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**THE IMPLEMENTATION OF SOLANA COUNTRY HOMES  
MANAGEMENT PORTAL**

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# CHAPTER 1

## INTRODUCTION

### **Background of the study**

Home is the starting place of love, hope and dreams. The magic thing about home is that it feels good to leave, and it feels even better to come back. Home is where love resides, camaraderie, memories are created, friends always belong, and laughter never ends. Imagine a community which prioritizes these concepts, what a wonderful place to live in.

Solana Country Homes Homeowner's Association developed by Solana Land Development Inc is located at Brgy. San Isidro, Bacolor, Pampanga. It offers amenities such; clubhouse, swimming pool, basketball court and playground to their 529 residents. Additionally, the association provides; garbage collection, security guards, maintenance, and gardening services for which includes to the monthly payments.

The association consist 5 Board of Directors and 10 Committee Heads who ensures that the objectives of Solana Country Homes are being met. Therefore, the residents of the HOA may sleep easier and more comfortably at night knowing that they are protected because security is one of a neighborhood's strongest attributes. Children can play outside in their neighborhood or in the clubhouse on a daily basis without worrying about a plethora of unpleasant things on their property ownership.

However, the homeowner's association frequently encounters problems regarding on notifying their homeowners due to lack of manpower. There are instances wherein numerous homeowners do not receive any letter from the admin office which they are supposed to such as; garbage collection, billing notice, delinquent letter and complaint notice.

Moreover, specific cases, according to the secretary of Solana Country Homes' Office; a certain homeowner keeps on complaining why his/her trash were not being collected, thus he/she does not receive any notice from the office regarding his/her payment on garbage collection fee. In addition, this case happens frequently wherein homeowners were already declared delinquent on the system, but they did not receive delinquent notice from the office.

Relatively, this another homeowner was consistent on his/her monthly payment, but the admin office considered him/her delinquent as well, because the admin office claimed they did not receive any payments. After a long discussion, the homeowner presented his/her receipts to the admin office, later, the case was settled. Thinking about the time and effort spent of the homeowners instead of having quality time to their family. These cases strongly proved that the method of information dissemination in Solana Country Homes is ineffective and alarming.

Consequently, the homeowners did not only have wasted time, but their rights were also violated by being labeled “*delinquent*” and neglected to services of the association because of being unnotified properly. According to Republic Act No. 9904 Section 9 “*Delinquent Member*”, The bylaws shall provide for guidelines and procedures in determining who is a delinquent member, or a member not in good standing, and to prescribe the administrative sanctions to be imposed on such member. The right to due process shall be observed in cases where administrative sanctions are imposed on a delinquent member.

In relation, Section 17 “*Financial and other record*”, (a) the association shall keep financial records sufficiently detailed to enable the association to fully declare to each member the true statement of its status. Each association’s managing agent shall turn over all original books and records to the association immediately upon termination of the management relationship with the association, or upon such other demand as is made by the board. (b) All records involving the affairs of the association shall be available for examination by all owners, holders of mortgages on the lots, and their respective authorized agents upon reasonable advanced notice, during normal working hours at the office of the association: *Provided*, that holders of mortgages on lots may have access to the information about the property held in mortgage with the written consent of the registered owner. Further, Section 7 “*Rights of a Member*”, (a) to avail of and enjoy all basic community services and the use of common areas and facilities; (b) to inspect association books and records during office hours and to be provided upon request with annual reports, including financial statements; (f) to enjoy all other rights as may be provided for in the association bylaws.

It is essential for HOA boards to maintain good relationships with their residents in order to effectively manage their communities and ensure everyone’s needs are being met properly. Establishing clear lines of communication between board members and homeowners will help ensure that all parties are kept informed and involved in the decision-making process for their

neighborhood's operations. Mitchell Krauss (2023), *"As an HOA board, staying connected to your community is important. Good communication is essential for maintaining a sense of unity and trust among owners. If one of your 2023 resolutions was to grow your community members, communication is critical"*. Communication is an aspect of community management that is often overlooked — and HOA communication issues can easily become a problem if not realized soon enough.

