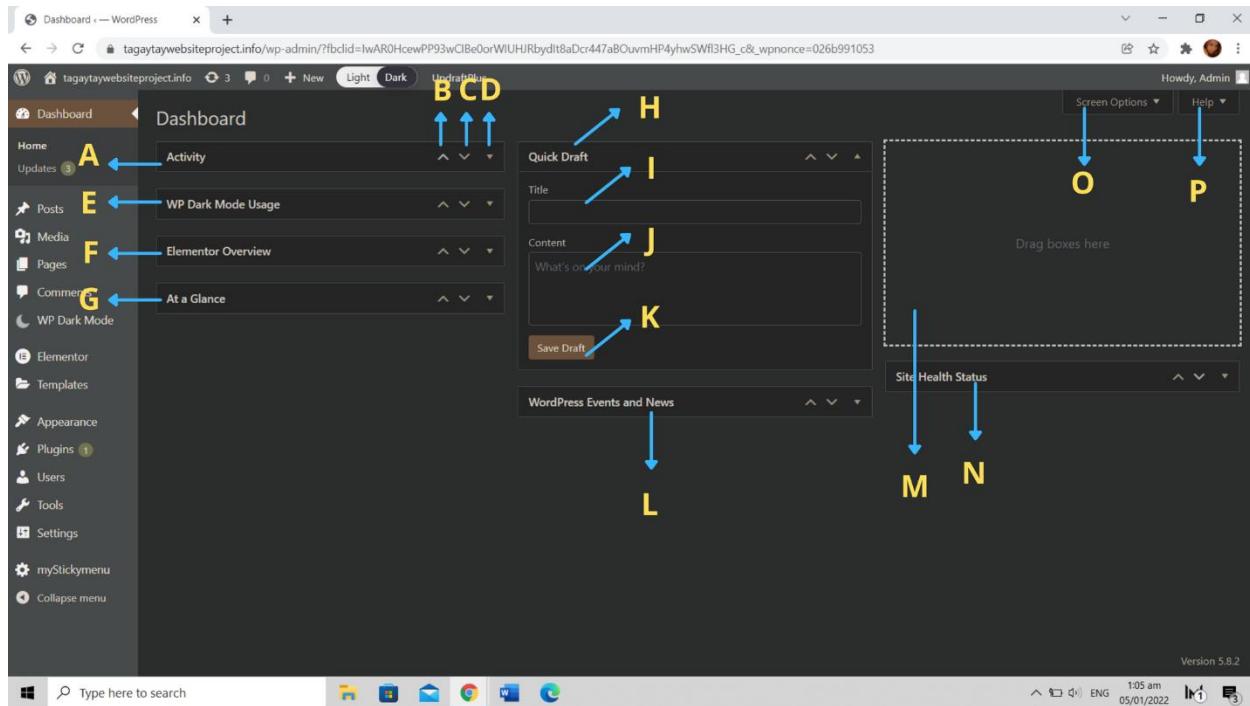
1. \_\_\_\_\_

**Recommendations:**

1. \_\_\_\_\_

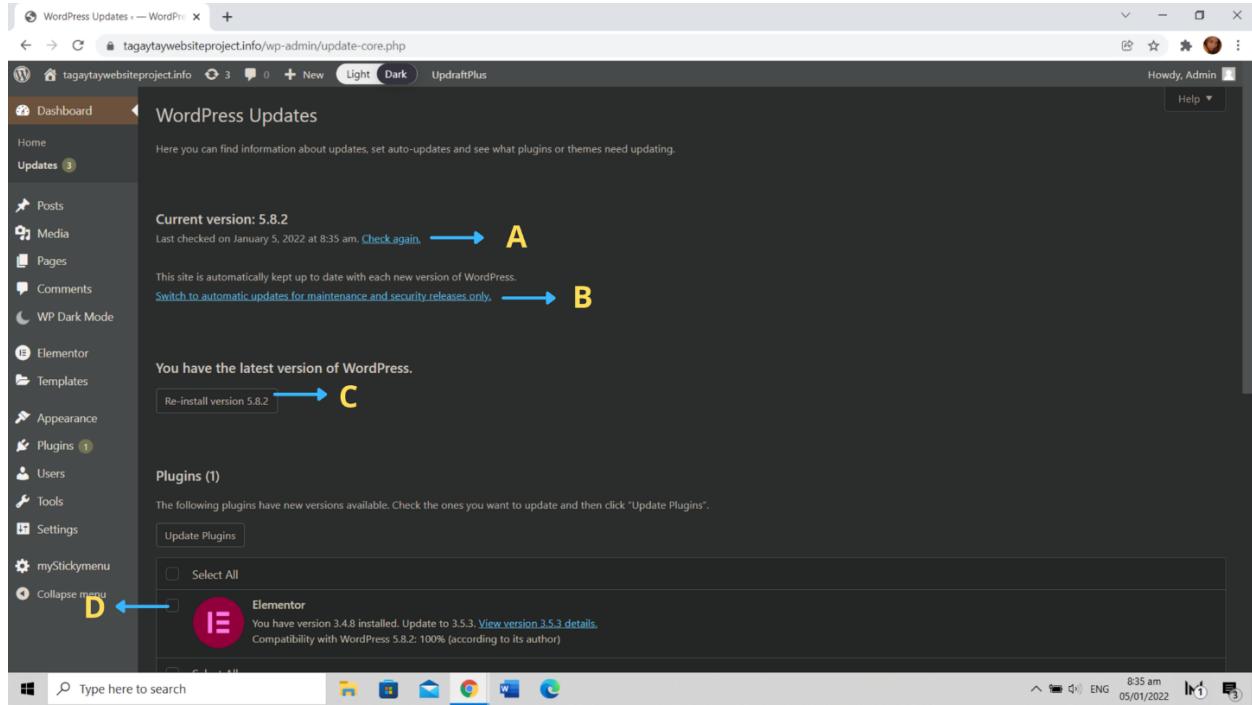
\_\_\_\_\_  
Signature

## Appendix C: Operations Manual / User's Guide



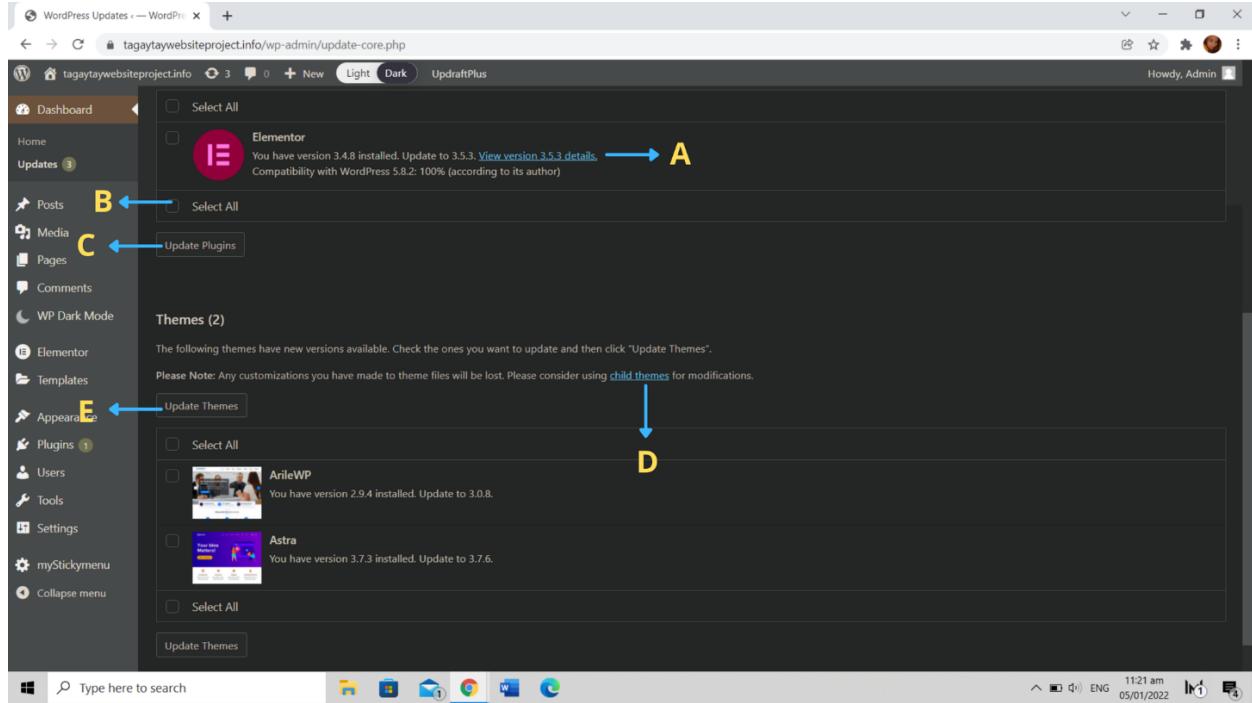
### Dashboard

- Activity widget – allow the System Administrator and Content Creators to view recently published post.
- Arrow Up button – when clicked, the widget's position will move down.
- Arrow Down button – when clicked, the widget's position will move up.
- Expand button – click to expand or hide the content of the widget.
- WP Dark Mode Usage widget – gives analytics on how many users are loving the dark mode of the website.
- Elementor Overview widget – gives an overview of the plugin (Elementor)
- At a Glance widget – provides a summary of the number of posts, pages, and comments on your site.
- Quick Draft widget – allows the user to quickly and easily write a new draft.
- Title text field – where to enter the title of the post
- Content text field – where to enter the content of the post
- Save Draft button – click to save draft.
- WordPress Events and News widget – lists upcoming local events and the latest news from the official WordPress blog.
- Drag boxes here panel – used for adding widgets in your dashboard
- Site's Health Status – helps you monitor how the site is doing.
- Screen Options – allows the user to choose which widgets are displayed or not displayed.
- Help – provides an overview of the WordPress and contains Frequently Asked Questions (FAQs)



