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# The Skeynected: SK Project Implementation Monitoring and Youth Information Management System

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# ABSTRACT

The Skeynected: SK Project Implementation Monitoring and Youth Information Management System is a webbased platform to improve efficiency, transparency, and accountability in youth project monitoring. Manual data collection in barangays often leads to delays and inaccuracies, making project tracking and fund allocation difficult. To address this, the system integrates a centralized database and automated tracking tools for real-time SK project monitoring and youth profiling. Using the Agile Scrum methodology, the system undergoes iterative improvements based on stakeholder feedback. The development cycle includes planning, designing, prototyping, testing, and implementation, with user testing conducted among LYDO staff and SK officials. This system enhances data accessibility, enabling better decision-making and more effective resource allocation. By strengthening local governance, empowering SK officials, and fostering youth engagement, Skeynected promotes sustainable community development while ensuring a structured, data-driven approach to managing youth programs and tracking project progress.

**Keywords:** Agile Scrum Methodology, Local Youth Development Office (LYDO), Local Governance, System Development, SK Officials, Resource Allocation, Skeynected, SK Project Monitoring, Youth Information Management, Web-based platform.

# **1.0 INTRODUCTION**

#### 1.1 Rationale of the Study

The SK project monitoring and youth profiling aims to enhance the effectiveness of local governance and project execution within the context of youth development programs in barangays. Effective project management is critical for ensuring that community projects meet their intended goals, particularly in the SK youth sector, where engagement and resource management are pivotal. According to Lacasandile et al. (2020), leveraging information and communication technology can facilitate better governance through data-driven decision-making. Similarly, Jacobe et al. (2021) emphasize the importance of systematic profiling and statistical reporting in managing community resources effectively. By integrating these technological advancements, the proposed system provides LYDO with tools to monitor project implementation, allocate resources efficiently, and ultimately foster a more resilient and empowered youth project and program.

The Municipality of Tupi is one of the first-class municipalities belonging to the province of South Cotabato & created under EO 612 dated September 11, 1953. The municipality's total land area is 31,150 hectares consisting of 15 barangays. Nestled at the foot of a dormant volcano, Mount Matutum, Tupi is considered the fruit, vegetable, and flower basket of South Cotabato. The name "Tupi" is derived from the word "Tufi" which was a vine chewed by native Blaan tribes who first inhabited the land. In 1936 during the commonwealth government, President Manuel L. Quezon appointed Major General Paulino Santos as General Manager for the development of Koronadal and the Allah Valley. Settlers from Luzon and the Visayas transformed the previously forested area into an agricultural zone. The Barrio of Tupi was created into a municipality by Executive Order 612 of President Elpidio Quirino on September 11,

1953. The first set of appointed officials were inducted on October 2 of that year. Tupi is politically subdivided into 15 barangays. Each barangay consists of puroks while some have sitios. On July 13, 2024, despite having a low voter turnout of only 25.45%, the majority of voters ratified the creation of Barangay Juan-Loreto Tamayo, which was carved out of the barangays of Cebuano, Linan, and Miasong. The Commission on Elections announced that of the 2,485 participating voters, 2,393, or 96.30% voted "Yes", while only 89, or 3.58% voted "No". The new barangay is named after the grandparents of former mayor and incumbent South Cotabato governor Reynaldo Tamayo Jr. The current process of the SK project monitoring and youth information involves a series of manuals for tracking and managing youth development projects, implementation status, and community engagement through paper-based submission by SK per barangay, such as paper-based reports and informal communication. While LYDO may utilize basic digital tools for gathering youth profiling records through Google Forms.

These are the following problems that LYDO currently experiencing: (1) Manual processes often result in delays in updating and retrieving data, which hampers the monitoring of project progress and youth activities. (2) Lack of a centralized system for managing project and youth data creates silos, making it difficult to maintain accurate, up-to-date information. (3) When records are unorganized, tracking the completion of tasks and fund allocations becomes difficult, increasing the risk of project mismanagement. (4) infographics that contain too much information or are poorly structured can confuse stakeholders rather than clarify project details. (5) Lack of clear member identification disrupts communication between officials and the youth, leading to missed opportunities for collaboration and engagement.

