

# DIGITALIZED WORKFLOW ADMINISTRATIVE SYSTEM FOR CHRISTIAN FELLOWSHIP INTERNATIONAL (CFI)

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## ABSTRACT

The role of administration in national development and the speedy resolution of decision have gone beyond pen and paper synergy. This work was undertaken with the goal of creating an online administration reporting system for Christian Fellowship International (CFI). The methodology used in the study was the Structured System Analysis and Design Methodology (SSADM), which is a technical approach for analyzing and designing an application or system by applying objects throughout the software development process. The system was created to provide a comprehensive database that includes weekly, quarterly and travel reports. An efficient and convenient method of communication was established between chapters, sectors, and the Head Office to share reports among members and users. The system was set up using the various programming tools such as JAVASCRIPT, PHP, SQL and JQUERY. Technical support was given to chapters, National Officers, and the Head Office on the automated workflow of the CFI. On the system, the administrator can update and perform routine maintenance to prevent malware if hosted. The work as demonstrated and implemented is seen to be successful in the achievement of its objectives and the system has been implemented to improve the organization's reporting process and communication among its members. The testing of the system revealed a total shift from the traditional method of procedures of CFI operations and the feedbacks/remarks obtained show clear acceptance of the workings of the system.

**Keywords:** Administration, Systems, Organization, Reporting, Process and Christian Fellowship International

## INTRODUCTION.

There are problems that have remained unabated within organizations and pose a serious threat to how information is disseminated. The reporting method of Christian Fellowship International has become cumbersome as a result of the significant amount of data it handle on a daily basis. Information is key to the enhancement of the establishment and if not

properly managed, it might create some drawbacks to the advancement of such establishment (Agyei-Ababio *et al.*, 2023; Aini *et al.*, 2020). The Online Reporting System (ORS) simplifies the process of environmental reporting through its advanced web application. The tool was designed to build capacity and assist in meeting reporting obligations (Simangunsong and Metekohy, 2019). This

information system caters to the reporting needs of both the Administrator and members of the fellowship through an online platform. Christian Fellowship International, being a community service organization, undertakes a broad spectrum of activities and financial transactions at various intervals, ranging from weekly to yearly (Fast 2009). As a result, the fellowship generates a substantial amount of data, which is moderately complex. Therefore, the fellowship must have a unified and centralized data storage system to ease the storage, administration, and presentation of the data. The information system was constructed around the data (Anderson 2020; Bill 2019).

Herbert (2011), said a system can be described as a collection of interconnected parts that collaborate to accomplish specific objectives. Information technology is the fusion of computer technology, comprising hardware, software, and telecommunications technology, which encompasses data, images, and sounds transmitted over networks. Westmark (2004) explained that information system as an assemblage of individuals, data, procedures, and information technology that interact to acquire, process, store, and furnish the information required to support organization. Osagie *et al*, (2019) emphasized that computer usage in all studies as well as by organization has become imperative. Mike and Joseph (2015) state that an information system is an orderly amalgamation of individuals, hardware, software, network communications, data sources, protocols, and procedures used for storing, acquiring, transforming, and disseminating information within an organization. Nevertheless, the current issue is that data recording and storage within CFI is still done manually, utilizing different applications such as paper or software such as Word and Excel (Gratton 2017; Marc 2013; Melis 2011). As one of the prominent campus fellowships in Nigeria, Christian Fellowship International handles a substantial amount of data on a daily basis,

resulting in more intricate operations. CFI, being a subsidiary of the Church of God Mission International, experiences particular challenges regarding the transmission of information across channels due to the following factors:

- i. the reporting channel currently being used is primitive
- ii. it is lopsided and not intuitive
- iii. the reporting platform channels are unidirectional
- iv. loss of valuable historical records through destruction or neglect.
- v. difficulties in finding members and management information when needed

The aim of the study is to design and implement an Online Administrative reporting system that has the capacity to resolve some of the problems raised in the statement of the problem. The objectives are to develop a system that can:

- a) create a comprehensive database that provides reports on weekly, quarterly and travels details.
- b) develop and implement an online reporting system.
- c) monitor Online, the administrative performance of chapters as it relates to reporting.
- d) create a more effective and efficient means of communication between Chapters, Sectors and the Head Office.
- e) provide technical support to both chapters, National Officers, and Head Office

