

CleanUP: LPUC Mobile Web App Cleaning Management System

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Abstract: Cleanliness encompasses personal hygiene, sanitation practices, and the cleanliness of our immediate surroundings. Proper personal hygiene practices, such as regular handwashing with soap and water, help prevent the spread of infectious diseases and reduce the risk of contamination. In educational settings, clean and well-maintained schools provide a conducive environment for effective learning and student engagement. CleanUp will contribute in terms of how people operate when it comes in cleaning classrooms and other facilities within the school's premises. This project will supplement Lyceum of the Philippines University-Cavite with a management system for faster and more convenient room cleaning on its premises. It also features an administration panel to assign cleaning task to the personnel and appoints events that need further cleaning preparation. The project was created and designed with Figma, flutter and Vue JS while Firebase database as its backbone. The applications are applicable for users who have smartphones Android platform, from 9.0 pie to the most recent 12.0 Snow Cone. The evaluation of the application was done with ten (10) IT experts, including the research adviser, and thirty-one (31) end users. The evaluation instruments used were MARS tools with criteria Functionality, Aesthetics, Engagement, and Information with an average mean of "3.75" and a Standard Deviation of "0.25" with the interpretation of "Highly Acceptable" on the overall results. ISO 25010 tools with criteria Functionality, Reliability, Usability, Compatibility, Maintainability, Portability, and Security with an average mean of "3.77" and a Standard Deviation of "0.27" with the interpretation of "Highly Acceptable" on the overall results. Based on the evaluation's findings, the application was considered effective enough to be used as a tool to oversee cleaning activities and operations using CleanUp by end users and IT specialists.

Keywords: Cleaning Management System, Management System, Mobile Web Application.

I. INTRODUCTION

Proper and good cleaning management improves the quality of the environment and offers good health that enables the community to live in harmless and neat surroundings. Every student, parent, and teacher desire a safe atmosphere as face-to-face classes slowly approach. Sanitation is essential to every school because having a clean environment gives everyone an incentive to learn. A messy and cluttered room puts students at risk and can cause severe sickness, anxiety, and stress. According to Brita Hammer (2018), the cleanliness of any classroom, building, or room can affect overall morale and encourage students to put effort into their studies. Cleanliness has a significant effect on the overall health of an institution (Cox, 2019).

As stated by Hussain et al. (2022), the progress of technology has allowed the creation of cleaning management software that can perform various cleaning procedures with minimal human input. The adaptation of technology in terms of providing a cleaner environment aims to enable the safeness of everyone to the highest level possible. Thus, the proposed project aims

to deliver the cleaning administrator and personnel with a system that will provide them with well-managed software to conduct cleaning procedures properly.

The “CleanUP: LPUC Cleaning and Sanitation Management Mobile App” project will supplement Lyceum of the Philippines University-Cavite with a management system for faster and more convenient room cleaning on its premises. On the other hand, cleaning personnel will accumulate a system wherein they can view the rooms through software telling whether a room is already cleaned or needs to be cleaned. It will also provide them with scheduling allowing them to achieve their work in the right place at the right time and, importantly, do the right task.

II. METHODOLOGY

This section depicts the design process model and object model that are used to illustrate the system's process flow.

A. Process Model

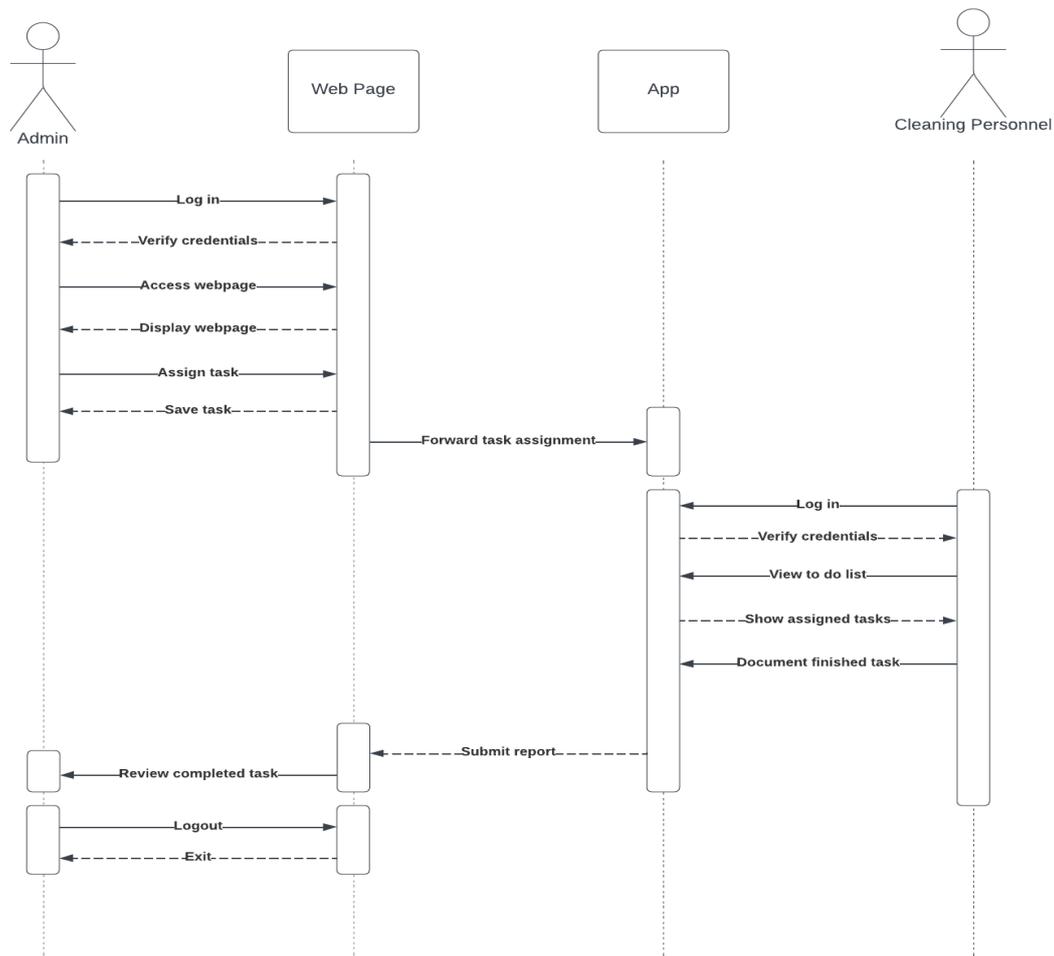


Fig 1. Sequence Diagram of Clean UP: LPUC Mobile Web App Cleaning Management System

Figure 1 illustrates the sequence diagram of the system showing the following interaction in the system which consists of login, items, assigned task, cleaning personnel and database, each single one of them is connected to each object that lets the user (admin) grant, manage, add, delete, and update the following data. All of them contain dimensions that store data from storing items into giving out tasks and granting access for the personnel.

After login credentials are verified, the user will gain access to the app. The user will be able to request a task from the admin while the admin will acknowledge the request sent by the user.