Conversely, given the fact that Solana Country Homes Homeowners Association has over 529 population and considering the previous cases they had, still, they utilize paper letter sending method to notify their homeowners. According to the pre-survey conducted by the researchers, the existing method of the association lacks on efficiency, reliability, convenience and not environmentally friendly. If this method will not change or improve, there will be more upcoming unwanted problems in the association which will cause delays and misunderstanding between the admin office and homeowners' end.

There are technological advancements being utilized worldwide. Therefore, now is the time to implement something new to the Solana Country Homes Association which might be their first experience. The researchers will provide a homeowner's management portal wherein homeowners and admin office staff will have a digital platform as a medium of communication, transaction, and management system.

The management portal will help the admin office and homeowners solving their problems regarding to sending and receiving notification. It will be an interactive platform which they can make a transaction without going into the admin office, save much time and effort.

Further, the system will provide; reliability, efficiency, accessibility and convenience, accuracy, and eco-friendly implementation which the homeowners association is currently needing regarding to their information dissemination and transaction system.

## **Statement of the Problem**

### **General Problem**

The existing system is paper-based which lacks on efficiency, reliability, convenience and eco-friendly matters. Moreover, since they are in letters, the level of security and confidentiality are poorly being managed and practice improperly.

This study aims to solve the Solana Country Homes Association's problem regarding on their existing method of information dissemination and transaction by providing a homeowner management portal.

### **Specific Problem**

- Homeowners are required to visit the admin office frequently, which is time consuming. This will not only cause convenience to the homeowners but for the admin office as well. Instead of doing their work, they are required to accommodate the homeowners physically.
- The homeowners do not have a convenient and efficient way of submitting suggestions, complaints, and proof of payments.
- The association do not have real-time management system.
- The admin office lacks and efficient and effective way of notifying the homeowners.
- The admin office having a hard time keeping track of the homeowners' proof of payments, complaints, and suggestions.

All these current issues are preventing the association from providing the optimal services to their homeowners and maintaining a well-functioning community.

## **Objectives of the study**

The main goal of this study is to suggest and create an interactive management site that answers the issues the Solana Country Homes Association has with its current mode of communication and transaction. As a result, the organization will reduce communication problems between homeowners and the administrative office.

The study intends to specifically validate the issues the homeowner's association is facing, which prompted the researchers to develop an interactive platform for communication between homeowners and the association's administrative office. The following are the specific objectives and modules of the Solana Country Homes Management Portal:

1. To develop an admin module that would:
  - a. Manage user accounts, user restrictions and database back-ups.
  - b. Manage and monitor homeowners' status (personal information, payment dues and delinquency reports).
    - i. Verification of homeowners' names contact numbers, and addresses (house number).
    - ii. Tallying of payment dates.
    - iii. Verification of homeowners' delinquency status.
  - c. Enhance sorting method such:
    - i. Arrange homeowner's name alphabetically order.
    - ii. Arrange the homeowners' addresses into per block.
    - iii. Disseminating announcement per block.
  - d. Process homeowner's payments such as:
    - i. Receiving proof of payments from the homeowners.
    - ii. Verifying the proof and updating the payment status of homeowners.
  - e. Generate inventory reports such as:
    - i. Total number of homeowners.
    - ii. Total number of homeowners per block
    - iii. Total number of homeowners who are due.

- iv. Total number of homeowners who are unpaid.
  - v. Total number of homeowners who are delinquent.
- f. Access to message homeowners such as:
  - i. Replying to the homeowners' concerns.
  - ii. Sending billing notice (amenities and services)
  - iii. Sending an announcement (payment dues and regarding delinquency).
  - iv. Private transactions (proof of payments, complaint reports and
  - v. Conversation and verification about delinquency report.
- 2. To develop a homeowners' module that would:
  - a. View their homeowner's status such:
    - i. Payment status (due, unpaid, and paid)
    - ii. Delinquency report status (viewed, verified, and settled)
  - b. Generate complaint report.
  - c. Receive admin office's notifications/announcements such:
    - i. Status reports
    - ii. Complaint reports
    - iii. Billing notice
  - d. Reply to the admin office's messages such:
    - i. Verifying and sending proof of payments.
    - ii. Private message to the admin regarding to complaint report.
- 3. The system will be evaluated in terms of Efficiency, Reliability, Accessibility and Eco-Friendly and Performance.

## **Scope and Delimitations**

This study focuses on providing Solana Country Homes Homeowner's Association an exclusive medium of communication and management portal between admin office and homeowners.