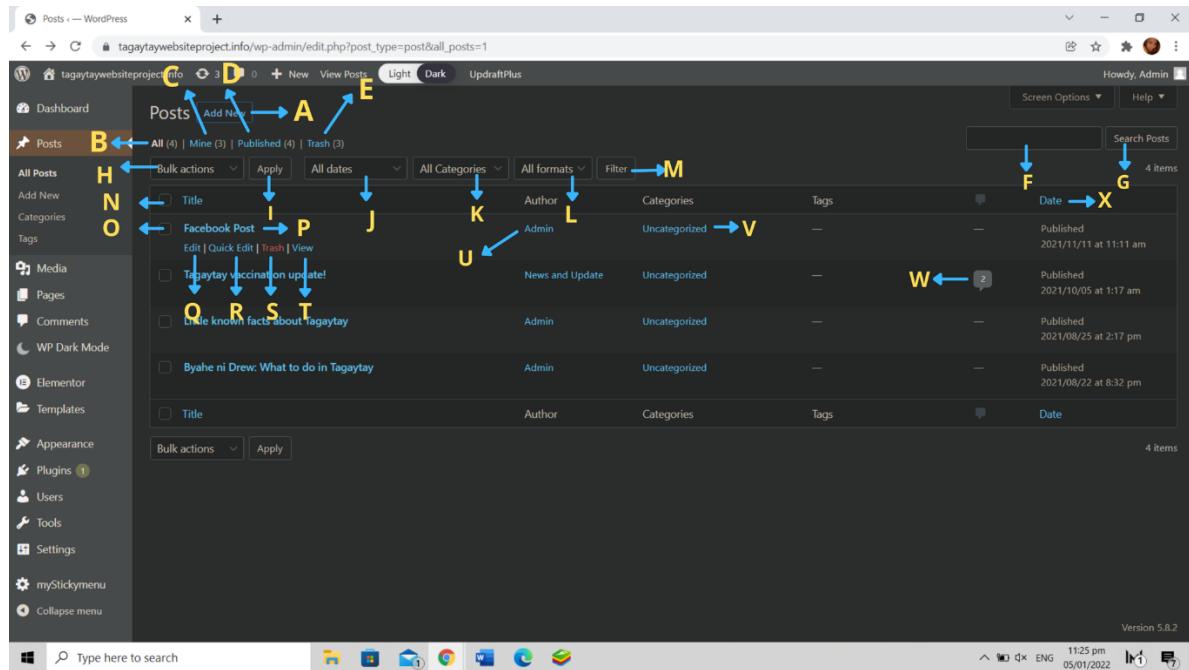
## Updates

- Check again hyperlink – click to check the current version of the WordPress
- Switch to auto-updates hyperlink – click to switch to auto-update
- Re-install version button – click to install the latest version or re-install current version (if updated)
- Select checkbox – click to select the plugin



## Updates

- View version hyperlink – click to view the plugins details.
- Select All checkbox – click to select all
- Update Plugins button – after selecting the plugin, click this button to update
- Child theme – an add-on for your existing WordPress theme
- Update Themes button – after selecting the theme, click this button to update



## Posts

- A. Add New – click to add new post
- B. All – click to see all posts
- C. Mine – click to see all posts posted by the author
- D. Published – click to see all posts published
- E. Trash – click to see all posts moved to Trash
- F. Search bar – text field where to input keywords to search a post
- G. Search Posts button – click to search post after inputting keywords
- H. Bulk Actions – an option to do bulk actions
- I. Apply – click to apply bulk actions
- J. All Dates – an option to show only those posts posted in a specific date
- K. All Categories - an option to show only those posts posted within a specific category
- L. All Formats - an option to show only those posts posted within a specific format (e.g., Image, Video)
- M. Filter button – click to apply chosen filters
- N. Select All Title – checkbox to select all posts
- O. Select – checkbox to select a post
- P. Title – click to go to the post
- Q. Edit – click to edit post
- R. Quick Edit – allows the user to quickly edit a post
- S. Trash – click to move the post to Trash
- T. View – click to view post
- U. Author – shows the author of the post
- V. Category – shows what category the post is belong to

- W. Comments – shows the number of comments in a post  
 X. Date – shows the date and time the post is published

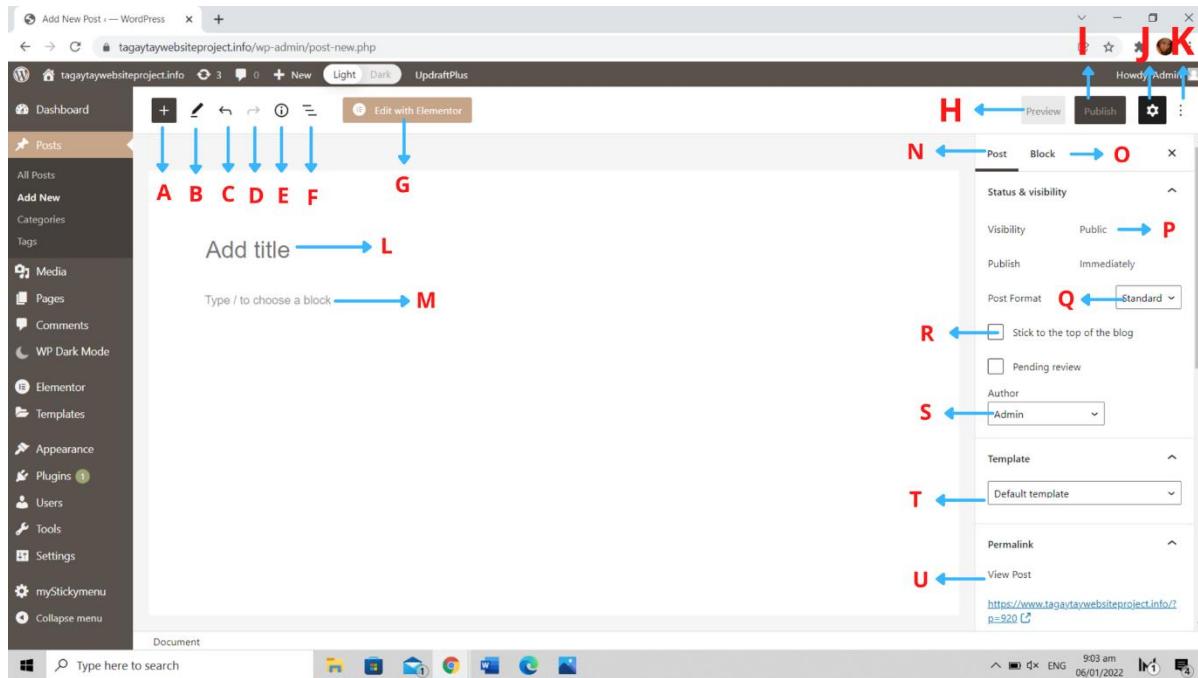
The screenshot shows the WordPress Admin Posts screen with the 'Trash' tab selected. There are three items in the trash:

Title	Author	Categories	Tags	Date
ASdasda	News and Update	Uncategorized	—	Last Modified 2021/12/21 at 1:54 pm
Sample Post by another user	News and Update	Uncategorized	—	Last Modified 2021/11/11 at 11:53 am
Sample Content	Admin	Uncategorized	—	Last Modified 2021/11/11 at 11:07 am

At the bottom of the screen, there is a 'Bulk actions' dropdown, an 'Apply' button, an 'Empty Trash' button, and a search bar.

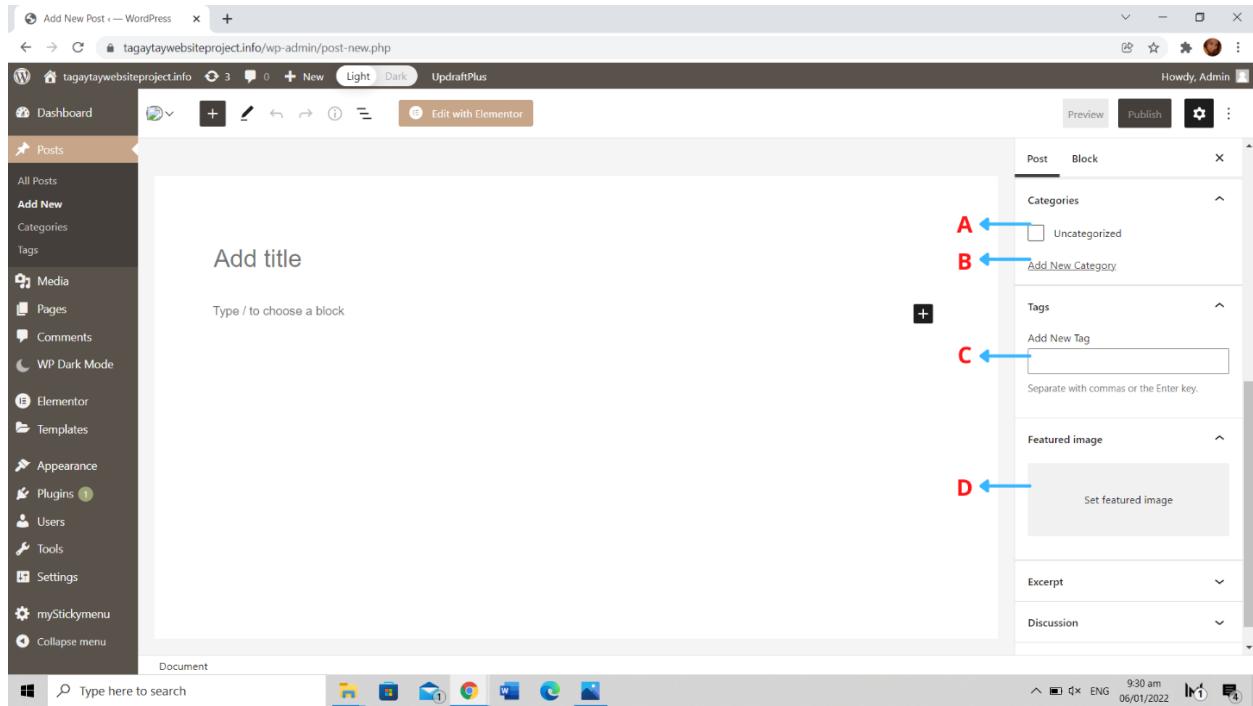
### Posts (Trash)