The researchers use the sequence diagram to show the interaction that the system will show. And to show the logic between the objects in the system, also to show and flush out the system's design

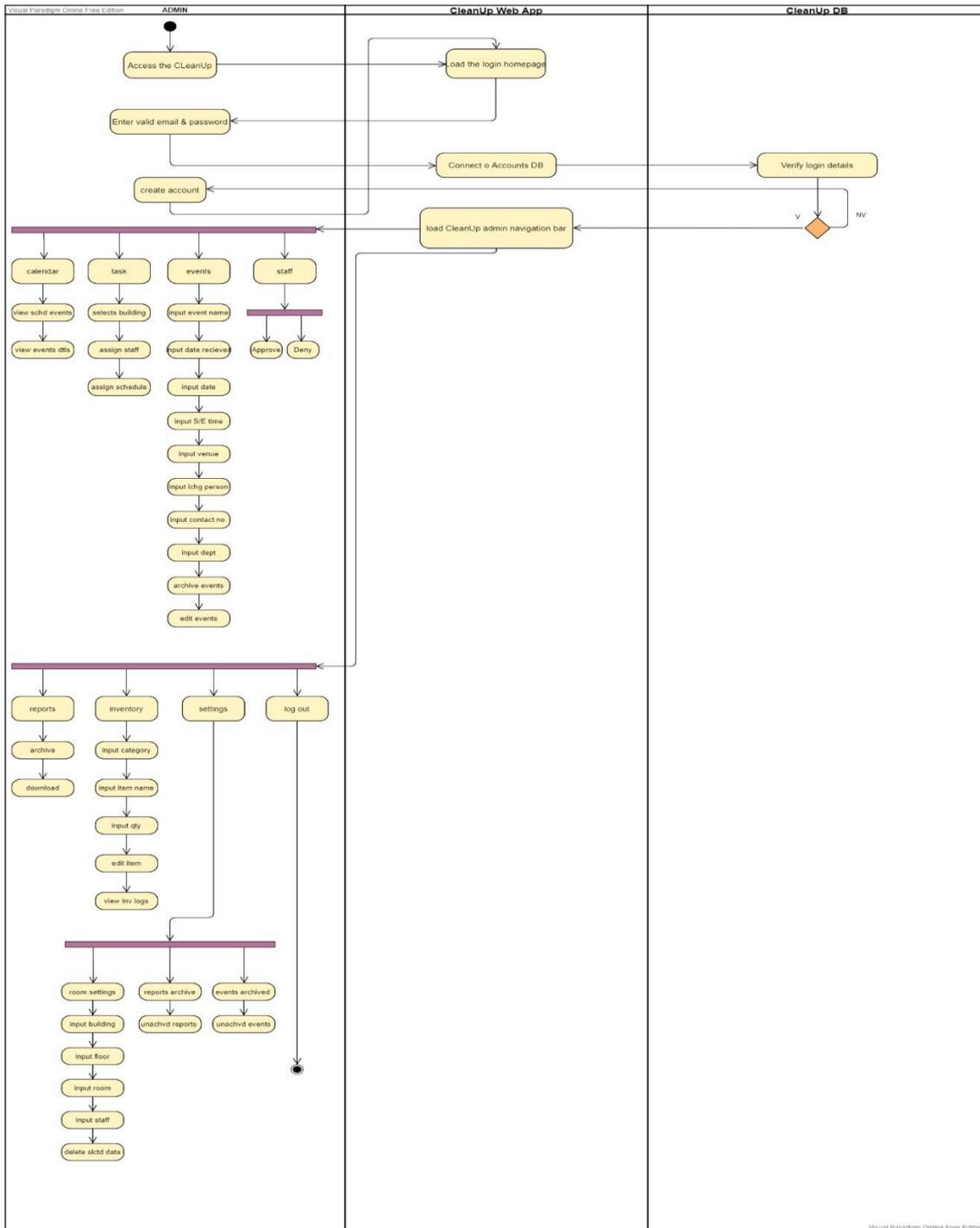


Fig 2. Activity Diagram for (CleanUp Application) “Clean UP: LPUC Mobile Web App Cleaning Management System

Figure 2 illustrates the activity diagram for CleanUp website, the system also has a login feature for the admin where every account is also stored in the database for verification purposes. Once the account is verified the system will now grant access to the user. Then the system will display the calendar section showing all the upcoming events that also need an ahead cleaning preparation. The details of the event are also displayed by the system where it shows all the data that partakes the event, data like the venue, the in-charge person, date, time duration etc. Tasks is in the nav bar section beside of calendar section, where task and other details is tended, in this section of the system it lets the user to assign cleaning personnel in a task that contain all of the details about the task, the day of the task, time, room no., time to start and time to end. For every room detail, it is also placed in a database where it can be used for monitoring and recording purposes. Next is the event section where details about the event is a must, details such as the name of the event, venue, in-charge person, and time

duration of the event. Every submitted event can still be edited, for example if the time of event must be changed then the admin can edit it and change to the new time of event. Every event is provided by a reference id in the database so that every data can be unique and does not merge. Next section is the staff, in this section the admin can grant and deny access for the user who registered an account for the website, this is for granting for personnel who are officially employed by the LPU. Next is the report section where every report of the cleaning personnel is shown, reports contain pictures as proof that the task is properly done. Pictures can be downloaded and can be in the database. Next is the inventory where the system provides all the necessary data about the specific item such as cleaning powders and cleaning chemicals. It also lets the user input a new item which user must type the item name and its quantity to be added in the system, every time that a cleaning personnel decreases or takes an item through the application, it automatically decreases in the inventory section of the admin’s website. Items can also be edited for restocking purposes and every new item in this section is also in the database where a reference and id are also shown for uniqueness of the data. Last section is the settings where room settings, archived reports and archived events are located. In the room settings, the system lets the admin add new rooms and buildings, edit rooms and buildings. This is when new rooms or buildings are constructed in the school. Archived reports and events contain all the reports and events that is archived by the admin for recording purposes and all of it can be unarchived by the admin

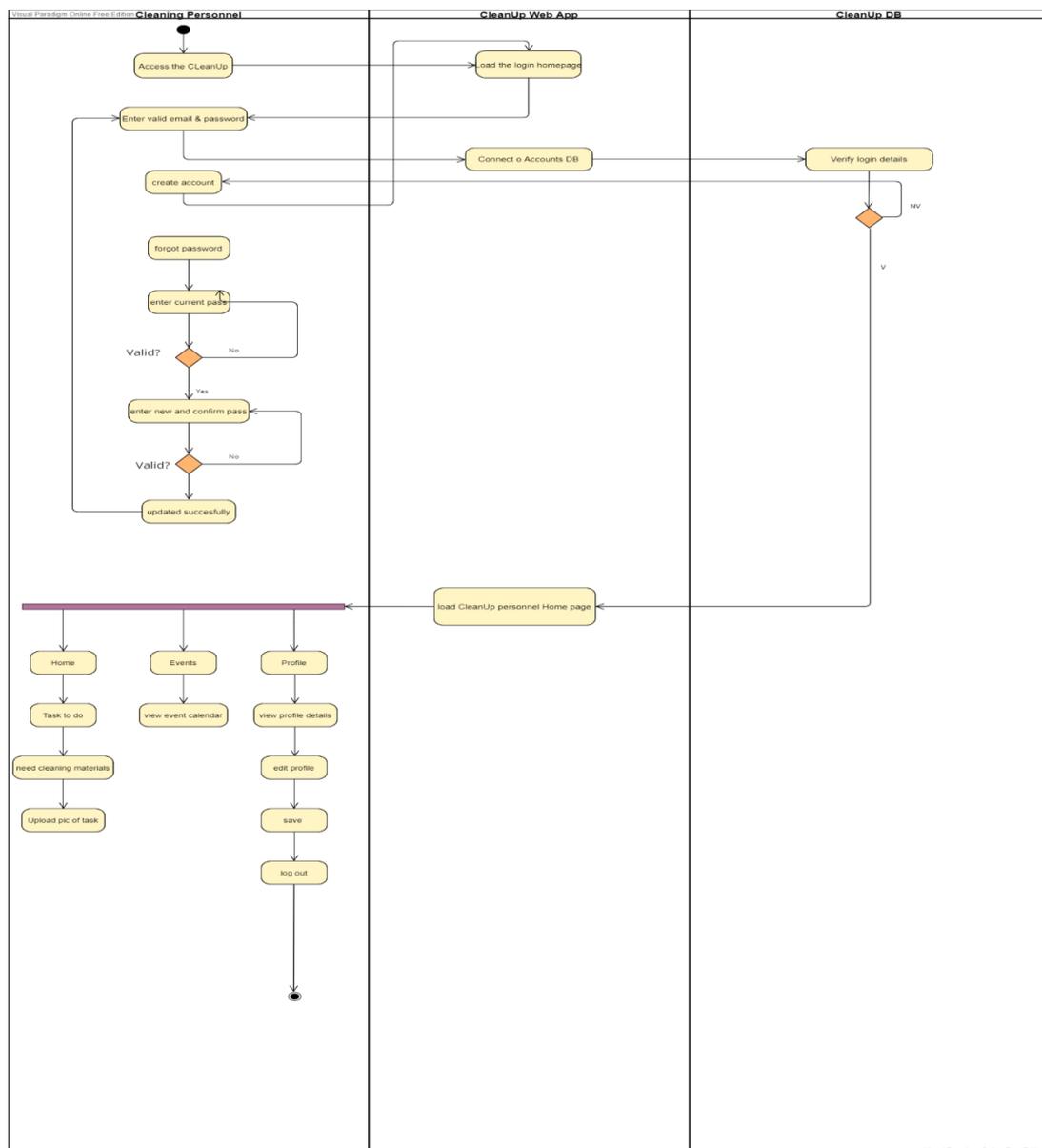


Fig 3. Activity Diagram for (CleanUp Application) “Clean UP: LPUC Mobile Web App Cleaning Management System

The illustration in Figure 3 shows that the systems design starts through accessing the application where the user must log in first before accessing the application. To have security on the website and to have account privacy the system requires login credentials so that it can provide a sense of privacy for the users. The system also has a register and forgot password features, where if the user doesn't have an account, then the system will let the user to register and input the registration requirements, another, is the forgot password where users can change their password in a situation where users lost or forgot their password. Every registered account is placed in a database where all data such as emails, items, buildings, rooms, and names are stored safely.