The study focuses on developing a web-based platform that can address current issues in the Sanguniang Katabatan federation by managing information and issuing project monitoring more efficiently and conveniently for both the LYDO and barangay SK officials. The Web-based Barangay Profiling of Youth in every barangay and project monitoring aims to improve transparency and accountability in barangay SK governance. The study aims to assess the feasibility and effectiveness of using a web-based platform to enhance service delivery and SK governance. This system enables officials to have a centralized database that can aid in improving service delivery and planning processes, such as identifying priority areas for SK project development or social services. A Web-based SK Project Implementation Monitoring and Youth Information Management System is a digital platform where SK barangay officials can collect, manage, process, and store important information about their youth in the barangay, including personal details like name, age, address, and contact details, as well as employment status, income, and health information. This system employs a statistical approach to examine deeply the involved dynamics of youth demographics and community needs, converting raw data into actionable insights.

# 1.2 Objectives of the Study

# **General Objectives**

The Researcher aims to study and develop a Skeynected: SK Project Implementation Monitoring and Youth Information Management System for the Local Youth Development Office (LYDO) of Tupi South Cotabato.

# **Specific Objectives:**

- 1. To develop a system that will enhance the efficiency and accuracy of data management related to youth activities, which can significantly improve their ability to monitor project progress in real-time;
- 2. Develop an automated centralized system for managing project implementation monitoring and youth information management, as well as up-to-date information across all levels of SK per barangay.
- 3. to be able to develop a system that enhances the efficiency and accuracy of tracking project completion and fund allocations;
- 4. to be able to create a module that can enhance the clarity and effectiveness of infographics used in the SK project and youth information by simplifying visual data presentations related to the SK project;
- 5. to provide a youth registration module and member identification to enhance communication and collaboration between the Local Youth Development Office (LYDO) and SK officials at the barangay level.

# 1.3 Scope and Limitation of the Study Scope of the study

- 1. **Monitoring and Youth Information:** will be developed to enhance the efficiency and accuracy of managing youth-related activities.
- 2. Efficient Data Management: The system will integrate information from multiple sources to provide accurate and up-to-date data at all levels of SK governance.
- 3. **Project Tracking and Fund Allocation:** It will improve the efficiency of tracking project completion and fund distribution, ensuring systematic record-keeping for better oversight and timely reporting.
- 4. **Infographics Module:** A dedicated module for visualizing SK project data will simplify the presentation of key insights, making information more accessible and user-friendly for LYDO and other stakeholders.
- 5. **Registration and Member Identification:** The system will include a registration module to accurately identify SK members, facilitating smooth interactions between officials and youth representatives.

# **1.4 Limitations of the Study**

The study has several potential limitations that were identified by the researchers that might pose challenges to the system. The system will set limitations on the researchers' ability to develop the project to the fullest extent attainable and filter the potential risk areas to note. Include potential challenges related to data accuracy and completeness, as inconsistencies in data collection practices may hinder the system's effectiveness. Additionally, the study may face constraints in user adoption, as some stakeholders may be resistant to change or unfamiliar with new technologies, which could impede the successful implementation of the system.

# **1.5 Significance of the Study**

The study of an SK Project Implementation Monitoring and Youth Information Management System holds significant importance for various stakeholders within the educational environment, contributing to enhanced safety, improved project monitoring, and communication.

# 1. Local Government Officials

SK federation officials and members of the Local Youth Development Office (LYDO) will benefit from improved tools for monitoring project implementation and fund management, enabling them to make more informed decisions.

# 2. SK per Barangay

SK per barangay involved in SK projects will gain from enhanced engagement opportunities and clearer communication regarding project activities, fostering a sense of ownership and participation in local governance.

# 3. SK Project Implementation

SK project implementation provides transparency, efficiency, and accountability in youth-related projects. By presenting data collection and monitoring processes, this module ensures that SK officials and LYDO can track project progress and manage resources effectively. It enhances accessibility to accurate and real-time information, allowing for better project oversight, timely reporting, and improved fund allocation.

# 4. Researchers

Researchers can put their skills and abilities to work in their studies. It provides an opportunity for academics to apply what they have learned as information technology students.

# 5. Future Researchers

This system would be extremely beneficial to future researchers. The documentation and system will act as their previous art or literature, and the system can be modified to meet the new demand.

#### 1.6 Flow of the study



Figure: 1.1 Flow of the study of SK Project Implementation Monitoring and Youth Information Management System.