- A. Restore – option to restore post
- B. Delete Permanently – option to delete the post permanently
- C. Empty Trash – button to empty all posts in Trash



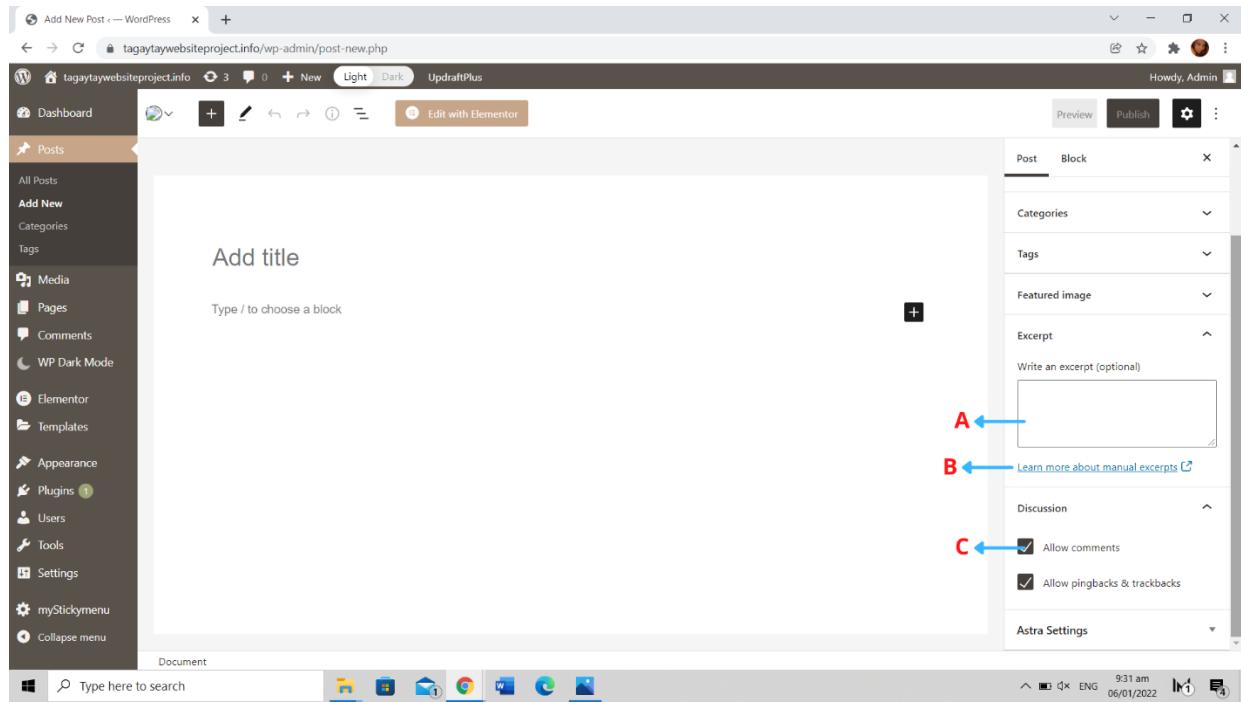
## Add New Post

- A. Toggle Block Inserter – click to toggle block inserter
- B. Tools – click to show tools
- C. Undo – click to undo
- D. Redo – click to redo
- E. Details – show the details
- F. List View – click to change the view to list view
- G. Edit with Elementor – button to edit post with Elementor plugin
- H. Preview – click to preview post
- I. Publish – click to publish post
- J. Settings – click to show more settings
- K. Options – click to shows more options
- L. Add title text field – text field where to put the title of the post
- M. Content text field – text field where to put the content of the post
- N. Post – shows more settings to setup your post
- O. Block – the components for adding content in the new WordPress block editor.
- P. Visibility – allows the user to control the visibility of the posts and Pages on an individual basis.
- Q. Post Format – provides a standardized list of formats that are available to all themes that support the feature.
- R. Stick to the top of the blog – checkbox use for pinning post
- S. Choose Author – allows the user to change the author of the post
- T. Template – allows the user to choose from saved templates
- U. Permalink – shows the link of the post



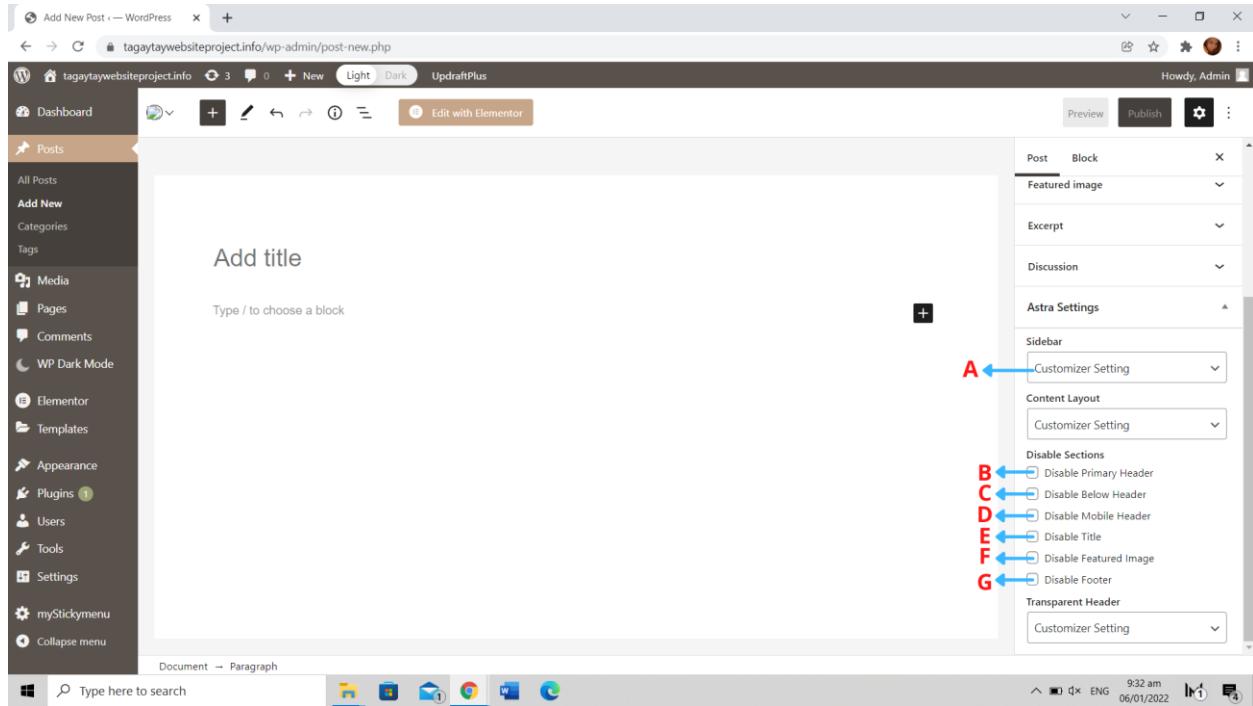
## Add New Post

- Uncategorized – checkbox to mark post as uncategorized
- Add New Category – link to add new category
- Add New Tag – text field to add tag
- Set featured image – button to upload new image for the post or just choose from uploaded images in the website's media library