### **Scope**

- Providing an environmental friendly, efficient, reliable and convenient management system.
- Creating an accessible and secured interactive platform wherein the admin office and homeowners can exchange transaction such: complaints, suggestions, announcements and queries.
- Implementing timely notification system to avoid homeowners being left behind which may lead into misunderstanding and having wrong decisions.
- Integration with existing systems and databases within the Solana Country Homes Association to ensure seamless and efficient operation.
- Providing real-time updates and reporting to the admin office and homeowners to facilitate informed decision making.
- Implementing data security measures to protect sensitive information and ensure privacy for the homeowners.
- Providing customizable and flexible options for the admin office to manage their daily operations and activities.
- Improving communication and transparency between the admin office and homeowners.
- Streamlining administrative processes to increase productivity and efficiency.
- Improving the overall experience for the homeowners through the use of modern technology.



## **Delimitation**

Due to the short development period, this study will not address the payroll system that the administrative office has asked. Moreover, the system is unable to manage online payments like bank transfers and other digital payment methods. Instead, residents will need to provide a screenshot of their payment as proof, which the administrative office will then assess.

The association's reservation policy for shared facilities; swimming pool, clubhouse, basketball court and playground will also not be covered by this study. This is due to the reservation process' intricacy and the requirement for a more in-depth examination and analysis before it is implemented.

## **Significance of the study**

The Solana Country Homes Homeowner's Association will be able to resolve their communication and outreach issues with their homeowners thanks to the portal the researchers are developing for homeowners. The technology has featured that the association's current method (paper transmitting) does not have.

The homeowners will benefit from having a practical and accessible means of making suggestions and complaints and receiving confidential real-time notifications.

Homeowners' issues and concerns can be readily sorted, communicated with, and handled by the administrative office. Additionally, this will limit document exposure, just like it did in the past when office visits from homeowners were frequent. Accordingly, this approach will lower the association's manufacturing costs, allowing them to allocate those funds to additional useful projects.

The result of the study will be of great benefit to the following:

- **Locale/Company** - The system will assist the Solana Country Homes Homeowner's Association with its issues, including better management and community communication.
- **Researchers** - This study will serve as proof that they have achieved something purposive for others. The finest experience is also working with people that they will regularly run across in the profession in the future.

- **Future Researchers** - Finally, as technology and requirements evolve, there will always be room for improvement in this system. But this will act as a starting point for others who will undertake a study in the Solana Country Homes Association in the future. Accordingly, by employing web-based technology to acquire potential related data, this also aids society in developing more effective, convenient, and environmentally friendly ways to manage homeowners' associations.

## CHAPTER 2

### **Theoretical Framework**

The analysis of relevant studies acquaints the readers with the key. Past studies' similarities and differences, as well as their applicability to the current investigation, are all discussed. It provided direction to the researcher in the topic selection process and suggested methods for making the independent and dependent variables evaluated in the study operational.

You might employ five or more different software programs, like many management organizations, to facilitate seamless client service. Change is, however, in the air. More management firms are starting to make investments in cutting-edge equipment, such as practical homeowner portals that transform their entire client service strategy.

### **Review of Related Literature**

Embracing technological advancements is one of the must have investments in today's pace of industry. Being engaged in digital workplace can provide the convenient ways to perform quality of service to your customers and being served with.

Kirstie Magowan (2020), working from anywhere, at any time, is no longer only desirable. For many, if not most, of an organization's functions, the ability to work from anywhere is a crucial asset. Businesses that had not implemented digital workplace solutions were forced to scramble at the start of 2020 to mobilize their workforces and enable them to work effectively with little to no productivity loss while also enabling them to connect to the office from any location.

This meant that service management employees would be able to use their toolkit with the same capability, efficiency, and automation from home as they can from behind a desk at work.

According to Liferay Website, portal is a web-based platform that compiles data from several sources into a single user interface and shows consumers the information that is most pertinent to their situation. Simple online portals have developed into platforms for digital customer experience efforts over time. Specifically, A homeowner online portal is beneficial for both the association and the HOA management company. However, it is not a complete package. For that, you will need an HOA management software that comes with all the bells and whistles,

such as report generation, accounting, and processing of receivables and payables. It is a good idea to connect homeowner online accounts directly to the HOA software. This way, management can streamline processes and close the gap between the two programs. You can painlessly send information from one software to the other.