# **1.7 Definition of Terms**

This section provides clear and concise explanation of key concepts, terminology, or specialized terms used throughout the paper. This section serves to establish a shared understanding of the language and terminology specific to the research topic.

- 1. **Skeynected System** The SK Project Implementation Monitoring and Youth Information Management System that facilitates project tracking, youth data management, and information dissemination through a centralized digital platform.
- 2. User Registration Process The system includes a registration module where SK officials and youth members can create accounts, input their personal details, and verify their identities for official records.
- 3. **Project Creation and Management** SK officials can input project details, set timeline, assign responsible members, and update progress to ensure smooth implementation and monitoring.
- 4. **Real-Time Project Tracking** The system continuously monitors project status, providing real-time updates and notifications to stakeholders about progress, delays, or issues.
- 5. **Fund Allocation and Expense Monitoring** A built-in module allows officials to record, track, and manage budget allocations, ensuring transparency and accountability in financial transactions.
- 6. **Data Collection and Reporting** The system gathers data from various SK projects, processes the information, and generates comprehensive reports for decision-making and evaluation.
- 7. **Infographics and Data Visualization** The platform includes a visual representation feature to simplify complex project data, making reports more accessible and understandable.

# 2.0 REVIEW OF RELATED LITERATURE AND STUDIES

This chapter presents the various related studies and professional literature to provide the background for discussion and analysis of the findings of the present investigation made use of books, publications, studies that have some bearings on our course.

#### **Foreign Literature**

### Implementation of a Project Management System Based on Project Management

According to Ye, S., et. al., (2019), in the implementation of the project, it is essential to ensure that the project can be completed according to the intended target. Every project has a planned start time and end time, tasks, and the specific composition of the project. To ensure the project's timely completion, projects and tasks need proper monitoring and control. The current progress of the project is usually achieved through the 'milestone mission' approach in the key path of the project plan. Implementing the project tasks is only clear and visible at the milestone task. In the case of rigorous, high-quality aircraft maintenance projects that only monitor the use of milestones, problems can only be found at milestone missions and cannot be found in real-time during project execution, and there is a lack of visibility into the project's operational process. There is a certain lag in active control. In this paper, the combination of process monitoring method and overall monitoring method has the following advantages: achieve task level monitoring in the implementation of the project; real-time monitoring of project progress; improve efficiency; ensure the completion of the project on time; optimize the project schedule and cost planning; to achieve a reasonable allocation of resources and cost control; improve the quality of service to a large extent, problem handling speed and customer satisfaction .

The significant gap in our research on the SK Project Implementation Monitoring and Youth Information Management System lies in the need for a more dynamic and real-time monitoring approach to project execution, as highlighted by Ye et al. (2019). While traditional project management often relies on milestone-based assessments, this method can lead to delays in identifying issues and inefficiencies during the actual implementation phase. Our proposed system may focus on tracking progress at specific project, which can obscure real-time operational insights and hinder proactive decision-making. By integrating advanced monitoring techniques that allow for continuous oversight and task-level evaluations, the research capstone project could enhance the system's ability to detect problems as they arise, resource allocation, and ultimately ensure that projects are completed on time and within budget. This would not only improve project efficiency and quality but also increase user satisfaction by providing timely and relevant information throughout the project monitoring lifecycle.

#### **Project Management System Implementation in SMEs**

According to Alves, Pedro, et. al., (202), describe the implementation of a Project Management System (PMS), supported by a Project Management Information System (PMIS) in a SME. The implemented PMS was designed to be flexible in order to support the different organization's business areas that have different types of projects requiring different project management (PM) approaches. Therefore, a hybrid model was implemented, merging traditional with agile PM practices, and thus achieving the flexibility demanded by the organization, without unsettle projects planning. After implemented was too complex for the organization's PM maturity, and that it would be necessary to re-evaluate the scope of this implementation. So, difficulties, failures and successes experienced are presented, as well as improvement actions that may facilitate the embedment of the PMS in the organization. The conclusion was that the main problems were related to the complexity of some PMIS requirements, associated with more formal PM practices, and with the range of the initial dissemination of the system. Therefore, it was suggested a revision of the PMS to become less complex, and a new embedding approach, more realistic and measurable.