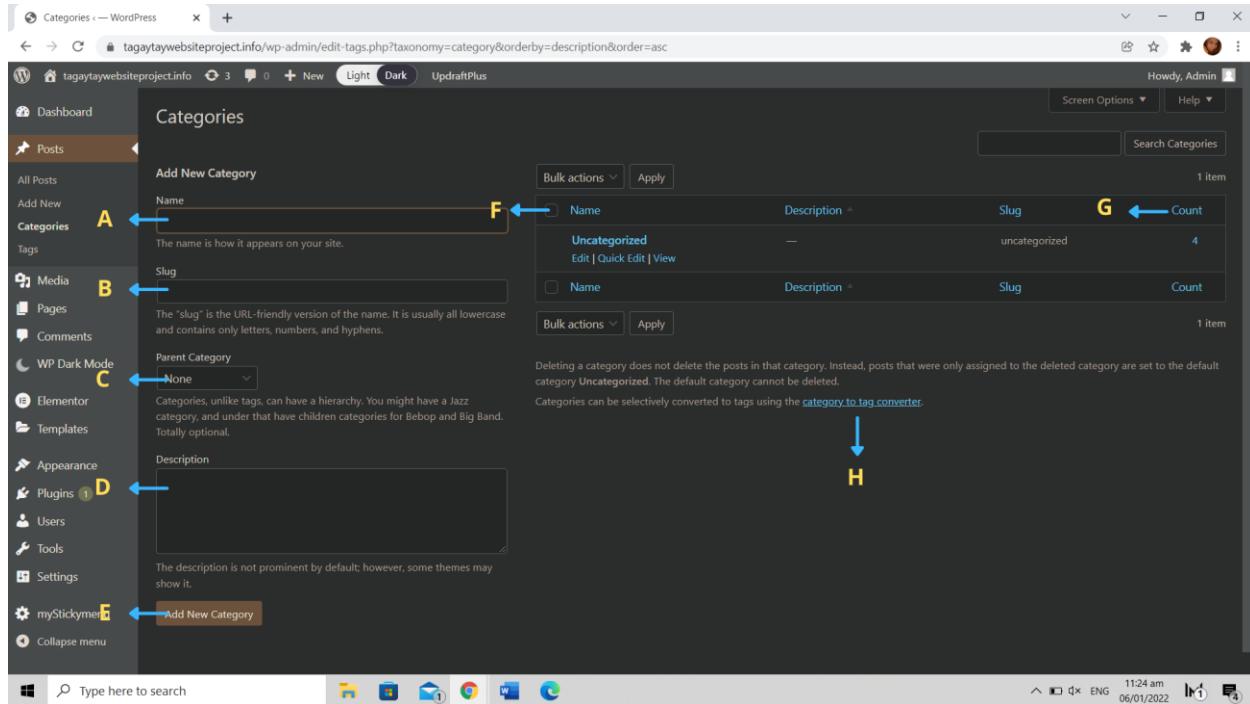
## Add New Post

- A. Excerpt - used for article summary with a link to the whole entry.
- B. Learn more – click to learn more about manual excerpts
- C. Allow comments – click to allow or block comments in the post



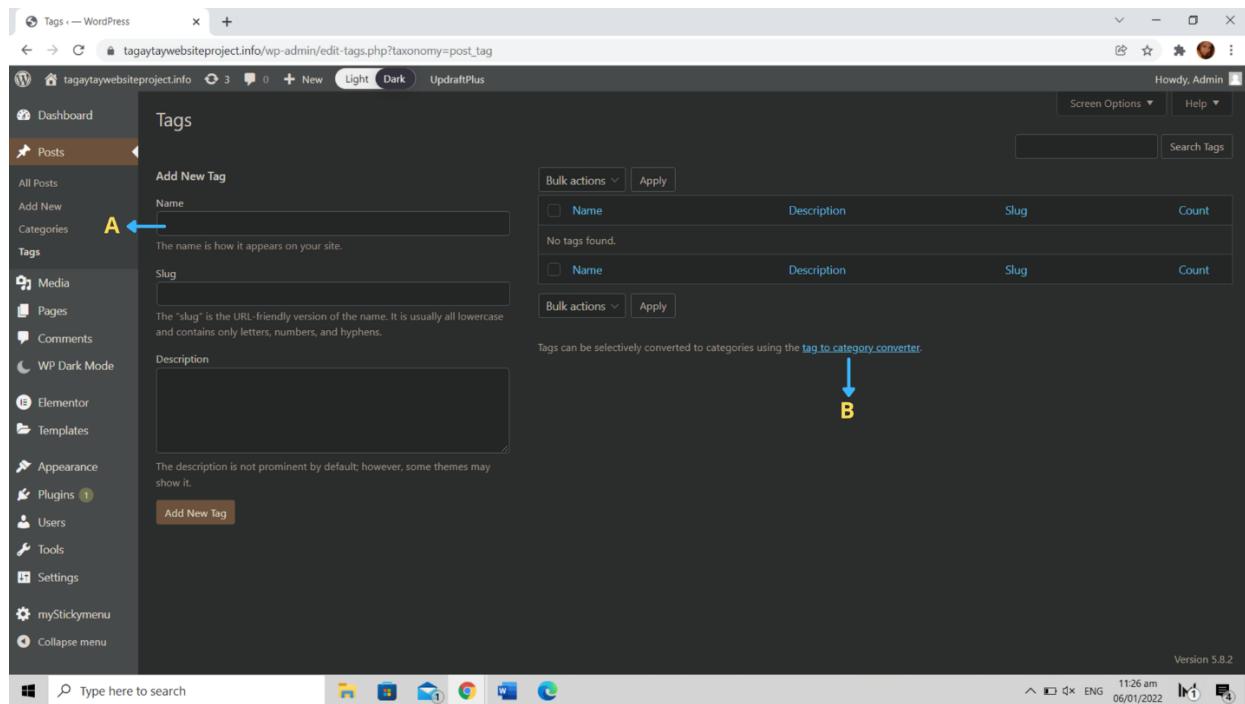
## Add New Post

- A. Customizer Setting – dropdown to choose from different sidebars or layout
- B. Disable Primary Header – select to disable primary header
- C. Disable Below Header – select to disable below header
- D. Disable Mobile Header – select to disable mobile header
- E. Disable Title – select to disable title
- F. Disable Featured Image – select to disable featured image
- G. Disable Footer – select to disable footer



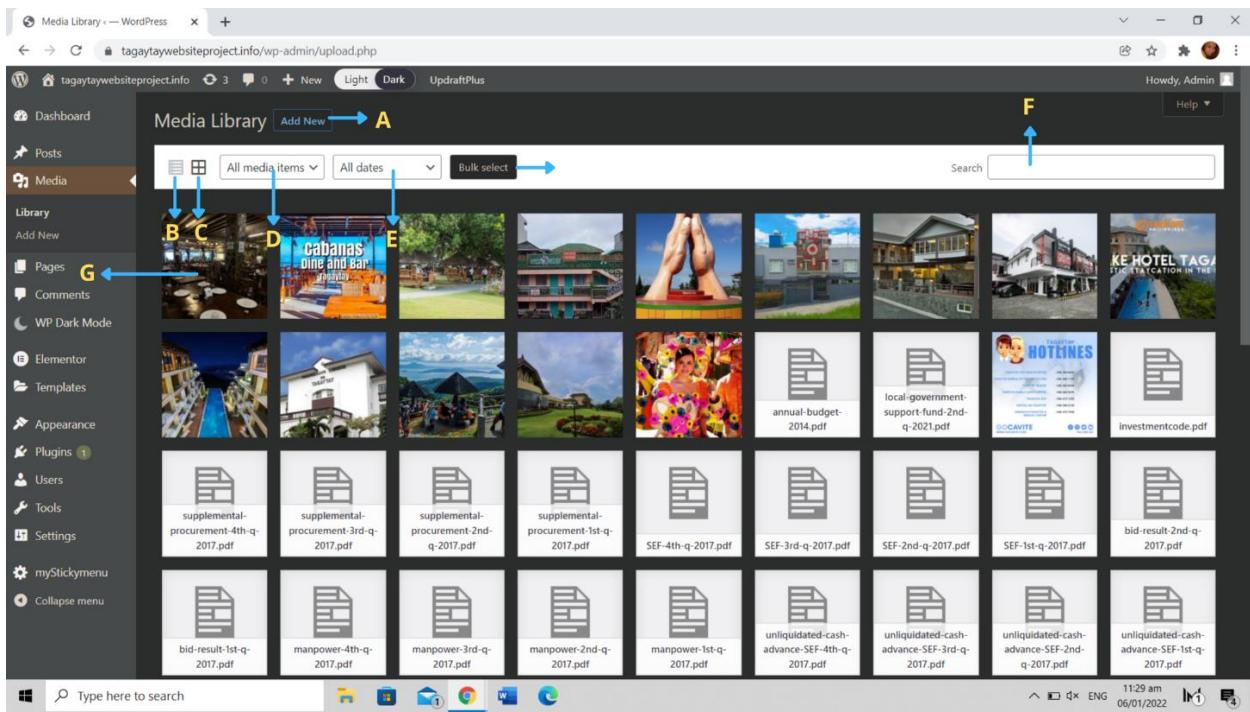
## Categories

- A. Category Name – text field to put category name
- B. Slug – the editable part of the URL of a page
- C. Parent Category – allows the user to choose from parent categories
- D. Description – text field where to put the description of category
- E. Add New Category – button to add category
- F. Select All – checkbox to select all category
- G. Count – show the number of posts under a category
- H. Category to Tag converter – converts a category to tag