After logging in to the application, the user will be directed to the homepage where the system displays all the tasks for the user. Every task contains room details and items that are required for cleaning, those materials are inputted by the user that is automatically deducted on the website. This design or feature is to monitor the availability of each cleaning material. And to complete the task, a screenshot is included in the design so for proof purposes that someone cleaned the specific room. The application has a calendar section where users can view the upcoming events that require ahead cleaning. Lastly is the profile section of the application.

Last is the profile section where users can edit their profile such as the display picture, email, and names. Then in the upper right top is the logout button where can easily close the app once they're done with their tasks.

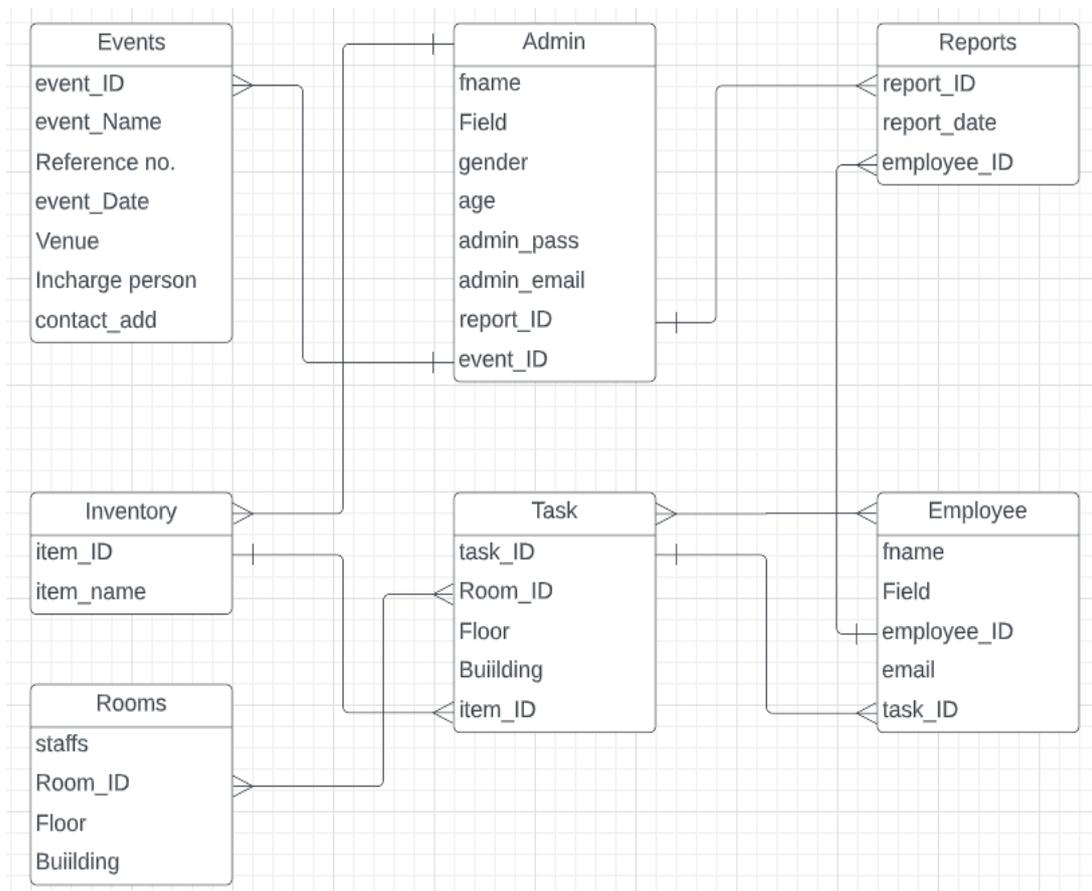


Fig 4. Entity Relationship Diagram of Clean UP: LPUC Mobile Web App Cleaning Management System

Figure 4 includes all the information that they need when they register to use the application. The information relevant to our database includes the employee's task and reports. Once the employee created their reports, all the reports will be monitored by the Admin. Once the employee has a task it will be connected to the Inventory section to inform the employee what item they should use in performing that specific task. In addition, once the employee has a task it will be also connected to the Rooms section to give the specific information to the employee that's been assigned by the Admin. The admin will be responsible for the Inventory and Events section. The Inventory will be monitored by the Admin through Item_ID and Item_name, Then the Events section will include the information that will be needed when they set an event that will also be monitored by the admin.

B. Sequential Model

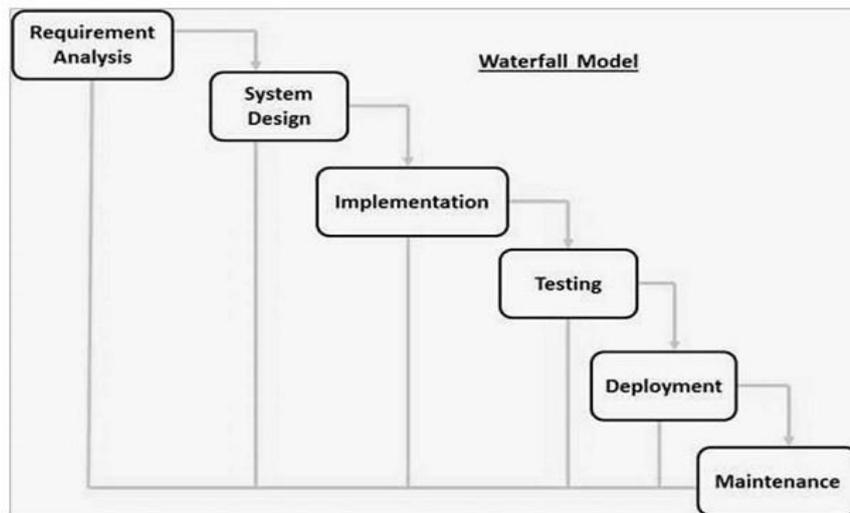


Fig 5. Iterative Waterfall Model of Clean UP: LPUC Mobile Web App Cleaning Management System

The illustration in Figure 5 shows the various tasks involved in this project. There are different phases in the Iterative Waterfall Model, and the first phase is the Requirement Analysis where the proponents plan the specific requirement for the website and mobile application that will be used in the project. The second phase is the System Design where the team has the following set of criteria in terms of setting up a direction in terms of designing. The team put-up a set of diagrams which includes the activity diagram and sequence diagram to achieve further understanding of the system and to assist the developmental process. The third phase is the Implementation where the system construction begins. The following designs and analysis that is planned during the design phase will be used as phase guidelines. The fourth phase is Testing, in this phase system testing starts in different test methods such as functional and compatibility tests once the coding is complete. The fifth phase is Deployment, where the system is deployed in a real-world environment once all requirements are met and accomplished. The sixth and last phase is the Maintenance, this phase is one of the most important phases because any issues and problems that might be encountered in the future must be tended immediately and be solved as soon as possible, updates are included in this phase where any adjustments must be tended for the user.

The researchers used a modified Waterfall Model for the project to be deeply analyzed and while the team works on each task individually, they discuss the phases that must be successfully completed and pay attention to even the smallest details. When problems are quickly identified during the review phase, the cycle repeats itself until all bugs and errors in the project have been fixed.