The research on the need for a more adaptable and user-friendly project management framework aligns with the varying capabilities and maturity levels of youth organizations, as highlighted by Alves et al. (2020). While our system may currently incorporate a structured approach to project monitoring, it could benefit from a hybrid model that combines traditional project management practices with agile methodologies, allowing for greater flexibility and responsiveness to the unique needs of different projects and LYDO to responsible for monitoring the project progress of each SK. Additionally, the complexity of the current system may hinder effective implementation and adoption

among users, particularly in organizations with lower project management maturity. By simplifying the user interface and embedding processes, as well as providing tailored training and support, your research could enhance the system's practicality and effectiveness, ultimately improving project outcomes and stakeholder engagement in youth initiatives.

#### Design and Implementation of Project Cost Management Information System Based on Web

According to Xiaoran Li (202), describing the efficiency of project cost information management and the overall economic benefits of the company, this paper designs a project cost information management system based on web integrated with the actual needs of project cost management. The system is based on B/S architecture and MVC development, using Ajax technology to achieve real-time interaction between web pages and database without refreshing. Then, according to the specific business, the process of project cost is divided into several stages, and the design and implementation of key modules in each stage are described in detail. The system running test results show that the project cost management system designed in this paper can interconnect data with other project systems, which greatly improves the speed and efficiency of project estimation, and its practicability and effectiveness meet the expected requirements.

The gap lies in the need for a more integrated and efficient approach to project cost information management that aligns with the specific requirements of youth development initiatives, as discussed by Xiaoran Li (2020). While the significance of our system may address project monitoring and implementation, it may offer for real-time cost management that is crucial for optimizing resource allocation and enhancing overall economic benefits. By adopting a web-based architecture with integrated modules that facilitate project and youth data exchange and real-time interaction, our system could significantly improve the speed and accuracy of project budgeting and financial tracking. Furthermore, focusing on the distinct stages of project cost management and tailoring these processes to the unique context of SK programs can enhance the system's practicality and effectiveness, ultimately leading to better financial outcomes and more sustainable project implementation.

# **Foreign Study**

### Design and Implementation of Project Cost Management Information System Based on Web

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The gap of our research on the SK Project Implementation Monitoring and Youth Information Management System in the need for a more integrated and efficient project cost information management framework that specifically addresses the unique requirements of youth programs. While Xiaoran Li (2020) emphasizes the benefits of a web-based project cost management system that utilizes real-time data interaction and modular design, our study may currently lack a similar level of integration and responsiveness. By focusing on the specific stages of project cost management relevant to youth initiatives and implementing a user-friendly interface.

#### **Project Management Information Systems in the Monitoring of Projects**

According to Crispin George (2020), describe Monitoring and information systems play a pivotal role in the management of projects. Even though, some project personnel tend to underestimate it significance in the entire process; yet it provides useful information that helps direct the project manager in executing the project when embraced. The direct goals of the project which are schedule, budget, and scope are critical for project success and must not be overlooked. The scope or boundaries of the project should be clearly delineated; in order to avoid misunderstanding and possible conflict situations. This helps in the design of the monitoring system because such a

system should capture the entire project for it to be effective. Specific project targets or milestones should be set. It is easy for project personnel to say the project is almost completed when in actual fact a significant target is yet to be achieved. Such targets aid the entire monitoring process and usually serve as performance benchmarks for the project. Development of comprehensive action plans. The action plans are the basis upon which the project is implemented; without such it becomes cumbersome for systematic implementation. Performance can be well-known when there are proper plans to be executed. • Customer satisfaction is also significant in the design of the project monitoring system. Projects are monitored to ensure that requirements set initially are achieved as planned. Thus, making customers the direct object of the whole monitoring system project management Information System (PMIS) is one that has enabled project managers to overcome the several challenges faced with the manual system of implementing projects.

The significant gap in our research is the need for a more comprehensive and user-centric monitoring framework that emphasizes the critical elements of project success schedule, budget, and scope, while also integrating customer satisfaction as a key performance indicator. As Crispin George (2020) points out, effective monitoring systems must capture the entirety of the project and include clear milestones to avoid confusion and ensure accountability. our propose system may lack a detailed framework for establishing specific project targets and action plans that facilitate systematic implementation and performance assessment. By enhancing the monitoring system to include for real-time tracking of project progress against established feedback loops.