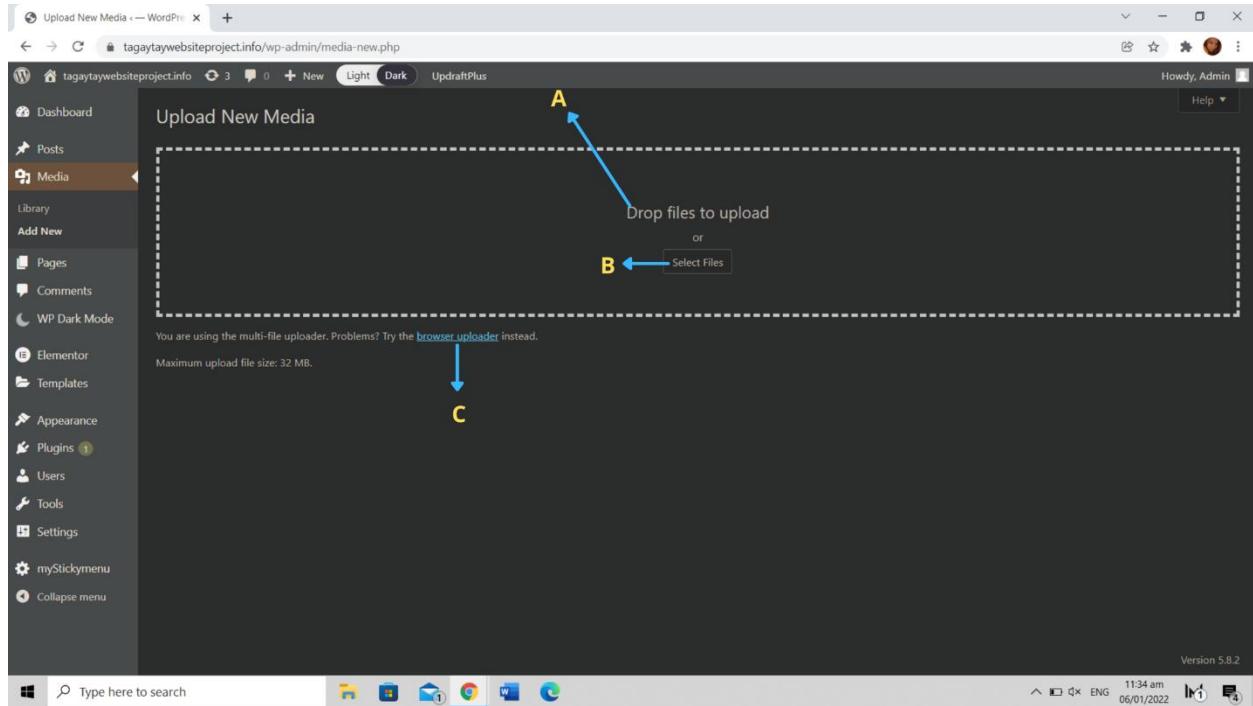
## Tags

- A. Tag Name – text field to put the Tag name
- B. Tag to Category converter – converts a tag to category



## Media Library

- Add New – click to add new media
- List View – click to change view to list view
- Grid View – click to change view to grid view
- All Media Items – an option to show only those media within a specific media format
- All Dates – an option to show only those media uploaded in a specific date
- Bulk Select – click to select multiple images or files
- Search Bar – text field where to put keywords to easily find an image or file.



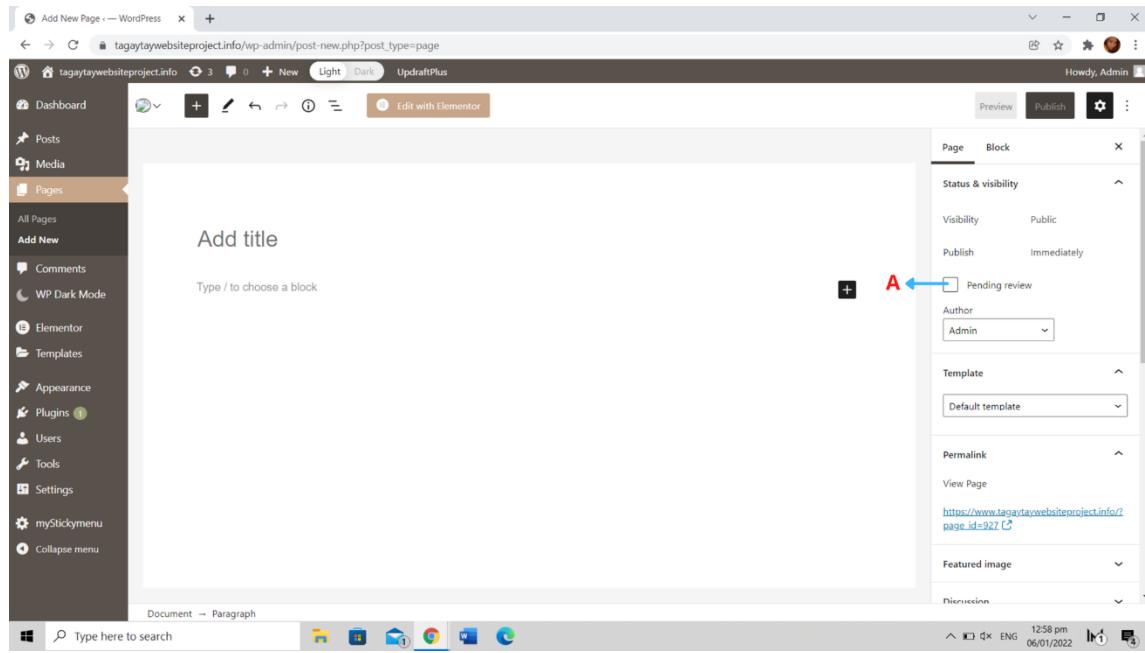
### Add New Media

- A. Drop files – panel where to drop files to upload
- B. Select Files – click to select and upload a file from the device's folder
- C. Browser uploader – click to switch to browser uploader

Title	Author	Date
About Us	Admin	Published 2021/08/16 at 4:34 pm
Amusement parks	Admin	Published 2021/11/20 at 3:03 pm
Business Permit and Licensing	Admin	Published 2021/08/16 at 4:45 pm
Businesses	Admin	Published 2021/08/16 at 4:35 pm
Citizens Charter	Admin	Published 2021/08/16 at 4:42 pm
City Google Map — Elementor	Admin	Published 2021/08/16 at 4:40 pm
City Seal	Admin	Published 2021/08/16 at 4:44 pm
Component Barangays	Admin	Published 2021/08/16 at 4:40 pm
Contact Us	Admin	Published 2021/08/16 at 4:36 pm

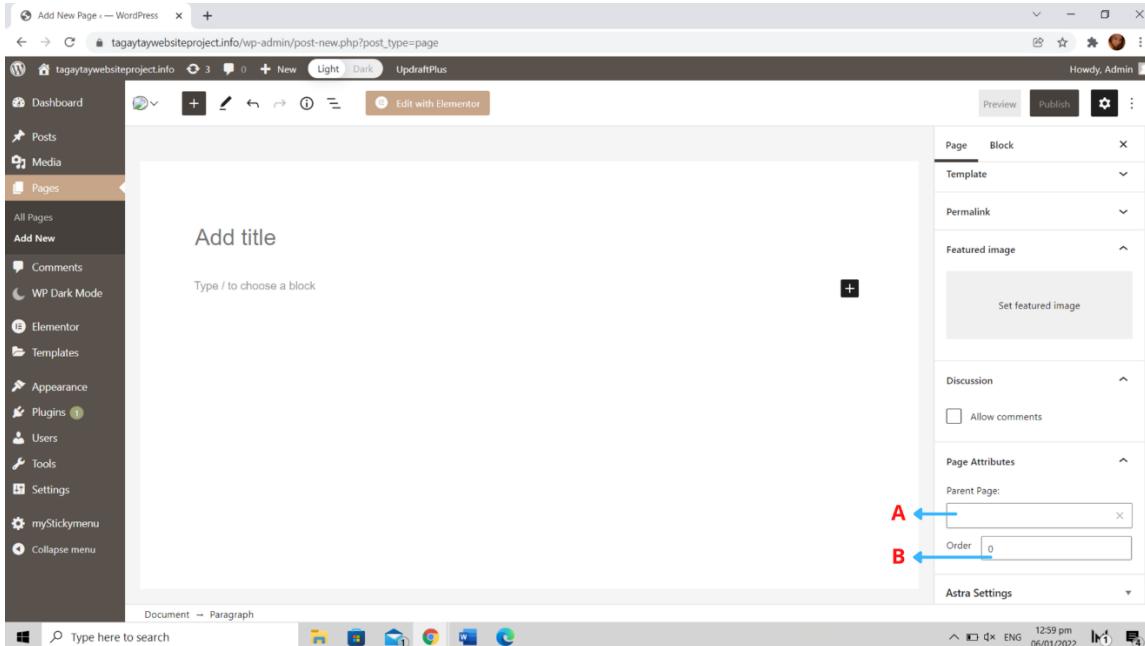
## Pages

- Two pages backward button – click to go 2 pages backward
- Previous page button – click to go to previous page
- Page input – input page number to go that page
- Next page button – click to go to next page
- Two pages forward pages button – click to go two pages forward



## Add New Page

- A. Pending review checkbox – when checked, the draft is waiting for review by an editor prior to publication.