C. Test Plan

The test plan is used to produce documentation that describes how the tester will verify that the system works as intended. The researchers of the project can improve the system by identifying all the possible problems that the system might encounter. This section will provide all the testing processes used to make the system worthy to be used in real-world scenarios and to prove the systems performance, functionality, and compatibility.

D. Evaluation Plan

The project will be monitored closely and the effectiveness of the application and website that the user reviewed will be determined. The evaluation tools that the proponents will apply are the Mobile Application Rating Scale (MARS) and International Organization for Standardization, or ISO 25010. Thirty (31) end users including one admin can use this project, and ten (10) IT specialists were asked to carry out this activity. Mobile phones using the Android operating system 9.0 to 12.0 are the preferred device.

E. Evaluation Tool

The proponents will use the Mobile Application Rating Scale, or MARS and International Organization for Standardization, or ISO 25010, as the evaluation tool. It is the most frequently used tool when evaluating the project's quality and content.

The functionality of the application includes its overall presentation when using the MARS criteria. Aesthetics produces art through its application. the commitment to the project's quality. Finally, the application will provide elevated information. The criteria for ISO 25010 are functional suitability to represents how well, when used under certain circumstances, a product or system fulfills stated and implied needs, performance efficiency to determine how efficient it will be when it performs, compatibility to determine a product, system, or component can communicate with other products, systems, or components and/or carry out its necessary functions, usability to ensure that the system can be utilized by specific users to successfully, efficiently, and satisfactorily accomplish specific goals in a specific usage context, reliability to ensures that the product or component carries out specific tasks in specific circumstances for a predetermined amount of time, security to ensure that the system safeguards information and data so that individuals, products, or systems can access it to the extent necessary for their types and levels of authorization, maintainability to determine its effectiveness under circumstances and portability to determine the effectiveness and systems efficiency. For the appropriate app requirements, "Google Play", is where the application will be published.

Table 1. Scoring System

Numerical Rating	Equivalent
4	Highly Acceptable
3	Acceptable
2	Fairly Acceptable
1	Unacceptable

The table shows the scoring system of ISO 25010. It has four levels: 4 as "Highly Acceptable" being the highest, followed by 3 as "Acceptable", 2 as "Fairly Acceptable", and lastly 1 as "Unacceptable" being the lowest.

Statistical Treatment of Data.

The researchers used weighted mean and standard deviation for the analysis and statistical approach towards the gathered data. The data used in the evaluation are collected from a total of 41 respondents which are 30 end users, 1 adviser, and 10 IT experts.

Weighted Mean.

The mean is the arithmetic average of the scores given by test respondents. The formula used for the weighted mean is $\bar{x} = (\Sigma x) / n$, where Σx is the total sum of scores and n is the number of respondents

Standard Deviation.

A measurement of the data's deviation regarding the mean. A low standard deviation means data is grouped around the mean. A high standard deviation means data are more scattered.

Likert Scale.

The proponents used the Likert Scale to assess the degree to which responses to the questionnaires satisfied the requirements of the evaluation tool.

Table 2(a). Likert Scale of ISO25010

Numerical Equivalent	Description
3.51-4.00	Highly Acceptable
2.51-3.50	Acceptable
1.51-2.50	Fairly Acceptable
1.00-1.50	Unacceptable

Table 2 shows the level of acceptance of the website. "Highly Acceptable" is the highest level, ranging from 3.51 to 4.00 which means the respondents are pleased with the overall state of the website. "Acceptable" is ranging from 2.51 to 3.50, this shows that respondents are satisfied with the outcome but lacking in some respects. "Fairly Acceptable" is equivalent to 1.51 to 2.50, this means the respondents are not impressed with the outcome. "Unacceptable" is the lowest level, ranging from 1.00 to 1.50, which means it did not meet expectations at all.

III. RESULTS AND DISCUSSION

A. User Interface Design

User interface (UI) Design is the subject of how to design software actions and user- friendly components. It also covers information architecture, graphic design, and interface design.

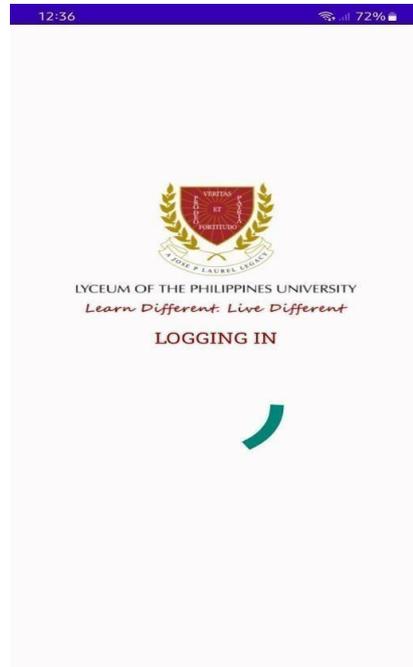


Fig 6. Flash Screen of the CleanUP: LPUC Cleaning and Sanitation Management Mobile App

Once the application is ready, the Flash Screen will appear. It indicated that the application was loading at the time. Additionally, it will show the app's icon before turning to the actual app.

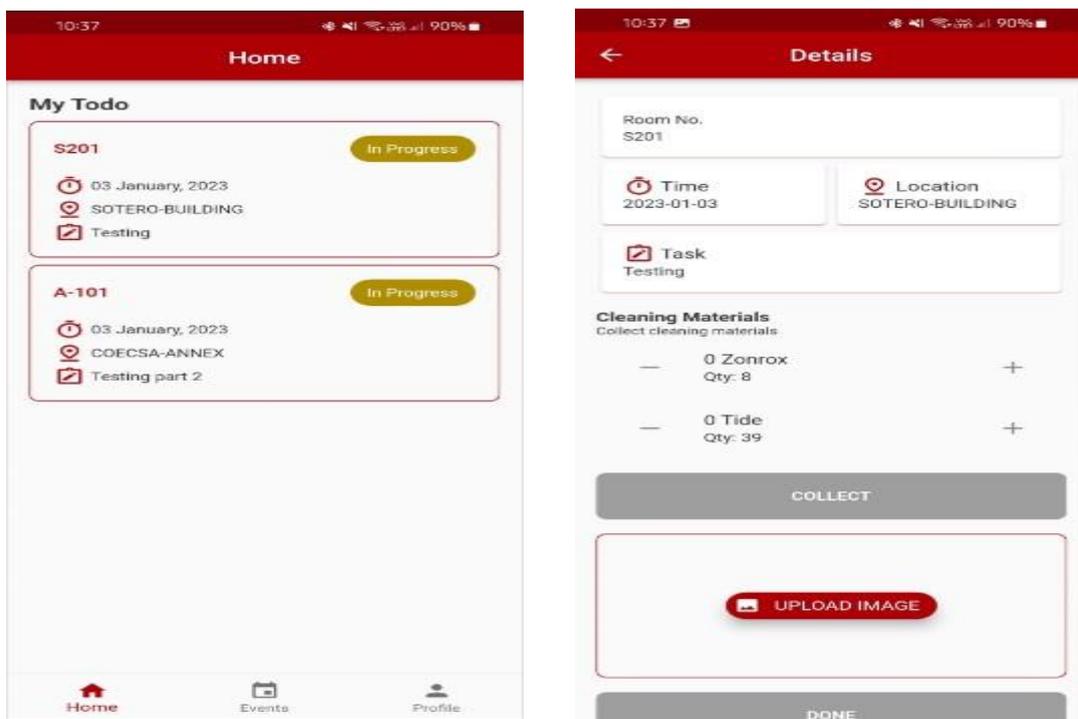


Fig 7. Home and task Window of the CleanUP: LPUC Cleaning and Sanitation Management Mobile App

The Home window provides users with a To-Do list that they can view. This feature lets the user track what they need to do in a day. It includes information on the room, time, and location of the task, as well as instructions on uploading an image after they have completed the job.



Fig 8. Events Window of the “CleanUP: LPUC Cleaning and Sanitation Management Mobile App

The Events window will display the dates and times the user is required to carry out a specific task. With this, they will have an easier time viewing the tasks scheduled for the day, the week, or month.