In relation, Hignell Companies stated, social media has altered how we communicate, for better or worse, and it is here to stay. You can use these platforms to communicate with your homeowners' association and build your professional brand by understanding the benefits, drawbacks, and legal ramifications of doing so. It provides; fast transaction, saves money, easy access to information, easy to correct, enhances communication within the community and create an interaction platform between homeowners and management.

However, due to its openness to public and poor security management, makes these platforms as mode of transaction and communication of a supposed exclusive community inefficient.

This practice are prone to; (1)Legal exposure – since these are open platform , they can easily detect your identity, (2)Unethical actions and inappropriate accusations – in these platforms it is difficult to supervise because of insufficient number of administrators and policy makers, (3)Poor management - with the reason of not having officer-in-charge, the community becomes uncontrollable.

### ***Why Should Go Paperless?***

It is becoming simpler to run a paperless firm as the digital world expands and technology becomes more accessible to businesses of all kinds. The digital era's catchphrase has permeated every industry, including business. Going "paperless" refers to the practice of converting all paperwork, files, and documents to digital format.

There are 5 issues with paper-based systems; reduced productivity, reputational damage, heightened compliance risks, increase travel and print infrastructure. The main reason field service companies are moving from paper-based to digital management methods is cost. The bottom-line is that it costs companies less to deliver a better service (Saunders, 2019). These cost savings are

most clearly seen in the day-to-day operational savings, but they also deliver longer term strategic benefits.

Digital transformation offers cost and time savings to businesses of every size and type. There is no doubt that the environment is a factor to consider in going paperless. The digital transformation of the company processes is not only immensely rewarding, but it is also becoming a necessity due to technical advancements and demands in the 21st century. (Bendor-Samule, 2020)

The Philippines is making good progress in simplifying and modernizing export and import processes, including implementing paperless trade, despite the COVID-19 pandemic. A survey shows the country's implementation rate of key trade facilitation measures stood at 86.02% in 2021, higher than Asia-Pacific's average at 64.9% and Southeast Asia's 74.3%. However, by accelerating the digitalization of processes further, the Philippines could reduce trade costs and improve its competitiveness significantly (BIMP-EAGA, 2022).

Tony Maghirang (2022), a paperless office is not a new concept. The idea took root in the '70s, when the environmental movement became in vogue along with such popular messaging as "back to nature" and "a living tree must be felled to produce only so much paper."

With the advent of digital technology, it's fair to say that the push for a paperless organization has come urgently to the fore. Amid the global climate change, some observers argue that a paperless operation could contribute considerably to forestall the adverse impacts of environmental changes.

In conclusion, with the advent of new digital document management systems and software coming out every day there still is a gap in knowledge between how to become paperless and genuinely becoming paperless. Companies need to be more aware of the paper usage in every department and come up with innovative new ways to reduce this level.

An article of Felix Smith (2019), listed the 5 benefits of Homeowners Online portal; (1)Convenience – having all what services you need, (2)Security – having the privacy and maintaining confidentiality in any circumstances, (3)Control Information – practicing full control of requests and separation of ends and responsibilities, (4)Make dues payment freeze – to avoid

conflicts in terms of payment and giving the homeowners of payment experience, (5) Lighten the load of HOA management – the management office can have a smooth workflow without exerting too much time and effort.

Solana Country Homes Association uses paper method as their way of information dissemination and communication. However, there are factors being affected to the performance of existing method such, accuracy, reliability convenience, eco-friendly and security etc. Which is why there are scenarios wherein it leads into serious issues which affects the community.

In relation, a survey conducted by Conor Smith (2018), 3,500 of business leaders in United States' industries 44% among them still uses paper transaction. When asked how often they use paper in their position, surprisingly just under half of the responses, at 44.23%, said that they use paper in their position daily, with only two percent admitting they never use paper.

Similarly, in a recent online survey conducted by Consumer Action in New York, most respondents noted that they prefer to receive all types of bills by mail—even when they opt to pay the bill online. Depending on the account category, 45-74 percent of respondents said that they choose paper over electronic notifications for insurance, utilities, medical, mortgages, credit cards and property taxes. Companies and government agencies are eager to steer people into receiving regular bills and financial statements electronically rather than through old-style paper notices, or “snail mail.” Think about the last time you opened a paper map or searched for a phone number in a paper phone book; transitioning to electronic communications can be useful, but many of us still prefer to receive important financial documents on paper.