## Add New Page

- A. Parent Page – dropdown to choose a parent page  
 B. Order – input a value to arrange order

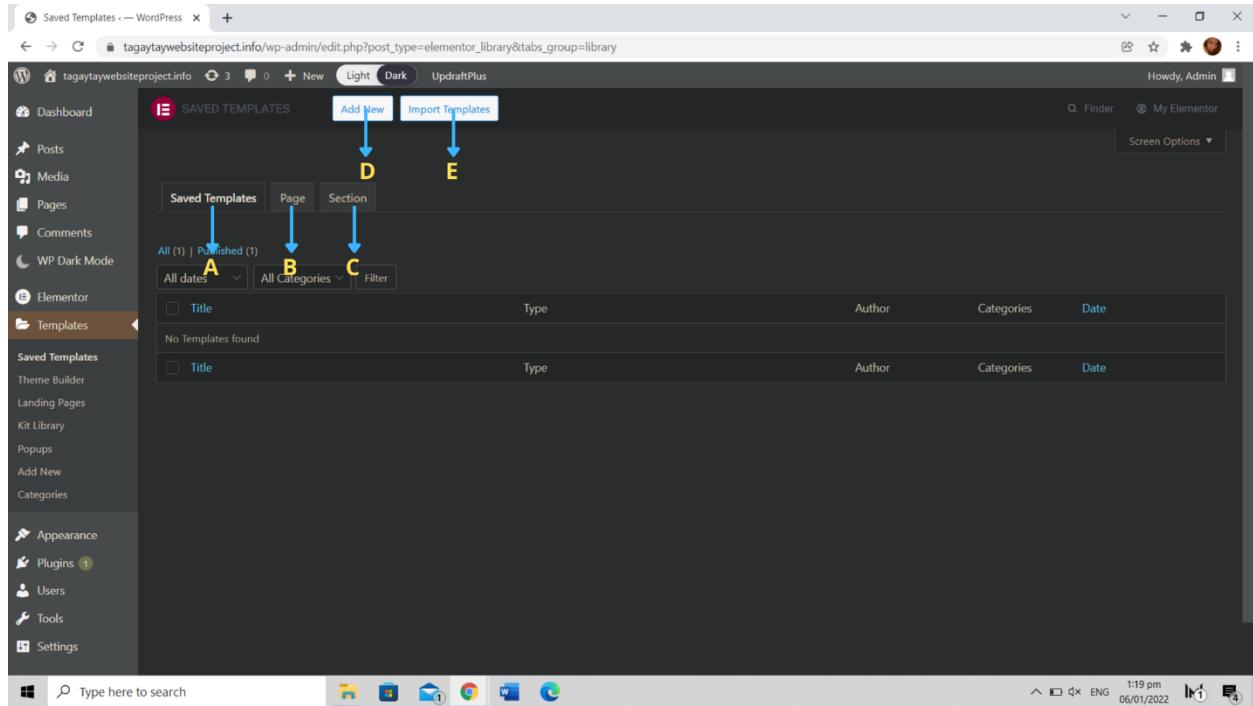
The screenshot shows the WordPress admin interface for managing comments. The left sidebar is dark-themed and includes links for Dashboard, Posts, Media, Pages, Comments (which is highlighted), WP Dark Mode, Elementor, Templates, Appearance, Plugins (with 1 update), Users, Tools, Settings, myStickyMenu, and Collapse menu. The main content area has a light background and displays two comments:

Author	Comment	In response to	Submitted on
Admin tagaytaywebsiteproject.info allanramos0907@gmail.com 49.146.192.116	In reply to Allan. This is a sample reply for the sample comment <a href="#">Unapprove</a>   <a href="#">Reply</a>   <a href="#">Quick Edit</a>   <a href="#">Edit</a>   <a href="#">Spam</a>   <a href="#">Trash</a>	Tagaytay vaccination update!	2022/01/05 at 6:56 pm
Allan allanramos0907@gmail.com 49.146.192.116	This is a sample comment <a href="#">A</a> <a href="#">B</a> <a href="#">C</a>	Tagaytay vaccination update!	2022/01/05 at 6:52 pm

Below the table are 'Bulk actions' and 'Apply' buttons. The bottom right corner shows the version 'Version 5.8.2'. The taskbar at the bottom includes icons for File Explorer, Task View, Mail, Google Chrome, Microsoft Edge, and File Explorer.

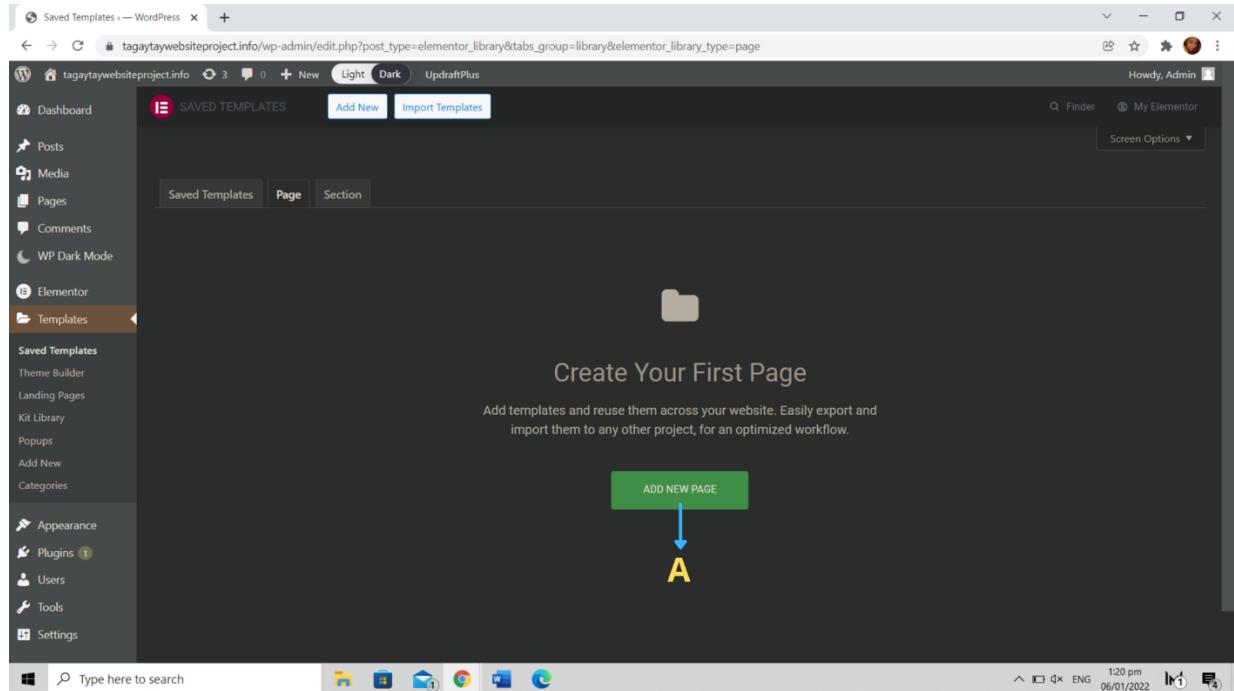
## Comments

- A. Comment Approval – click to approve or unapproved comment
- B. Spam – click to move comment to Spam
- C. Trash – click to move comment to Trash



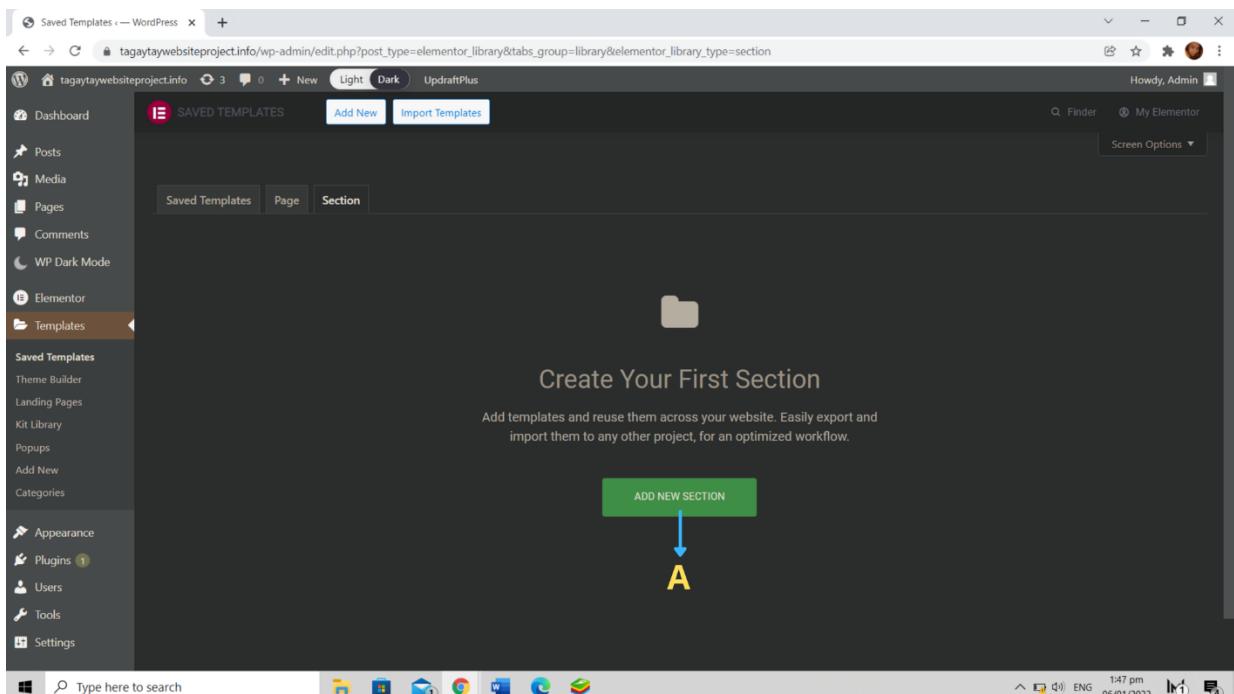
## Templates

- A. Saved Templates – a tab to see the list of saved templates
- B. Page – a tab to see the list of pages
- C. Section – a tab to see the list of sections
- D. Add New – click to add new template
- E. Import Templates – click to import templates