Fig 9. Profile Window of the CleanUP: LPUC Cleaning and Sanitation Management Mobile App

The Profile window displays the user's profile name, password, and email address. Its purpose is to log any personally identifiable information about the user. Within this window, it is possible to upload a profile picture for the user, making the user's account more personalized and noticeable to others.

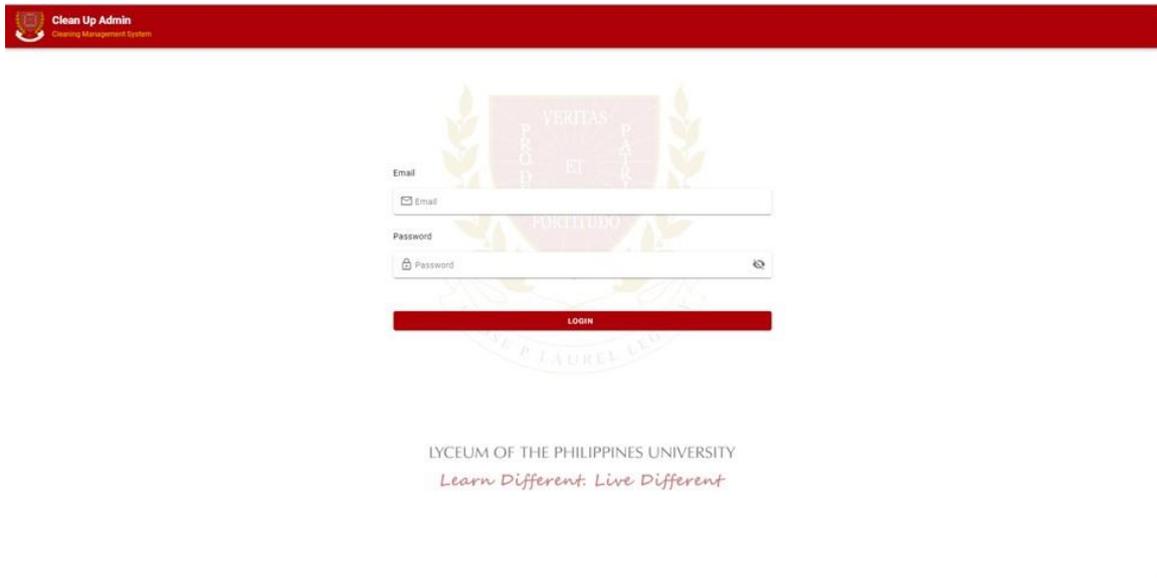


Fig 10. Login Window of the CleanUP: LPUC Cleaning and Sanitation Management Mobile App

This window presents the login page of CleanUp. The two text fields will ask for the admin email and password. After that, tap the login button to enter the website.

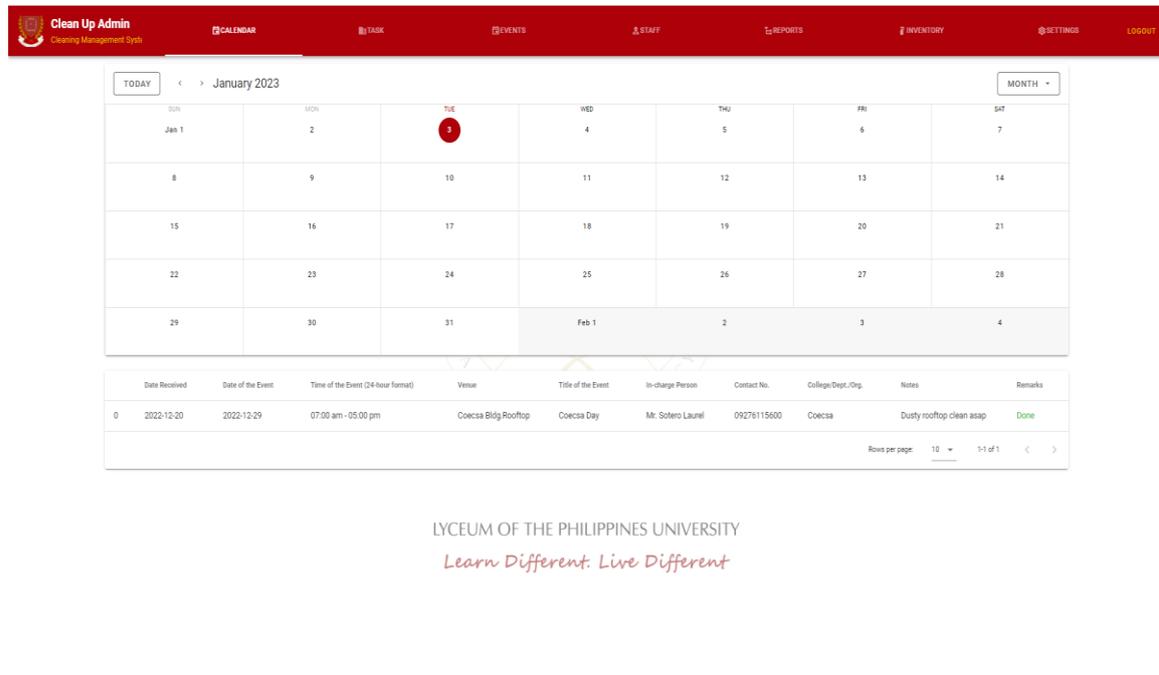


Fig 11. Calendar Window of the CleanUP: LPUC Cleaning and Sanitation Management Mobile App

The calendar displays the dates and times for the tasks. It also shows all task-related information, including the following: Date received, date task was entered into the system; Date of the event, the date on which the task must be completed; Venue, the location; Title of the event; Person in charge, cleaning personnel assigned to the task; Contact number, cell phone number of the person in charge; Name of the college, department, or organization to which the task was assigned; Remarks and notes left for personnel.

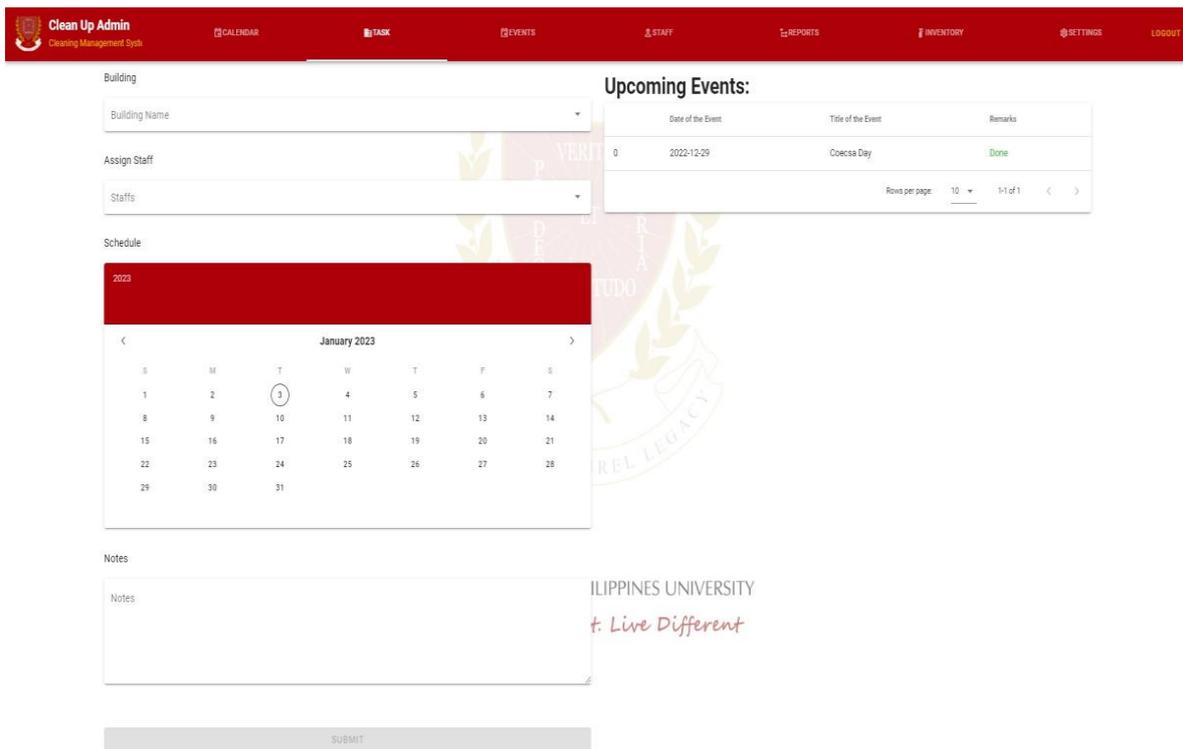


Fig 12. Rooms Window of the CleanUP: LPUC Cleaning and Sanitation Management Mobile App

This is where the administrator can assign staff, select a building, assign a schedule/task, and add notes for specific cleaning personnel before clicking the submit button.