In today's data-driven era, businesses that do not leverage the power of data will simply stay behind. To reach that much-wanted competitive advantage, companies need to implement and invest in processes and tools that will allow for efficient data management by involving all of their workforces in the process. That is where online reporting comes into the picture (Sebastian, 2021). Madan (2017), said online reporting is the process of analyzing and monitoring data by business executives

and decision-makers to extract actionable insights that are presented in interactive dashboards and reports within an online environment. The massive amount of data generated by organizations necessitates smart software that can interpret and transform the data into strategic insights that aid the decision-making process (Sebastian, 2021). SaaS, which is part of cloud computing, encompasses several services, such as IaaS, PaaS, DaaS, MSaaS, MBaaS, DCaaS, iPaaS, and ITMAaaS (Chai, 2022, Osagie *et al.*, 2018). Users usually access SaaS apps through thin clients, such as web browsers. SaaS has become a popular delivery model for various business applications, including office software, messaging software, payroll processing software, DBMS software, management software, CAD software, development software, gamification, virtualization, accounting, collaboration, CRM, MIS, ERP, invoicing, field service management, HRM, talent acquisition, learning management systems, CM, GIS, and service desk management (IBM, 2021). SaaS is an integral part of the strategy of almost all enterprise software companies. As data generation continues to increase, businesses are seeking more user-friendly online data analysis tools, contributing to the growth of Software-as-a-Service solutions (Muppidathi, 2020). Online reporting engines provide an advantage by allowing you to visualize data, create

presentations, and increase productivity while using minimal memory or processor usage (Stallman, 2016). With a cloud-based online reporting tool, you don't have to worry about cluttering your storage. It should be customizable to your business needs and goals and provide a foundation for sustainable business development (Chai, 2022; Nancy 2017).

Any online system must be adequately protected from unauthorized access, this is to ensure data integrity. Osagie and Osagie, (2012) proposed a system that further exposed the hacking techniques of the man at the middle. To this end, proper studying of the hacker techniques is key to keeping them off.

## METHODOLOGY

The Structured System Analysis Development Methodology (SSADM) was utilized to analyze the operations of the current Administrative Reporting System, and certain shortcomings were discovered and as a result, the decision was made to introduce an Online Administrative Reporting System. The current manual system was found to be time-consuming, requiring multiple steps and causing delays in clearing students for campus services, as well as in obtaining their certificate. Thus, it was deemed necessary to implement an online reporting system to overcome these limitations.