## Add New Template (Page)

- A. Add New Page – click to add new page as template



## Add New Template (Section)

- A. Add New Section – click to add new section as template

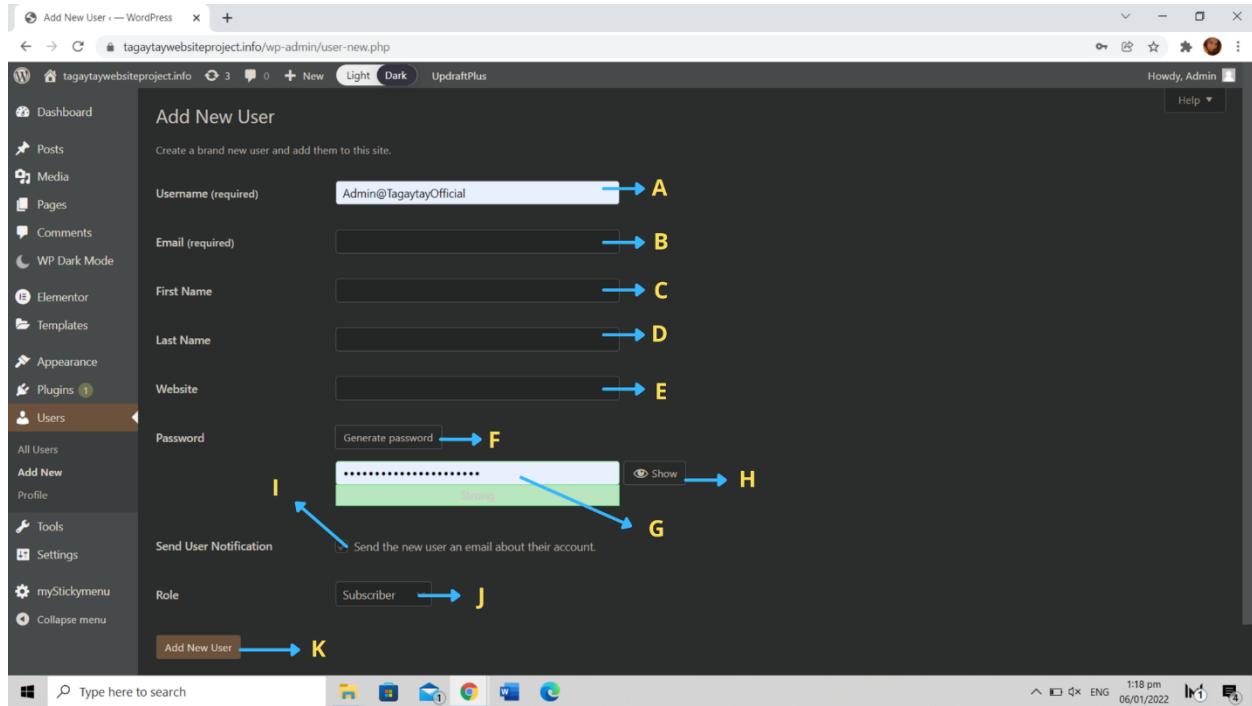
The screenshot shows the WordPress Admin Users page. The sidebar on the left includes links for Dashboard, Posts, Media, Pages, Comments, WP Dark Mode, Elementor, Templates, Appearance, Plugins (with 1 update), and Users (selected). The main content area displays a table of users:

Username	Name	Email	Role	Posts
Admin@NewsAndUpdate	News and Update	allan.ramos@citycollegeoftagaytay.edu.ph	Author	1
Admin@TagaytayOfficial	—	allanramos0907@gmail.com	Administrator	3
Admin@TourismDepartment	Tourism Department	TourismDepartmentTC@gmail.com	Author	0

Below the table are bulk actions: 'Bulk actions' dropdown, 'Apply' button, 'Change role to...' dropdown, and 'Change' button.

## Users

- Administrator – click to see details of the Administrator
- Author – click to see the details of the Authors
- View – click to view profile of the user
- Send password reset – click to send a password reset



## Add New User

- Username – text field where to input user's username
- Email – text field where to input user's email
- First Name – text field where to input user's First Name
- Last Name – text field where to input user's Last Name
- Website – text field where to input user's website
- Generate Password – click to input an automatically generated password
- Password – text field where to input user's password
- Show – click to hide or unhide password
- Send User Notification – when checked, an email will be sent to the new user about their account
- Role – click to choose from different roles
- Add New User – click to finish and add new user

## Appendix D. Test Results

### UNIT TESTING

System Administrator				
Module	Findings	Solution	Status	Date
<b>Account Management Module</b>	None None None Duplication	None None None Email Validation	Working Working Working Working	12/21/2021 12/21/2021 12/21/2021 12/21/2021
Login				
Edit Account Information				
Reset Password				
Add/Delete Account With Assigned Role	None No retrieve/ restore Content No Approve/ Disapprove No Reply /Comment	None Added Added Added	Working Working Working Working	12/21/2021 12/21/2021 12/21/2021 12/21/2021
<b>Content Management Module</b>				
Add/ Edit/Delete Pages				
Add/Edit/Delete Content				
Approve/Disapprove Comment	No Approve/ Disapprove	Added	Working	12/21/2021
Reply/Comment				
<b>Maintenance And System Update Module</b>	None None None	None None None	Working Working Working	12/21/2021 12/21/2021 12/21/2021
Add/Delete/Update/Upgrade Plugins				
Change/Upgrade Theme				
System Update				

Content Creator				
Module	Findings	Solution	Status	Date
<b>Account Management Module</b>				
Login	None	None	Working	12/21/2021
Change Photo	Default photo	Change Photo	Working	12/21/2021
Change Email	Default Email	Change Email	Working	12/21/2021
Change Nickname	Default Nickname	Change Nickname	Working	12/21/2021
Change Password	Default Password	Change Password	Working	12/21/2021
<b>Content Management Module</b>				
Add/Edit/Delete Content	No retrieve/ restore Content	Added	Working	12/21/2021
Approve/Disapprove Comment	No Approve/ Disapprove	Added	Working	12/21/2021
Reply/Comment	No Reply/ Comment	Added	Working	12/21/2021

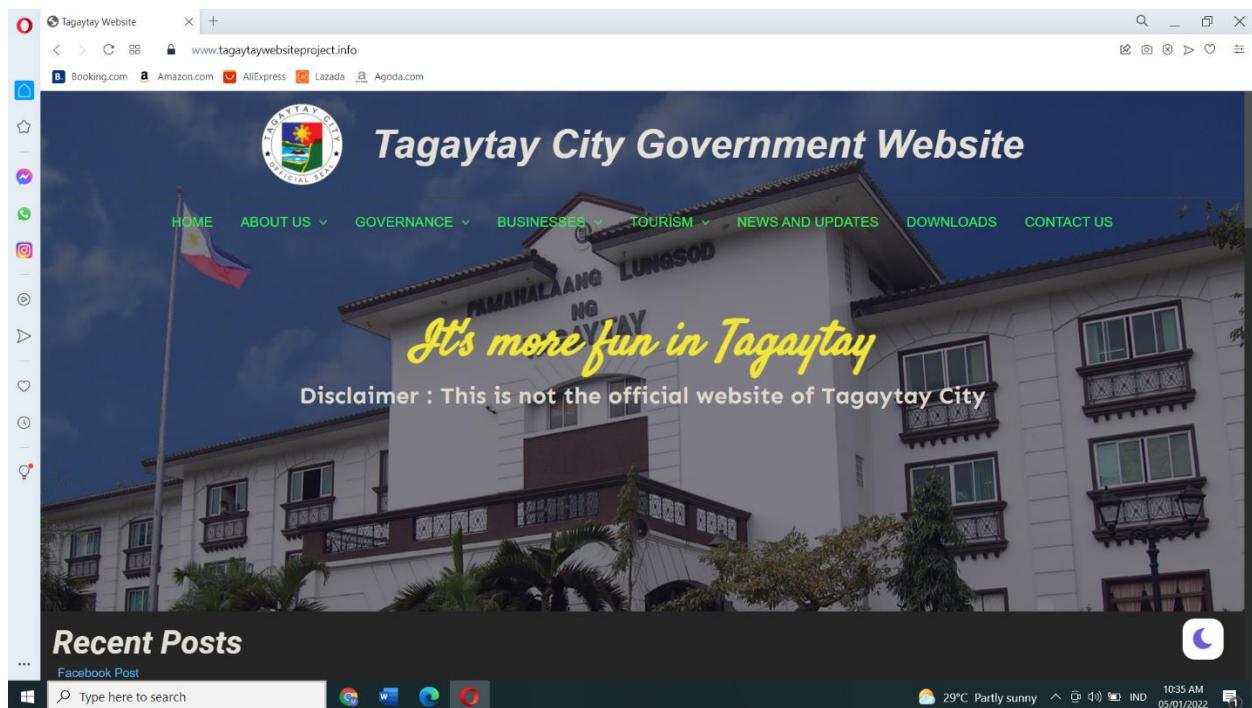
Viewer / User				
Module	Findings	Solution	Status	Date
<b>Content Management Module</b>				
View Updated Content	None	None	Working	12/21/2021
Download Files	None	None	Working	12/21/2021
Comment	Automatic Post	Subject for Approval	Working	12/21/2021