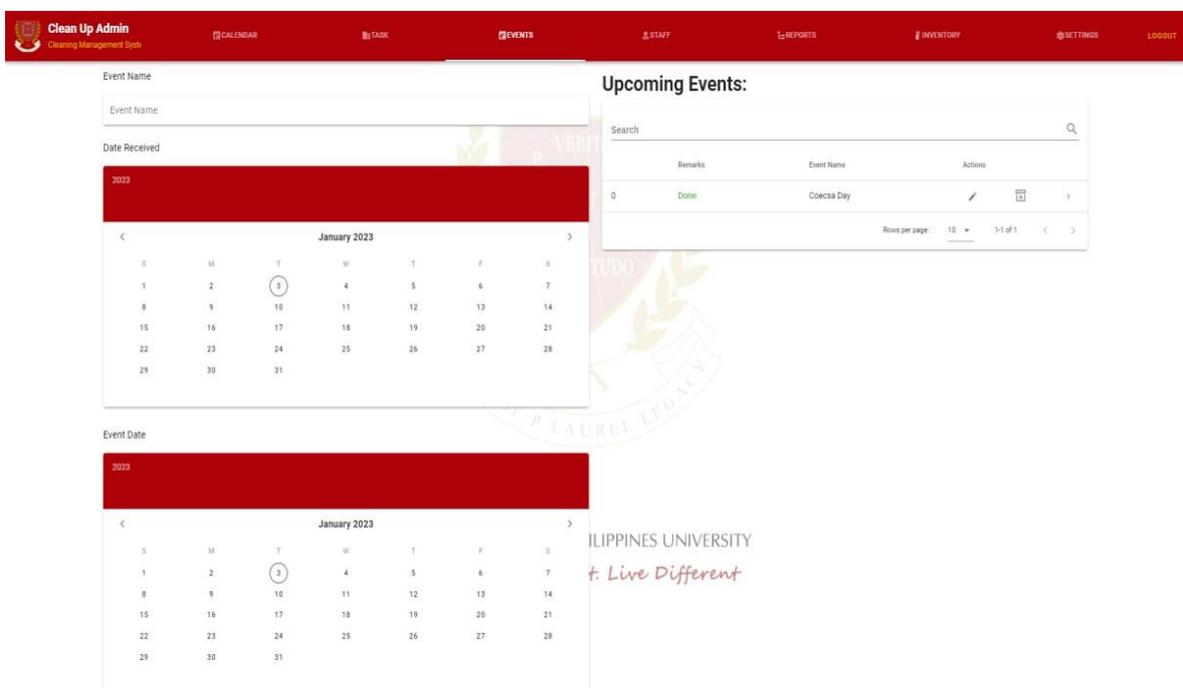


Fig 13. Events Window of the CleanUP: LPUC Cleaning and Sanitation Management Mobile App

Here is where the administrator can create an event. They will enter the event's name, choose the event date, add any notes, and then click the submit button. Admins can also delete events on the right side of the screen by clicking the "Delete Event" button.

	Full Name	Email	Verified	Actions
0	Raze Alamo	raze3@gmail.com	✓	DENY
1	apollo huerto	apollohuerto@gmail.com	✓	DENY
2	Rashed Aagsalud	rashedagsalud26@yahoo.com	✓	DENY
3	Raven	Raven04@gmail.com	✗	APPROVE
4	Kyle SeFanis	kyledennisreginaldo299@gmail.com	✓	DENY
5	Ringo Alamo	ringoalamo3@gmail.com	✓	DENY
6	Apple	applealamo03@gmail.com	✓	DENY
7	Jepoy Dizon	jepoy@gmail.com	✓	DENY
8	Jericho Giongco	giongco032000@gmail.com	✓	DENY
9	Kit Franz	kit@gmail.com	✗	APPROVE

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<https://cleanup-lyceum.web.app/calendar>

Fig 14. Staff Window of the CleanUP: LPUC Cleaning and Sanitation Management Mobile App

The end user's data can be approved, removed from access, or deleted from this section by the administrator.

	Building Name	Room No.	Floor	Notes	Staffs	Actions
0	SOTERO-BUILDING	S201	2ND-FLOOR	dasdas	1 Staff/s	🗑️ >
1	COECSA-ANNEX	A-101	1ST	asd	1 Staff/s	🗑️ >
4	SOTERO-BUILDING	S201	2ND-FLOOR	testing	2 Staff/s	🗑️ >
6	SOTERO-BUILDING	S201	2ND-FLOOR	chocolate stain on floor	1 Staff/s	🗑️ >
7	COECSA-ANNEX	A-101	1ST	Clean ASAP	1 Staff/s	🗑️ >
8	COECSA-ANNEX	A-101	1ST	Water spillage due to AC problem	1 Staff/s	🗑️ >



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Fig 15. Reports Window of the CleanUP: LPUC Cleaning and Sanitation Management Mobile App

Within this section, the admin will have the ability to view the reports generated by all of the end users. They can manage all of the reports and delete them.

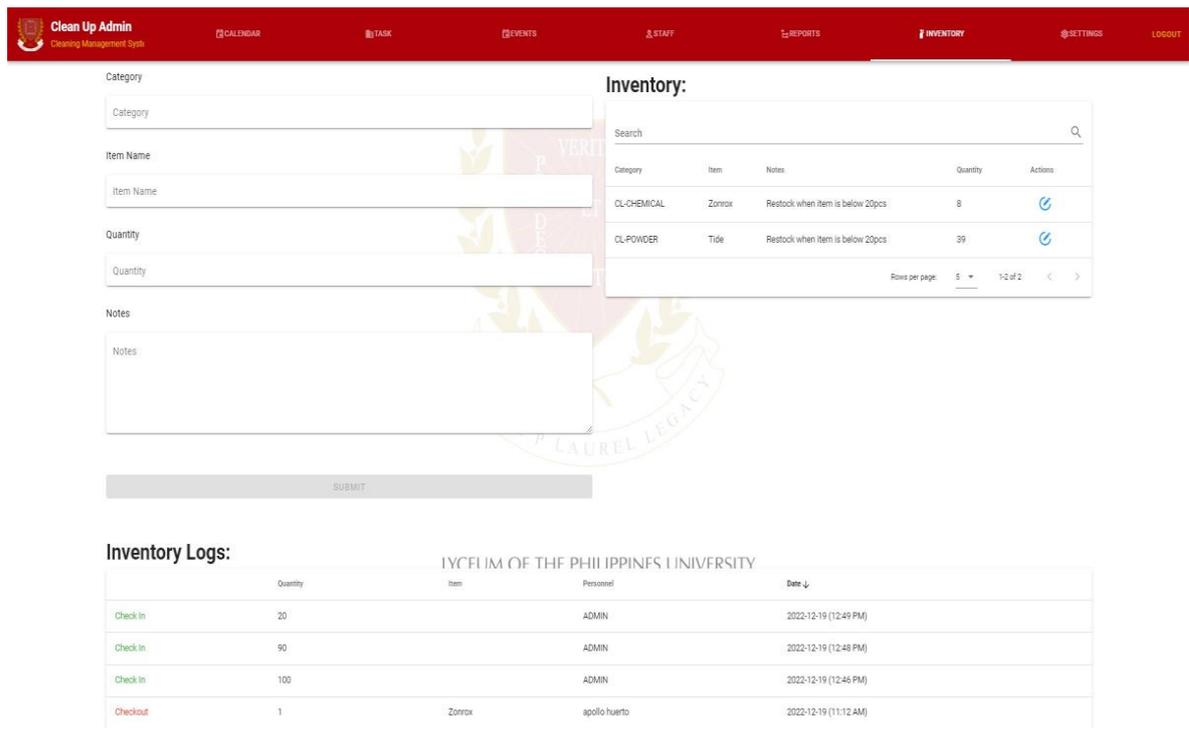


Fig 16. Inventory Window of the CleanUP: LPUC Cleaning and Sanitation Management Mobile App

Here is where the administrator will enter the item's id number, name, quantity, and any notes on the item. Additionally, the administrator can increase or decrease the amount of an item in the inventory. Another function is that the administrator can delete the entire inventory.