#### **Information System in Project Management**

According to Wan, C. et. al., (2024), describe to assist the departments and agencies in project management and monitoring tasks, the government has introduced various versions of the project management information system. The implementation of PMS I1 is aimed at supporting and monitoring the entire lifecycle of Malaysia's 5-Year development programmers, producing quality projects, providing a platform for exchanging ideas and demonstrating best practices models in project implementation, and providing the source for effective decision-making based on analysis1 forecasting of project information and an auto-alert functions on problematic projects. As of 2014, all the ministries, various departments and federal agencies have adopted PMS I1 as the main project management information throughout the country.

The significance gap in project management information systems that specifically addresses the unique challenges and requirements of youth programs, as highlighted by Wan et al. (2024). While existing systems like PMS I1 support comprehensive project management and monitoring for government initiatives, they may not adequately account for the distinct dynamics and stakeholder engagement processes involved in youth development projects. Our study could benefit from developing a system that not only facilitates real-time monitoring and decision-making but also incorporates features like idea exchange and best practice sharing tailored to the SK per barangay sector. Additionally, integrating auto-alert functions for potential issues could enhance responsiveness and accountability, ensuring that youth projects are not only managed effectively but also adapted to the evolving needs of the community they serve. This would ultimately lead to improved project quality and outcomes in youth development program.

#### Local Literature

# Digital Empowerment through Implementation of Barangay Management System

According to Rosemarie M. Bautista (2019), describe, the Philippines is composed of local government units (LGUs) classified as provinces, cities, municipalities and barangays where each is allowed to manage its resources. The smallest administrative unit of the country, the barangay, serves as the foundation from which the country's success emanates. The more than forty-two thousand barangays all over the country are the primary implementers of the different visions, projects, and undertakings of the government for the community. Thus, the empowerment of individual barangays may eventually lead to a stronger, more resilient, and more prosperous society. The advent of modern technology opens wider opportunities for barangays to serve their constituents better through the computerization of the documents it provides such as barangay clearance, certificate of indulgency, letters of recommendation, annual report and others. Motivated by the vision of empowering this self-governing political system digitally, the researcher aimed to determine the advantages of ICT and develop an office management system that will hasten the transactions performed and documents provided by the barangays. The developed system was

designed to be accessed only by the authorized users to ensure the integrity of all transactions. The study determined the significant features, and the most appropriate method of system development used in the development of an effective and reliable barangay management system. The output of the study was evaluated based on the ISO 926 Software Quality Assurance Model by employees of selected barangays and was assessed with a high level of acceptability.

The significant gap is responsibilities in implementing government projects, many still lack the technological infrastructure to efficiently manage resources and documentation. Our study could address this gap by developing a system specifically designed for the unique needs of barangays, incorporating features that facilitate real-time monitoring, document management, and communication. Furthermore, ensuring that the system is user-friendly and accessible to authorized personnel can enhance the integrity of transactions and data management. By focusing on these aspects, our research could significantly contribute to the empowerment of SK per barangays, leading to more effective implementation of SK youth-oriented projects and fostering community resilience and prosperity.

# Development of an Information-Based Dashboard: Automation of Barangay Information Profiling System (BIPS)

According to Lacasandile, A. et. al., (2020), stated the issues of every community is a salient aspect that demands attention from the people in authority. These are important responsibilities of every barangay and its official in the Philippines. Profiling each household in the community using information and communication technology could achieve good governance through E-government as its core. Once profile data is aggregated, essential information could provide statistics in labor and employment, family income and expenditures, demography by (population) and (age), water and sanitation, type of housing and education. The focus are based on the profiling of Zone 42 and adding other facets as mentioned above was initiated, with the idea that educational institution around the barangay can help towards the areas included. This paper intends to aid barangay official in budget allocation and decision making in their respective governed area with the use of Barangay Information Profiling System (BIPS). Building an Information-Based Dashboard was initiated last 2016 and assessed by IT expert, was given readiness for beta launch to its target users. The functionality criteria was given a mean score of 4.47, which means that the respondents agreed that the system sequence of operation is easy to understand, and the result of their queries is correct and accurate. The system testing had a favorable result with a mean of 4.50 which means that the system passed the standard of completing, processing of a request, response time and the usage of computer resources for all of its function.