### **The Flow data of the Existing System**

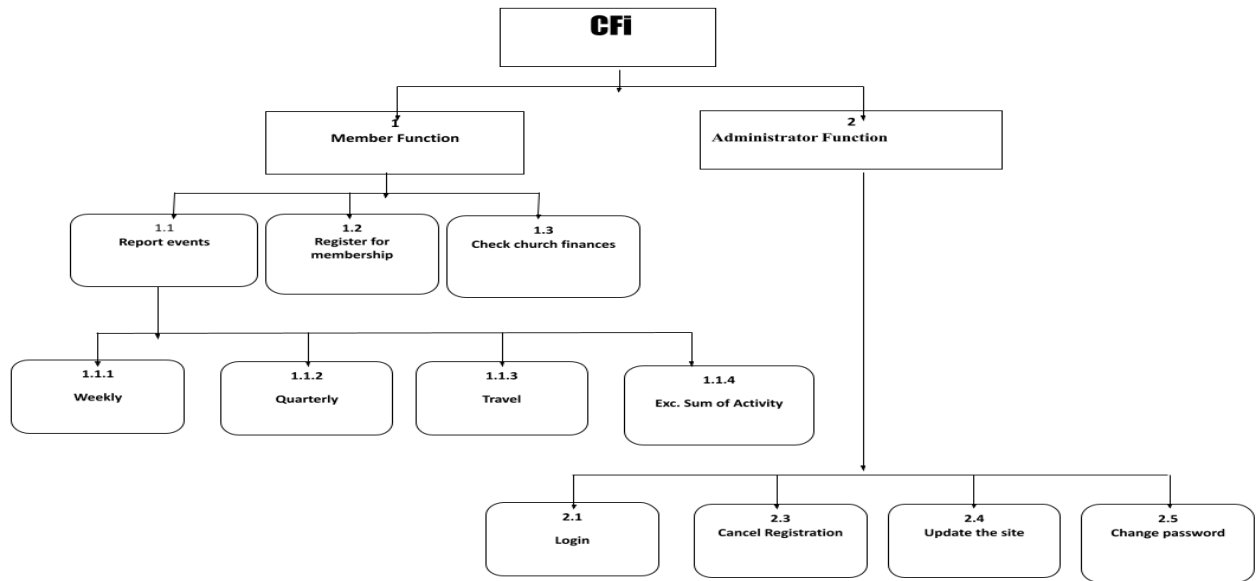


Figure 1 Flow Data of the Existing System

Figure 1 function by allowing users to provide information, such as service reports, fellowship finance, and weekly, monthly, and quarterly reports through messaging apps like WhatsApp or email, or through physical questionnaire forms. The Head Office or Admin organizes the reports using Excel, and a physical copy is maintained. Once approved by the Admin, they are incorporated into the previous fellowship's report. However, this process is inefficient and insecure. Thus, a new system is required to enhance the precision and safety of the reports. The new system should guarantee that all reports are securely stored, and changes and updates are conveniently tracked. It should also generate reports quickly and accurately. Due to the time-consuming and multistep nature of the current reporting system, there are significant delays in reporting important information about members, such as service attendance, offering records, and details of sermons preached, as well as other fellowship activities. This has created an urgent need for a new online reporting system that can eliminate the inefficiencies of the manual system. Several issues have been identified in the current system, such as:

1. Data processing is slow and prone to errors when done manually.
2. The current process can be stressful for end-users.
3. The manual process is not user-friendly

**The System**

To solve the issues associated with the analysis above, the Author proposed system includes an object-to-object relationship, similar to the entity relationship diagram used in database applications, but also applicable to data design. The relationship is graphically represented by an entity relationship diagram (ERD) and serves to depict the connections between data objects. ERD is primarily used to illustrate the relationship between data objects. To enhance the reporting process, an online reporting system has been proposed. This system allows users to submit weekly, quarterly, and travel reports with specific details such as service time, preacher, topic, text, attendance (by gender), first-time attendees, leaders, offerings, tithes, and closing of services. In addition, an executive summary of activities can also be submitted, which includes details on the number of General Executive Council members, graduating Central Executive

Council members, female pastors, and the names of specific officers. All of these can be done online from any location at any time. The proposed system is database-driven and stores all information related to the church's availability status.

**Structure Analysis**

To analyse, design, and implement the system in question, the structured system analysis and design methodology (SSADM) was utilized. This particular method is commonly employed for developing information systems, as it adheres to a set of guidelines for both systems analysis and application design. By following a systematic and formal approach, SSADM

ensures a comprehensive analysis and design of information systems

Figure 2 showing a top-level model of the system under consideration has been developed. The system is made up of three (3) main units, Home, Admin and End-User unit. Access to the Admin Unit is restricted to system administrators, who have special privileges such as the ability to update records, activate accounts, and verify credentials. On the other hand, the End-User unit can be accessed by both regular users and administrators. Users and administrators have different privileges in this unit, such as the ability to open accounts and submit report information, respectively.