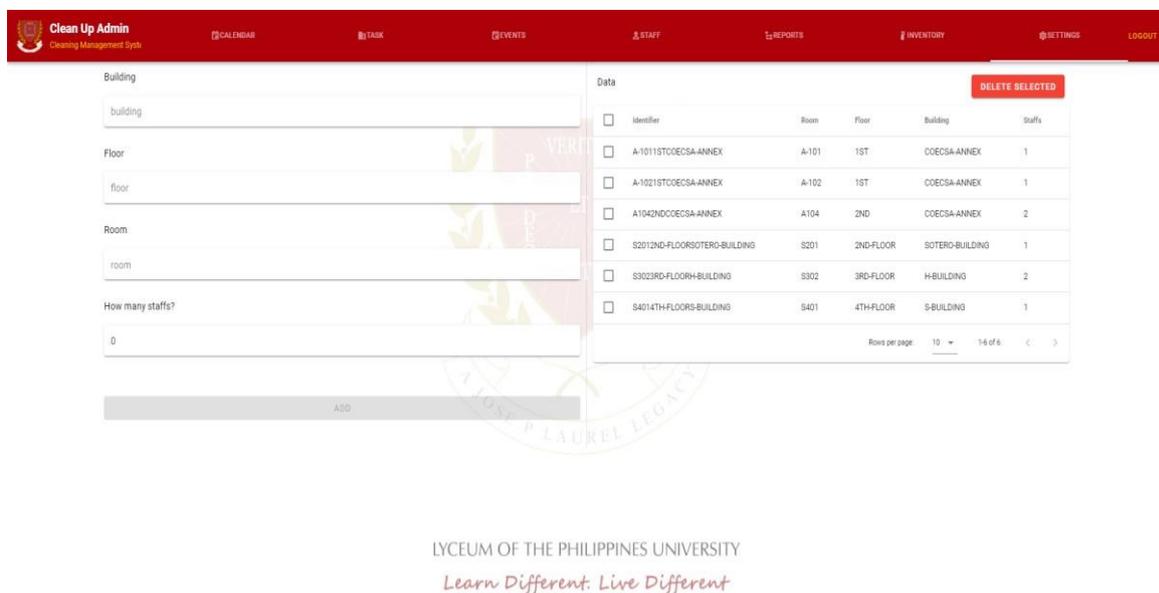


Fig 17. Room Settings Window of the CleanUP: LPUC Cleaning and Sanitation Management Mobile App

The Room Settings Window will display the name of the building, as well as the floor and room number. Admin can also delete the room you create by selecting it.



Fig 18. Archived reports Window of the Clean Up: Lyceum of the Philippines University Cavite Room Sanitation Web-based Portal

The Archived reports Window will display all of the archived reports.

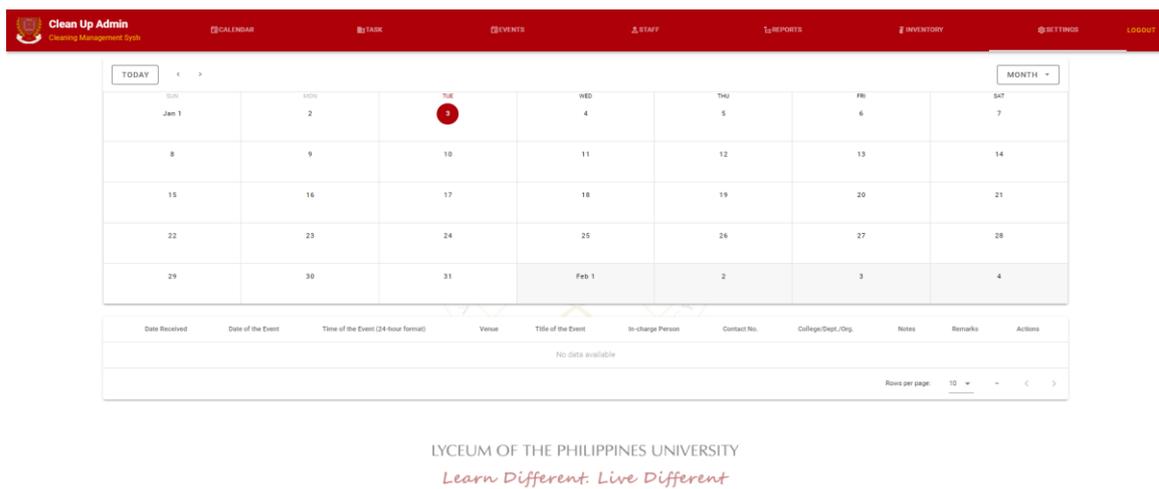


Fig 19. Archived Events Window of the CleanUP: LPUC Cleaning and Sanitation Management Mobile App

The Archived Events Window will display all of the archived events that are already marked as finished by the system.

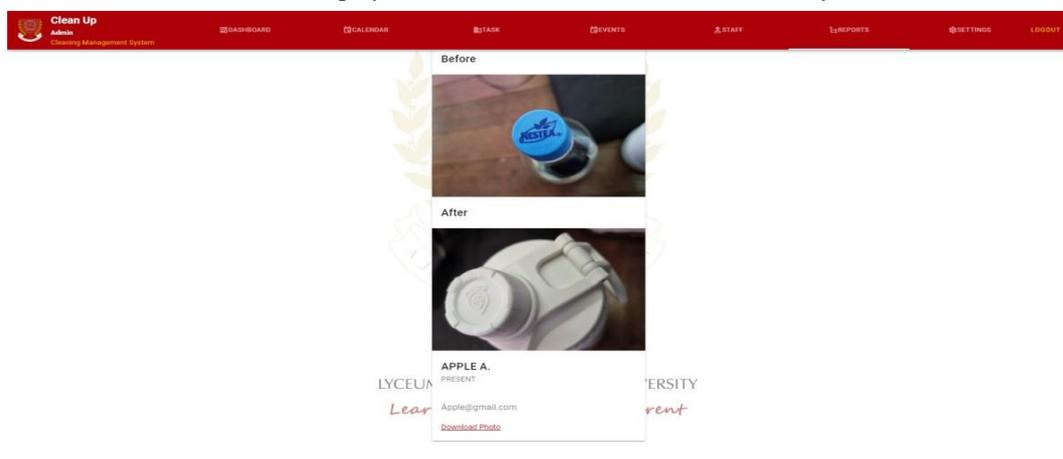


Fig 20. Before and after Window of the CleanUP: LPUC Cleaning and Sanitation Management Mobile App

The before and after Window will display the photos that indicates the before and after status of the task, as proof that the task is tended and accomplished.

B. Testing Results

The testing process was carried out to check that the website and application were in proper order. The two tests that were employed were functionality and compatibility. Functionality criteria assessed whether an application feature worked and met its requirements. The compatibility criteria assessed if the application is compatible with Android OS versions starting from 0.9 to 12. The test phase was successfully completed, though it did not meet all the criteria since certain areas failed; nonetheless, the developers will later solve all of these issues before the evaluation stage begins.

Table 2(b). Test Result using Functionality Test

Test Respondent	Pass	Fail	Test Criteria	Percentage
IT-Expert 1	82	0	82	100%
IT-Expert 2	82	0	82	100%
IT-Expert 3	82	0	82	100%
IT-Expert 4	82	0	82	100%
IT-Expert 5	82	0	82	100%
IT-Expert 6	82	0	82	100%
IT-Expert 7	82	0	82	100%
IT-Expert 8	82	0	82	100%
IT-Expert 9	82	0	82	100%
IT-Expert 10	82	0	82	100%

Ten (10) IT experts partake in the functionality test. One hundred sixty-five (165) test cases have been conducted on the instrument. IT experts passed with a perfect score of 165 out of 165.