## PERFORMANCE TESTING

<b>Performance Testing</b>		
<b>Browser</b>	<b>Findings</b>	<b>Date</b>
Firefox	The website works well but takes time to load its content.	01/05/2022
Google Chrome	The website works very smooth and all the features functions well.	01/05/2022
Internet Explorer	The website works well.	01/05/2022
Microsoft Edge	The website has smaller view but it works properly and no loading issue.	01/05/2022
Opera Mini	Nothing has change with the appearance but takes time to load its content.	01/05/2022
Safari	The website works properly.	01/05/2022
UC Browser	There are changes with the appearance but the website works well.	01/05/2022
<b>Mobile Device</b>	<b>Findings</b>	<b>Date</b>
iPhone	The website is responsive and works properly.	01/05/2022
Vivo Android phone	The website is responsive and works properly.	01/05/2022
		01/05/2022



Website Homepage Using Firefox



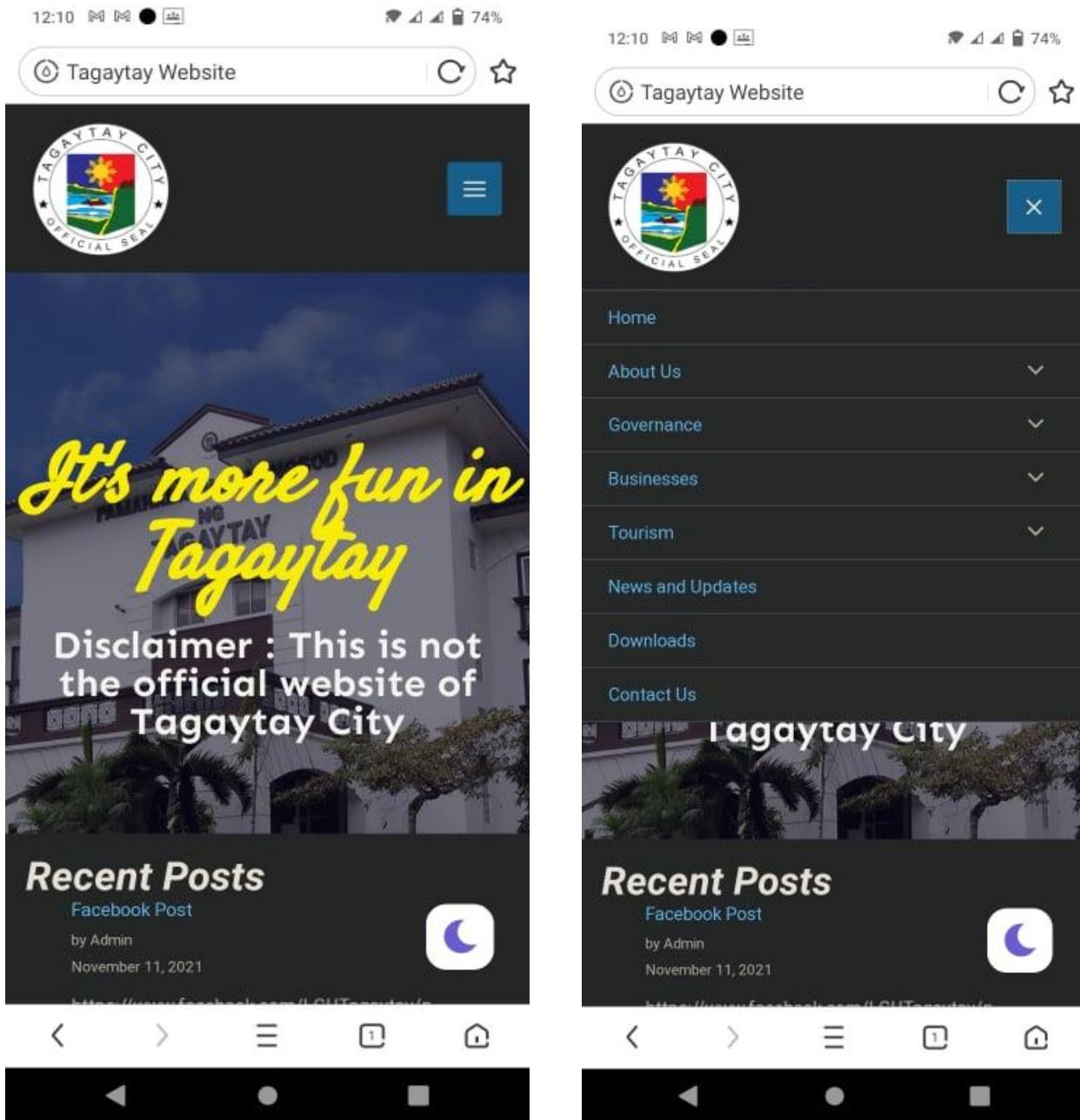
Website Homepage Using Opera



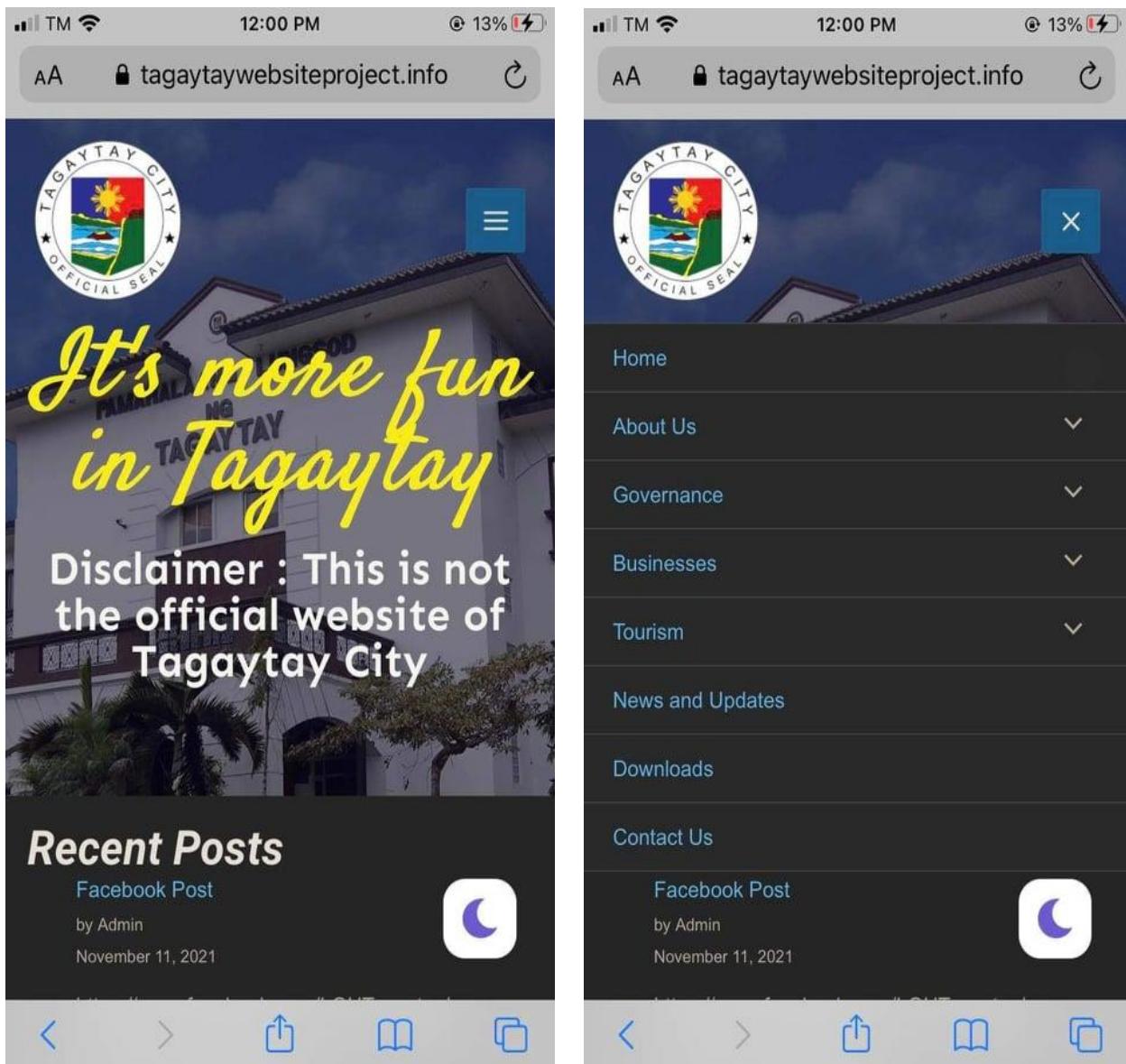
Website Homepage Using Google Chrome



Website Homepage Using Microsoft Edge



Website Mobile View Using UC Browser



Website Mobile View Using Safari

The image consists of two side-by-side screenshots of a mobile website. Both screenshots show a header with a house icon, a lock icon, the URL 'aytaywebsiteproject.info', a refresh button with the number '40', and a three-dot menu icon. The top of both screenshots features the official seal of Tagaytay City.

**Left Screenshot (Home Screen):**

- The background is a photograph of a building with the text 'PAMAHALAAN NG TAGAYTAY' visible on its facade.
- A large yellow banner across the middle contains the text 'It's more fun in Tagaytay'.
- Below the banner, a white box contains the text: 'Disclaimer : This is not the official website of Tagaytay City'.
- On the far right, there is a blue button with a white '≡' symbol.

**Right Screenshot (Menu Screen):**

- The background is the same photograph as the left screen.
- A blue button with a white 'X' symbol is located in the top right corner.
- The menu items listed are: Home, About Us, Governance, Businesses, Tourism, News and Updates, Downloads, and Contact Us.
- Each menu item has a small downward arrow to its right.
- On the far right, there is a blue button with a white '≡' symbol.

Website Mobile View Using Google Chrome