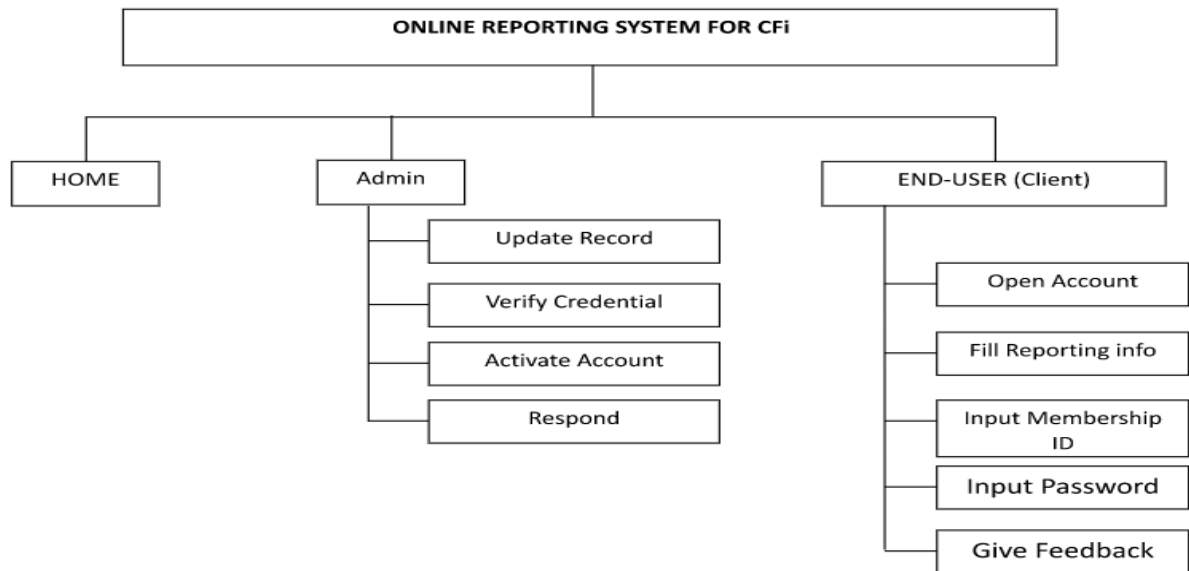


Figure 2 High-Level Model of the System

**Encapsulated Structure of the Proposed System**

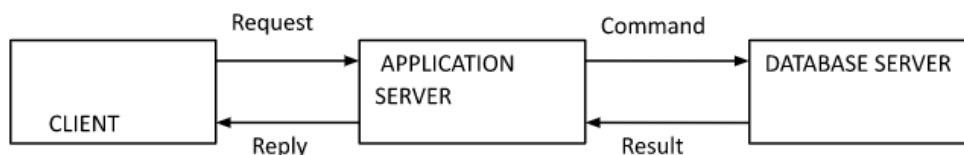


Figure 3. Proposed System Encapsulation Operation

An example showing the configuration of a web-enabled system is illustrated in Figure 3. A computer equipped with an Internet

connection and a browser serves as the client. Using the Hypertext Transfer Protocol (HTTP), the client communicates

with the application server in a client-server architecture. The application server receives commands from the client, interacts with the database, formats the data in Hypertext Markup Language (HTML), and sends the formatted output back to the client. The configuration used involves the application server providing authentication services, database connection service, and application processing service, while the client initiates the request and displays the results. The database serves as the data repository. The system is web-based and utilizes a three-tier architecture, which includes a client, an application server, and a database server. This architecture allows for more choices compared to the traditional client-server setup. The communication protocol used between the client and application server can be different from that used between the application server and the database server. The workload distribution can vary widely among the three components. Many web-enabled databases rely on the three-tier model. To make the database available, the server must be accessible via an external network, often with the use of a firewall to restrict the types of commands that can be passed to the database server. Alternatively, the application server can function as a firewall.

### Hardware and Software Requirement

To ensure successful implementation of computer applications, specific requirements must be met, including both hardware and software. Therefore, the proposed software requirements were considered. In implementing the system, Minimum Hardware Requirements includes

- (1) Server Hardware Requirements
  - a. Pentium iv processors or other IBM compatible systems such as AMD Pentium IV compatible processor (1.8 GHz)
  - b. 1 GB of Random Access Memory with 5MHz font bus speed (RAM)

- c. 100 MB free storage space.
- d. To ensure stable connectivity, a wired network interface card (NIC) is recommended, though a wireless network adapter can still be used.
- e. Internet connection with static IP (internet protocol) address

### (2) Client Hardware Requirements.

The working state of the proposed system depend solely on the hardware and software specifications and act as the main components for internal and external configuration. The hardware specification includes: server infrastructure that aid the high-Performance and it specification include CPUs, RAM and sufficient storage capacity (SSDs for speed and HDDs for Data Storage), Rack-mounted server's center environment however, tower server is considered suitable for the proposed system work station. Networking equipment such as switch, routers and firewalls are considered moderate for the system. The developed application being a web-based application requires server software and client software. Therefore, both requirements will be considered here. Server Software Requirements. The following are the minimum

### (3) Server software requirements:

- a. Network-based software operating systems such as Windows Vista, Windows 7, Solaris etc
- b. The server application software to be used for this project is WAMP server 2.1.
- c. Server security software such as software-based intrusion detection system (IDS), etc

### (4) Client Software Requirements.

- a. Network-based operating system such as Windows XP, 7, Linux, MAC OS, etc.
- b. Web browsers such as

internet explorer, Safari, Google Chrome, Firefox, etc

The various modules that make up the system, and which are available to users with limited access as well as the administrator with complete system access, are depicted in Figure 4.

**Use Case Diagram of the Administrator**



Figure 4. Use Case View of the designed System

**Programming Languages deployed**

The proposed system is a web based application and being an online oriented application, programming tools such Hypertext markup language (HTML) was used to designed the structural layout of the system document, Cascading Style Sheet (CSS) ensure the layout display was adequately achieved, JavaScript which is a scripting language was used to structure the HTML documents in the client-side. It gave the needed blueprint in the interactive features of the proposed system by changing the system appearance menus. While MySQL and PHP where used to structure both the server and the database access of the proposed system.