Moreover, in the survey Alegra Howard in 2019, found that up to three-quarters of those surveyed opted for bills to arrive by mail. For each of nine types of bills and invoices, consumers chose paper over digital delivery: insurance (66%), utilities (63%), medical bills (74%), property taxes (71%), internet services (51%), mortgages (45%), motor vehicle renewals (69%), credit cards (61%) and phone service (56%). Some respondents worried that important documents would get lost in a barrage of junk emails, making it difficult to identify critical notices or pay bills on time. Others mentioned the hassle of creating online accounts and remembering numerous passwords. Some worried about hacking and the overall security of their personal account details when using online accounts and emailed communications.

## Review of Related Studies

Minyoung Kwon and Erwin Mlecnik (2021), due to the capabilities of digital media, such as simple accessibility, transparency, and networking, web portals can promote sustainable environmental concepts. The activation of carbon savings in houses is the responsibility of local authorities (LAs), who are also important players when it comes to supplying their residents with unbiased information. Thus, local government websites may raise public knowledge of environmental issues, particularly in relation to owner-occupied, single-family home renovation. The experiences of LAs creating web portals have, however, seldom ever been researched. To encourage the adoption of home renovation, this study analyzes the development of various LA web modules and looks at how LAs support modular web portals. It also establishes criteria for evaluating how LAs manage the development of web modules.

The mapping of current local authority developments uses a model of the renovation journey of a homeowner. In order to analyze and assess the adoption of modular web portals created and tested by six local administrations in four European nations, case study research and interviews were conducted. Lessons have been drawn from the construction and use of the modular web site, highlighting the value of co-creation, connecting with offline activities, and having a strategic management plan.

This study revealed opportunities, barriers, and ideas to eliminate barriers that should be considered, exemplifying the development of modular web modules by local authorities, to accelerate home renovations.

- Internal and external co-creation can relieve financial and technical burdens of LAs' modular web portal development (for example, involving other LAs, associations, and so on). Particularly, co-creation is essential for small-scale LAs: they can invite neighboring LAs to develop web modules together.
- Using a "home renovation journey" as a theoretical framework, LAs can reflect if their web development provides advice and information in different stages of a home renovation process.
- LAs are often considered a trusted source of information, which can also be exploited digitally. LAs can further work together with other reliable and trusted sources,

for example citizens, as peer-to-peer communicators, non-profit organizations, energy agencies, construction associations, public-private-civic intermediaries, and so on.

- Integrating web modules into an existing LA web portal is recommended for long-term financial effectiveness and will be easier if the web portal is already modular.
- Regarding privacy and security, LAs need to carefully balance the scale for sharing information: homeowners and others have to agree with sharing at the beginning of the consultation process.
- Collaborating with third parties can improve the quality of information, and the ease of maintenance.

A specific development trajectory of web modules—reflecting on the homeowner renovation journey—can give the local authorities additional insights, particularly about what type of ‘trusted’ information is still needed by local homeowners. Identifying these needs and the consequent web module development can benefit from collaboration and co-creation with other policy actors and citizens, private actors, and public-private-civic intermediaries. In conclusion, homeowners could communicate well if there is a real-time medium being used which can accommodate multiple users. With that, they can easily express their insights and raise their problems if there is any.

### ***“Electronic-Customer Complaint Management system (E-CCMS) – A Generic Approach”***

In a study of Esraa A. Raffy and Mona Kandry (2019), customer complaints are considered vital and significant information that can be utilized to attain customers’ satisfaction. Consequently, establishing a complaint handling system is essential towards addressing customer dissatisfaction and preventing similar problems from reoccurring.

This study innovated a generic approach for the Customer Complaint Management System. The researchers have designed and developed the proposed system from the beginning by using recent technologies which opens chances to any organization regardless of its size to build its own system using simple technology tools. The results obtained from the implementation are encouraging and promising for the development of the proposed model or even more complex systems in the future regarding complaints as the Complaints Management System is a complex and critical problem.