The gap in our research is the need for a more holistic and integrated approach to data utilization in barangays that goes beyond basic profiling to enhance project implementation and decision-making processes. While profiling can provide valuable insights for governance and budget allocation, there remains a lack of systems that effectively leverage this data for real-time project monitoring and management. Our study could focus on developing project monitoring tools, enabling SK barangay officials to make informed decisions based on diverse community metrics such as labor, income, and education. By creating a platform that combines data profiling with monitoring capabilities, our research could significantly enhance the capacity of barangays to implement and assess SK youth-oriented projects, ultimately contributing to more effective governance and community development.

# Local Study

# **Digital Project Management and Budgeting System**

This paper presents a platform that facilitates budgeting and project management. Every organization needs project management since it determines how tasks are assigned and how well they are accomplished within the allotted period. The significance of project scope and techniques to reduce budget overruns are highlighted in this abstract. A key component of project management is project budgeting, which accounts for budgeted, actual, and spent funds. The budget rises in the event that there is a longer delay than the anticipated completion date. Consequently, we require administration in order to monitor the project's advancement. The project involves the design and implementation of a web application tailored for project management purposes. With Accurate project management we can control the budget within the estimation otherwise the budget will be exceeded and the company will face loss. The project is developed as a Sass model which many clients can use this product on pay and use basis.

This project provides a solution for project management by using AngularJS as frontend framework, Java Springboot as a backend framework and MongoDB as a database. In this paper, we are going to discuss the frontend part and its implementation (Kalpana Devi Bai, 2024).

The significance gap in project management and budgeting solutions that specifically addresses the unique context of youth programs in barangays. While the system highlights the importance of project budgeting and monitoring through a web application, it may not fully account for the distinct challenges faced by local government units in managing youth-oriented programs. Our study could focus on developing a system that not only tracks project and program financial metrics but also integrates project scope management specific to youth projects. By incorporating user-friendly interfaces and real-time data infographics, could enhance the ability of LYDO to effectively monitor project progress, manage budgets, and ultimately improve the outcomes of community-focused programs. This would provide a more practical framework for achieving successful project implementation in SK youth development.

# Integrated Information Management System for Barangay 1-A Davao: Profiling, Project/Program Monitoring and Document Request

According to Cainong, J. et. al., (2019), describe a research study back in September 2019, where targeted a local barangay (local barrio community). The proponents create and study a web-based documentation system to keep track of records where computers are primarily the medium. It is recognized for its transformative and participatory governance serving its constituents and the community. Their mission is to provide a dynamic and supportive political and socio-economic environment through the highest standard of public administration, a bureaucratic system committed to democratizing to service.

The significance gap in our research the is need for a more comprehensive and interactive platform that not only tracks records but also actively engages the community in the governance process. Emphasizing the importance of a web-based documentation system for local barangays, it may fall short in integrating features that facilitate realtime monitoring of project implementation and enhance participatory governance among youth-focused programs. Our research could address this gap by developing a system that combines request for approval documentation program and project with interactive tools for community feedback, and project progress tracking, ultimately leading to more successful project outcomes and stronger community engagement.

# **Barangay Profiling System with Analytics**

According to Jacobe, B. et. al., (2021), profiling each household in the community using information and communication technology could achieve good governance through E-government as its core. Once profile data are aggregated, essential information could provide statistics in labor and employment, family income and expenditures, demography by population and age, water and sanitation, type of housing and education. It aimed to provide systematic profiling system which can the authorized users easily manage residents' profile, generate statistical reports, and the provision of updating the records. The researchers utilized qualitative approach using descriptive research design and systems development in collecting, analyzing the data and the design and development of the system. The researchers conclude that the developed system automates the profiling of all residents in the barangay. It stores data electronically thus, records are more organized, and also it provides access of the information needed by the barangay. Reports needed with statistical analysis can be easily generated.

The significance gap is the need for an integrated system that not only automates youth profiling but also connects this data to project management and monitoring functionalities specifically for youth programs. Effectiveness of a systematic profiling system for organizing resident data and generating statistical reports, their approach may not adequately address the dynamic requirements of project implementation and oversight in the context of youth programs. Our study could fill this gap by developing a comprehensive platform that links youth profiles with real-time project monitoring tools, enabling barangay officials to make data-driven decisions that directly impact youth development efforts.

# 3.0 RESEARCH AND METHODOLOGY AND DESIGN

This chapter described the methodologies used by the researchers to carry out the study. Methodology is a guiding approach for solving a problem, with specific components such as phases, tasks, methods, techniques and tools.