**System Testing**

To ensure that each program has been carefully written and the system as a whole will function as intended, test data was provided to account for all possible contingencies. The results of the system test are important in determining system performance and reliability. The software uses computer resources efficiently, and in terms of reliability, the software produces accurate results and is less prone to errors. These requirements are met by the proposed system.

**Methods: Performance testing**

The proposed system underwent several performance testing measures, including:

1. Implementing error-trapping functions through error handlers

- that provide users with information about the presence and nature of errors without terminating the program.
2. Soliciting user feedback to identify bugs or dependencies that may not have been detected during development and system testing.
  3. Testing robustness by subjecting the system to extreme input values.
  4. Testing integrity by comparing program performance to the requirements specified.
  5. Evaluating user-friendliness by observing the ease with which a group of selected system users interacted with the system.

### Home Page/Login Page

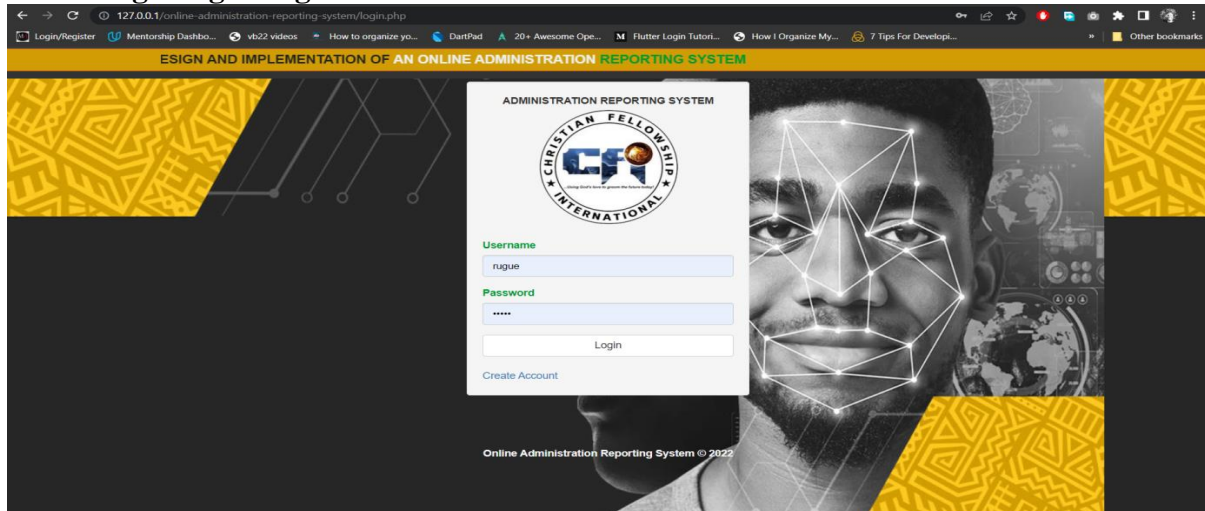


Figure 6: Login Page of a Digitalized Administrative System of Christ fellowship International

For data decentralization, the reporting system as shown in Figure 6 utilizes a crystallization of mechanism of the

different modules as a single synergetic system for proper dissemination of data among reporting staff.