Table 2(c). Test Result using Functionality Test

Test Respondent	Pass	Fail	Test Criteria	Percentage
IT-Expert 1	7	0	7	100%
IT-Expert 2	7	0	7	100%
IT-Expert 3	7	0	7	100%
IT-Expert 4	7	0	7	100%
IT-Expert 5	7	0	7	100%
IT-Expert 6	7	0	7	100%
IT-Expert 7	7	0	7	100%
IT-Expert 8	7	0	7	100%
IT-Expert 9	7	0	7	100%
IT-Expert 10	7	0	7	100%

All test participants, ten (10) IT experts passed the compatibility test. It was proven that the capability of the application can run in various Android OS versions, starting with version 9.0 Pie and going up to version 12, as well as the screen resolution required, which is up to 1080x2340 resolution.

C. Evaluation Results

The evaluation process checked the website and application appropriateness for the user. The Mobile Application Rating Scale (MARS) has Thirty-one (31) end user and the International Organization for Standardization (ISO) 25010 were utilized in the evaluation with Ten (10) end users and ten (10) IT experts actively participated.

Table 3. MARS Evaluation Result from Thirty-one (31) End-users

Criteria	Mean	SD	Interpretation
Engagement	3.71	0.22	Highly Acceptable
Functionality	3.68	0.22	Highly Acceptable
Aesthetics	3.77	0.26	Highly Acceptable
Information	3.72	0.22	Highly Acceptable
Average Mean and SD	3.72	0.23	Highly Acceptable

Table 3 displays the evaluation for MARS, the Engagement has “3.71” mean and “0.22” SD, Functionality has “3.68” mean and “0.22” SD, Aesthetics has “3.77” mean and “0.26” SD, and Information has “3.72” mean and “0.22” SD. It represents the total outcomes of thirty-one end users with an average mean of 3.72 and SD of 0.23 and the Interpretation is "Highly Acceptable". Aesthetics has the highest rank since the application shows an excellent appearance. Information ranks second because of the given information that the application has. Engagement is ranked 3rd because the application is user-friendly and easy to understand. Lastly, Functionality has the lowest rank of them all because of lack of some features

Table 4. ISO 25010 Evaluation Result from Ten (10) End-users

Criteria	Mean	SD	Interpretation
Functionality	3.80	0.32	Highly Acceptable
Compatibility	3.85	0.24	Acceptable
Usability	3.83	0.21	Highly Acceptable
Reliability	3.75	0.29	Highly Acceptable
Security	3.7	0.33	Highly Acceptable
Maintainability	3.74	0.23	Highly Acceptable
Portability	3.6	0.41	Highly Acceptable
Average Mean and SD	3.75	0.29	Highly Acceptable

Table 4 shows the evaluation for ISO 25010, the Compatibility has “3.85” mean and “0.24” SD, Usability has “3.83” mean and “0.21” SD, Functionality has “3.80” mean and “0.32”, Reliability has “3.75” mean and “0.29” SD, Maintainability has “3.74” mean and “0.23” SD, Security has “3.7” mean and “0.33” SD, Portability has “3.6” mean and “0.41” SD. It represents the total outcomes of ten end users with an average mean of 3.75 and SD of 0.29 and the Interpretation is "Highly Acceptable".

Compatibility has the highest rank because the application and website can be accessible within 4 different types of android versions. Usability ranks second because of its capability to be used by everyone, Functionality ranks third since most of the needed functions are met in regard to assigning, appointing, managing, and completing the cleaning tasks. Reliability ranks fourth because of outdated device specifications. Maintainability ranks fifth due to its efficiency in terms of timesaving, especially in times of assigning tasks. Security ranks sixth because of its authentication capabilities, Portability ranks seven because both the application and the website can be used anywhere since everyone has a mobile phone and as for the admin website, a desktop computer is provided

Table 5. MARS Evaluation Result from Ten (10) IT Experts

Criteria	Mean	SD	Interpretation
Engagement	3.82	0.26	Highly Acceptable
Functionality	3.9	0.14	Highly Acceptable
Aesthetics	3.82	0.36	Highly Acceptable
Information	3.78	0.42	Highly Acceptable
Average Mean and SD	3.83	0.29	Highly Acceptable

In table 5, which is the evaluation for MARS results from ten (10) IT experts, the Engagement has “3.82” mean and “0.26” SD, Functionality has “3.9” mean and “0.14” SD, Aesthetics has “3.82” mean and “0.36” SD, and Information has “3.78” mean and “0.42” SD. It represents the total outcomes of ten (10) IT experts with an average mean of 3.83 and SD of 0.29 and the Interpretation is "Highly Acceptable".

Functionality has the highest rank since it provides the users features that help them ease their work. Engagement ranks second because it gives interest to the users and has content that they can interact with. Aesthetics is ranked 3rd because the UI is aesthetically pleasing but not eye-catching. Lastly, Information ranked 4th, which is the lowest rank, like the outcome from end-users, mainly because the application lacks information

Table 6. ISO 25010 Evaluation Result from Ten (10) IT Experts

Criteria	Mean	SD	Interpretation
Functionality	3.72	0.36	Highly Acceptable
Compatibility	3.75	0.35	Highly Acceptable
Usability	3.8	0.23	Highly Acceptable
Reliability	3.75	0.31	Highly Acceptable
Security	3.72	0.33	Highly Acceptable
Maintainability	3.8	0.21	Highly Acceptable
Portability	3.77	0.35	Highly Acceptable
Average Mean and SD	3.76	0.31	Highly Acceptable

In table 6, which is the evaluation for ISO 25010 results from ten (10) IT experts, the Compatibility has “3.84” mean and “0.27” SD, Portability has “3.82” mean and “0.33” SD, Functionality has “3.80” mean and “0.15”, Maintainability has “3.77” mean and “0.20” SD, Usability has “3.76” mean and “0.32” SD, Security has “3.75” mean and “0.20” SD, Reliability has “3.73” mean and “0.29” SD. It represents the total outcomes of ten (10) IT experts with an average mean of 3.78 and SD of 0.25 and the Interpretation is "Highly Acceptable".

Usability comes first because of its ability to operate in various devices and OS. Maintainability ranks second due its stability. Portability ranks third because of its operational flexibility. Reliability ranks fourth because of its accuracy in terms of task and time management. Compatibility ranks fifth because of its suitability, Functionality ranks sixth because of its balance outcomes, Security ranks seventh due to its moderate dependability

IV. CONCLUSION

The main goal of this project was to create a website and mobile application for assigning, finishing, and appointing cleaning duties. To achieve that goal, certain preconditioning requirements had to be met, such as creating a cleaning management system that would provide details about the classrooms and other facilities at the school. A report and screenshots feature will also assist in determining whether the task is being properly attended to. To provide a reliable cleaning management system, it was necessary to create an application and a website that would provide users with benefits such as management over the entire cleaning assignment and process and the ability to conveniently know their task for the day with the aid of the application and the website. It will be useful for the cleaning personnel since it can save them a lot of time, to know what tasks are assigned to them for the day, compared to the manual process of checking in terms of what is assigned to them.

The application was tested based on the functionality and compatibility test cases, which were tested by IT experts. The modules and buttons are working as they should be but not all criteria meet the IT expert’s expectations. The application and website received 100% from one of the IT experts and an 85% passing score from the technical adviser and the remaining IT experts on the functionality test. The compatibility test passed with a 100% score from the technical adviser and ten (10) IT experts. The application runs on Android versions from 9.0 Pie to Android version 12.

The evaluation of the application was done with ten (10) IT experts, including the research adviser, and thirty-one (31) end users. The evaluation instruments used were MARS tools with criteria Functionality, Aesthetics, Engagement, and Information with an average mean of "3.75" and a Standard Deviation of "0.25" with the interpretation of "Highly

Acceptable" on the overall results. ISO 25010 tools with criteria Functionality, Reliability, Usability, Compatibility, Maintainability, Portability, and Security with an average mean of "3.77" and a Standard Deviation of "0.27" with the interpretation of "Highly Acceptable" on the overall results.

Based on the evaluation's findings, the application was considered effective enough to be used as a tool to oversee cleaning activities and operations using CleanUp by end users and IT specialists.

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