## **Vista Land Web-Portal**

According to Camella Homes, on June 1, 2017, Camella Homes implemented a one-stop online portal (Vista Land Web Portal) for Vista Land's valued property owners. Having this wide scope of responsibilities, problems among homeowners are inevitable. This portal aims to provide a faster, convenient, and more accessible way to address each property owner's queries and request.

Camella Homes roots as home builder date back to the seventies with the first development project undertaken by founder Manny B. Villar, Jr. Over 30 years later, Camella Homes has become the biggest developer of residential communities for the low and affordable segment in the Philippines. It is the top-of-mind choice among average-income Filipino families and even among the Overseas Filipino market. To date, it has sold more than 300,000 homes in 44 provinces and 117 cities and municipalities, earning Camella Homes the title of The Most Preferred Home Builder among the B and C socioeconomic classes.

Having pioneered value-for-money homes in master-planned communities, Camella Homes has now added to its offering's luxury single-family homes and city lifestyle residences, with innovatively conceived two to three-story town homes and low-rise condominiums. All of which come merged in a mixed-use environment to provide the ultimate level of convenience and comfort to its residents.

## **Neighrs by Vinteam**

According to Vinteam website, Neighrs is an all-in-one, secure software for HOAs, condos and property management companies with communication at its heart. We believe that great communication is key to community living. With Neighrs you can simplify and automate daily management tasks. We offer a portal, app and fully customizable website with five different ways of communicating with property managers, board members and residents. An American company located in New York City, but their workforces are dispersed in other cities, states, and countries.

Yasmine Yohannes (2022), Neighbors has four (4) main features to offer; (1) Communicate – which involves text messaging, community notices, virtual meetings, smart calls and messaging (2) Management Features – this section tackles service request, asset management, amenity reservations, reception, incident reporting and quickbook integrations (3) Store – this includes file uploading, data management, calendar, resident database and document organization (4) Engage – this subject differentiates the admin and the homeowners and how the system appears in your device which includes website builder, engage socially, role based access, android and ios accessibility, and website look and feel (5). The mentioned features aim to help the homeowner's association, condominiums and property management companies (admin and homeowners) to have a platform wherein it includes real-time interaction, notification, and data management to avoid miscalculations and miscommunication specifically bigger companies which involve large amount of money and data.

## **Database**

The Management with Homeowner portal for Solana Country Home San Isidro, Bacolor (Pampanga) relies heavily on a sophisticated and intricate database system that is responsible for storing, organizing, and retrieving data in a highly efficient and reliable manner. To achieve this, the researcher has considered several database management tools that are widely used in enterprise environments.

Microsoft Access, a database management tool that allows the user to collect and comprehend information in an intuitive and user-friendly environment, has been considered. However, it has its limitations. For example, the size of a single database file is restricted to a maximum of 2GB. This limitation can be overcome by using a split database, which points to multiple back-end database files, each of which can be as large as 2GB.

Alternatively, SQL Server, another popular database management system from Microsoft, has been evaluated. Designed specifically for use in enterprise environments, it is a powerful Relational Database Management System (RDBMS) that runs on Transact-SQL (T-SQL), a programming language that provides a wide range of transaction control, exception and error

handling, row processing, and declared variables. (<https://www.roseindia.net/mysql/mysql5/what-is-mysql.shtml>)

However, the researchers ultimately decided to use MySQL, an open source RDBMS that is known for its high performance and reliability. MySQL is a fast, flexible, and multi-threaded system that is capable of supporting multiple users, making it ideal for handling large volumes of data at high speeds. In addition, it is highly popular and widely used on the web, and it can run on a variety of platforms, including Unix, Windows, and Mac OS. The fact that MySQL is an open - source solution and is freely available for use was also a major consideration, especially when working within the constraints of a limited budget.

Therefore, it was deemed the most suitable database management system for the Solana Country Homes Homeowner's Association.

## **Programming Language**

In the development of the proposed system, the team will utilize Visual Studio Code, PHP, and MySQL for the back-end.

According to w3school website, Visual Studio Code, an innovative source-code editor created by Microsoft, offers a variety of valuable features such as debugging, syntax highlighting, code completion, snippets, refactoring, and embedded Git.

PHP, on the other hand, is a widely used general-purpose scripting language specifically designed for web development, with the ability to handle complex operations and to efficiently manage large amounts of data.