### REPORT FILE MODULE



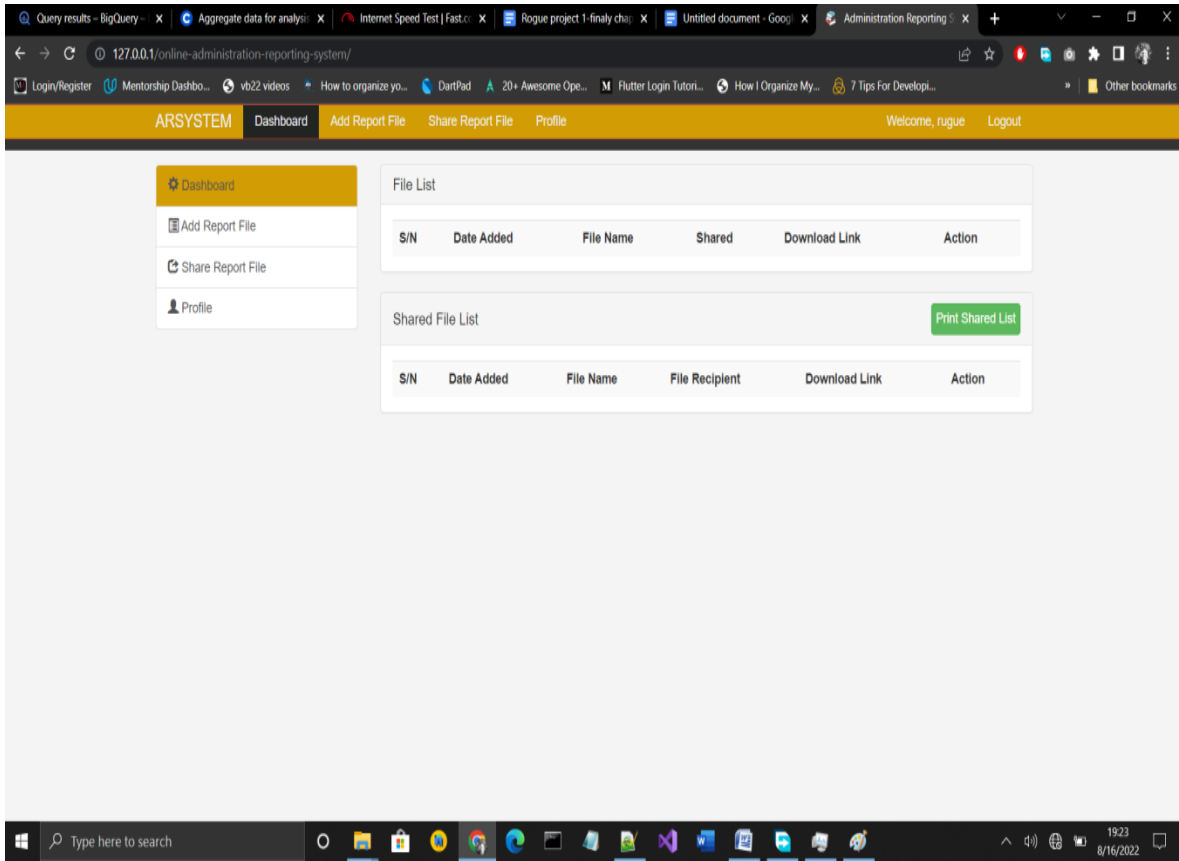


Figure 7: Report file module

The report file module as captured by Figure 7 has four (04) sub modules that keep track of activities such as report files  
**ADD REPORT FILE SUB-MODULE**

repository, download, save and profile of the reporting staff.

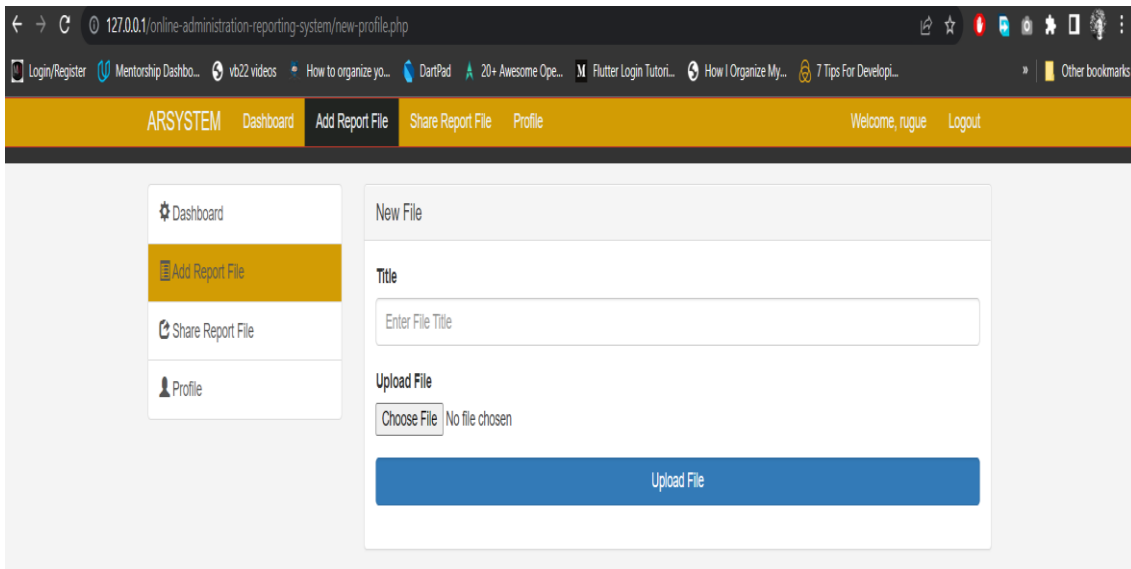


Figure 8: Add Report File Sub-Module

This module create the flexibility for report re-visitation if there is need for file update based on need assessment by the Management

## RESULT AND DISCUSSION

The aim of this research was to ensure that the dichotomy experienced in the time past as it affect the old method of operation is corrected with the new method of data navigation among entities that are on daily basis involved in the Christian Youth International (CFI) campus activities. To this end, this work demonstrates strong desire in ensuring full compliance and actualization of reporting synergy through the implementation of the algorithm that depict it operational procedures.

### Systems Algorithm

An algorithm is a finite sequence of steps that are necessary for solving a particular task, and it can be presented in the form of a flowchart or pseudocode as illustrated in Figure 5. The algorithm as seen in Figure 5 is broken down as follows:

1. **Account Creation:** Users can register and create unique IDs by utilizing the account creation feature. They will be required to provide necessary details for registration, such as their membership ID numbers. Upon entering their information, the system will validate it for accuracy, and if correct, confirm account.
2. **User Login:** To access the online reporting system, users can log in using their unique username and password through the user login interface. Validation of the login information will determine whether users can access their account page or receive an error message if the login details are incorrect.
3. **Fill Report information:** The fill report information feature allows Cfi members to accurately complete and submit report information via the online reporting system. The system will validate the report details and either approve and save the delivery report if valid or display an error message ("reject delivered report") if the information is not valid.

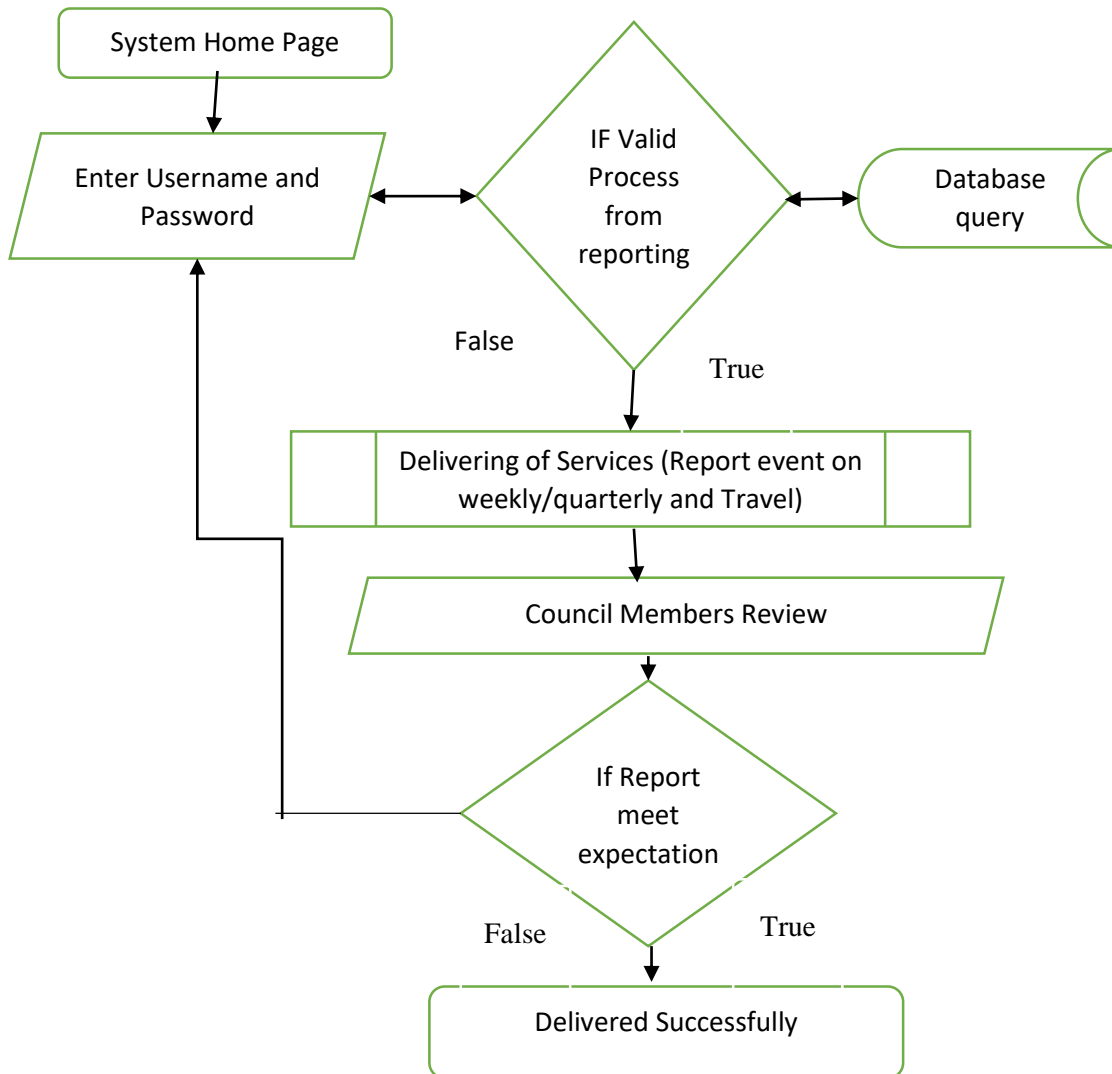


Figure 5: The algorithm for the designed System.

**Pseudocode**

- (1) Open X Access
- (2) Y= C & A
- (3) Create Access X
- (4) If Y = C & A
- (5) Process X
- (6) Else terminate operation and return to (1)
- (7) If X details meet expected z
- (8) Then proceed C &A as successful
- (9) Else go to (1)

**CONCLUSION**

An advanced web program that simplifies the environmental reporting procedure is the Online Administration Reporting System (OARS) of this work. The idea behind the tool is to increase capacity and

help reporting requirements amongst various Department within the Christian Fellowship International (CFI) as a body whose operational tendency cut across tertiary institutions in Nigeria. For both the Administrator and the fellowship members, this system offers online reporting

capabilities. The fellowship, one of the groups involved in community service, offers a variety of ecclesiastical activities as well as financial transactions on a weekly, monthly, quarterly, and annual basis to meet the needs of the congregation. Object-oriented analysis and design methodology (OOADM), a technical approach for assessing and creating an application or system by utilizing objects throughout the software development process, was used as the methodology in this study. For this project, HTML, CSS, JavaScript, PHP, SQL, and jQuery were used as the programming languages tools. Web programming languages were employed because the application is platform neutral and web-based. In order to meet