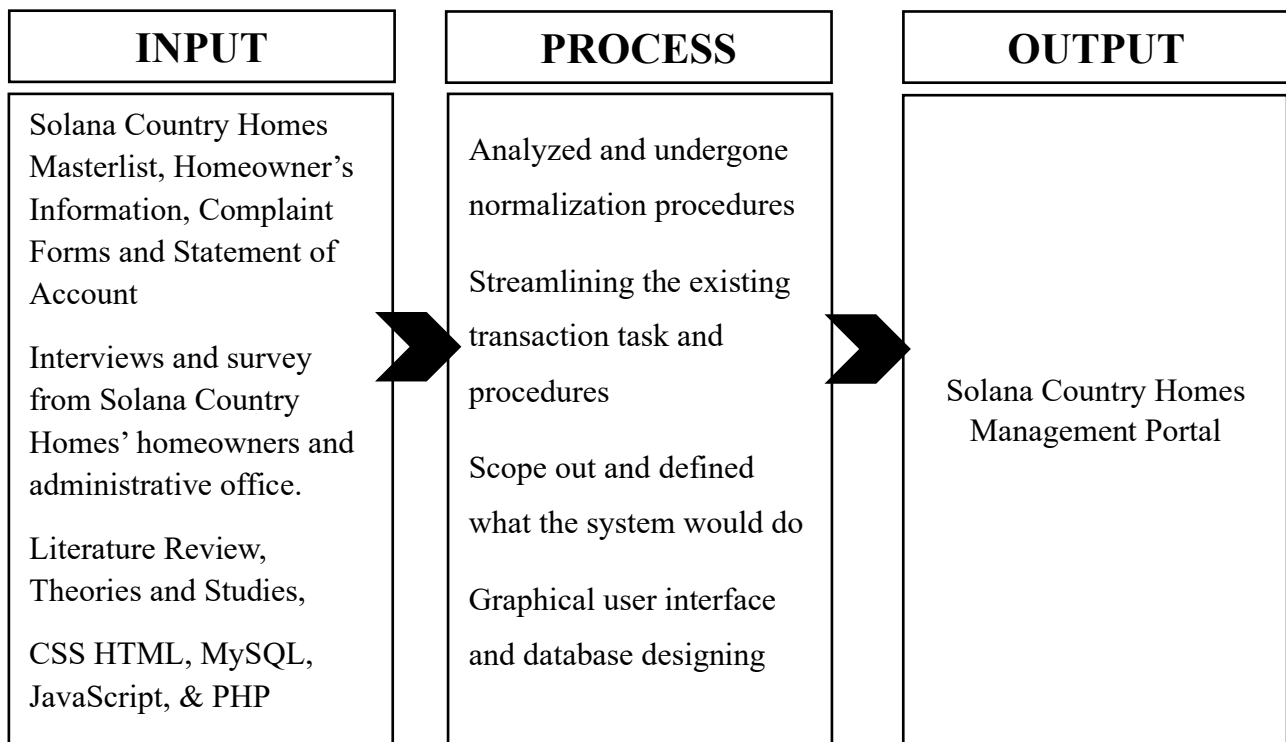
On the front-end, the development team will rely on HTML, JavaScript, and CSS. HTML is the standard markup language for web documents, providing a framework for organizing and structuring web content.

JavaScript is one of the core technologies of the web, enabling developers to create dynamic and interactive web applications, while, CSS is a style sheet language used for describing the presentation of web documents.

Overall, this study seeks to provide Solana Country Homes Association's users with an advanced, easy-to-use application management system that enables effective communication, streamlines payment processes, and simplifies complaint management, all while utilizing cutting-edge technologies and adhering to the highest standards of software development.

### Conceptual Framework

The conceptual framework illustrates the structure and variables of the existing system. The Input-Process-Output (IPO) model shows the inputs and processing of the necessary inputs of the current system of Solana Country Homes Homeowner's Association, leading to the development of the Solana Country Homes Management Portal.



## **Definition of Terms**

Portal – an intangible platform where you can do communication, transactions and management. Most likely through the use of internet connection.

Database – a program that allows the frontend of the application to store and retrieve data.

Front End – the user interface of the system that interacts to the users.

Module – the sub-systems of the Solana Country Homes Management Portal.

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