the needs of the congregation, both in terms of ecclesiastical activities and financial transactions of the fellowship from weekly, to monthly, quarterly, and yearly, the intended outcome is the Online Administration Reporting System Services as revealed by this work. The scientific endeavor was largely successful and it achieved its goals. Notwithstanding potential flaws, the research was a worthwhile endeavor. It enabled the researcher to comprehend the issue and pinpoint areas that needed improvement in subsequent studies. The precise goals established at the start of the work were accomplished through the completion of the system. In line with the work, a database that provides reports on travel-related details was created as part of the embedded modules. To exchange reports among members and users, a more effective and practical means of communication was built between chapters, sectors, and the head office. Chapters, National Officers, and the Head Office received technical assistance. The system as designed and launched has room for malware proactive maintenance when discovered and this is helpful by the integration of the utility libraries. In addition, the administrator can also update and carry out regular maintenance on the new machine

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## Appendix

### Login Code

```

<?php require_once ("landing_header.php") ?>
<section id="main">
<div class="container">
<div class="row">
<div class="col-md-4 col-md-offset-4">
<?php
    try{
        if($_SERVER['REQUEST_METHOD']=="POST"){
            if(isset($_POST['btnLogin'])) {
                login($_POST['txtUsername'],$_POST['txtPassword']);
            }
            if($flagp==true){
                echo " <div class=\"alert alert-warning\">
<a href=\"#\" class=\"close\" data-dismiss=\"alert\" aria-label=\"close\">&times;</a>
                Invalid Username or Password!!!
</div>";}
            }
        }catch(Exception $e) {}
    }?>
<form id="login" action="login.php" method="post" enctype="multipart/form-data" class="well"
style="margin-top:-10px;">
    <div align="center"><strong>ADMINISTRATION REPORTING
SYSTEM</strong></div>
    <div style="text-align:center;"></div>
    <br/>
<div class="form-group">
<label style="color:#009933;">Username</label>
<input type="text" class="form-control" name="txtUsername" placeholder="Enter Username">
</div>
<div class="form-group">
<label style="color:#009933;">Password</label>
<input type="password" class="form-control" name="txtPassword" placeholder="Enter Password">
</div>
<button type="submit" name="btnLogin" class="btn btn-default btn-block">Login</button>
<br>
<a href="createaccount.php" class="text-center">Create Account</a>
</form>
</div>
</div>
</div>
</section>
<?php require_once ("landing_footer.php") ?>

```