# 3.1 Environment

# The setting of the study

The researchers aim to study and develop a SK Project Implementation Monitoring and Youth Information Management System. located at LYDO Tupi, South, Cotabato.

# 3.2 Software Engineering Methodology

Agile Scrum Model was chosen as the initial methodology for the development of the SK Project Implementation Monitoring and Youth Information Management System as its stages fits the requirements on its development.



#### Figure: 3.1 Agile Scrum Model of SK Project Implementation Monitoring and Youth Information Management System.

The researchers identified the problem and found out that those problems need various features that are already enhanced in an existing system. The researchers created a title for the project and made an objective, scope, and schedules for the project.

The researchers also recognized and identified the problems arising in the design and development of the study SK Project Implementation Monitoring and Youth Information Management System.

# Sprint 1. (Enhance efficiency and accuracy of data management related to youth activities, which can significantly improve their ability to monitor project progress in real-time.)

In handling the SK Project Implementation Monitoring and Youth Information Management System, the LYDO can able to monitor project progress when their SK per barangay uploads the project to the system, The researchers planned and developed the system by defining the problems of the LYDO, SK federation, and SK barangay official made a prototype of it, and picture out the type of system to be developed. The system allows the LYDO to monitor their SK project per barangay.

The researchers came up with the design output of the study using other existing studies using the other SK Project Implementation Monitoring and Youth Information Management System as examples or inspirations using development tools such as Bootstrap and CSS framework. It has features where it can configure/change the settings after planning and designing the web system module using PHP Programming. To come up with this feature, researchers strictly follow its prototype. Developers used software and hardware requirements for the system development.

The researchers performed a series of tests to assess the system if it had any errors. Ensuring that the program was bug-free and error-free. It was examined for the system's functionality, capability, and accuracy to determine if it truly fits the requirements needed stated in Chapter 1. The researchers put the system through its paces and performed tutorial sessions with the users.

# Sprint 2 (Produce automated centralized system for managing project implementation monitoring and youth information management, as well as up-to-date information across all levels of SK per barangay.)

Providing a system that will automate managing project SK project implementation that will efficiently track the project SK youth data of every barangay. The researchers provide a tracking module to easily ensure data integration and enhance overall usability.

After planning and designing, the researcher built the SK Project Implementation Monitoring and Youth Information Management System. The researchers developed the design of the study using User Interface design tools such as Bootstrap and CSS framework. The researchers came up with the design output of the study using other existing studies using the way to track SK project implementation on the systems as examples or inspirations. It has features where it can configure/change the settings after planning and designing the web system module using PHP.

For the assurance that the features run smoothly, the researchers allow users to test the system module depending on the accuracy and correctness of the output.

#### Sprint 3 (Provides accurate entry of tracking project completion and fund allocations.)

The system allows the authorized user to track project completion and fund allocation by every barangay. It allows the system user to manage and monitor the SK official entry records. Helps them to cater to the youth project easily and hassle-free.

After planning and designing, the researcher built the system using the PHP together with the user Interface design tools development tools such as Bootstrap and CSS framework. To come up with the structures, the researchers followed its prototype. The software requirements for the system development.

The researchers performed a series of tests to evaluate and validate the system if it had any mistakes. Ensuring that the program was bug-free and error-free. It was examined for functionality and accuracy to determine if it truly fits the requirements as stated in the previous phases.

# Sprint 4 (Effectiveness of infographics used in the SK project monitoring and youth information by simplifying visual data presentations related to the SK project.)

The researchers made the system for the effectiveness of infographics used in the SK project monitoring and youth information by simplifying visual data presentations related to the SK project to make the reports' time in and out fast and timeless. The researchers planned and built the system with the help of the administrator, guard, and the parents/guardians' platform to allow the user to provide reports for external use.

The researcher planned and built the system using PHP. The researchers developed the design of the study using User Interface designing tools, specifically Bootstrap and CSS framework to come up with the structures, the researchers followed its prototype. The software requirements needed for the system development.

To ensure that the features of the system run smoothly, the researchers test the system module to test the accuracy and correctness of the output.

# Sprint 5 (Provide member identification to enhance communication and collaboration between the Local Youth Development Office (LYDO) and SK officials at the barangay level.)

Providing the objective that the system can help and to cater user authorization, to administer roles and permissions to control access to different system features. The researchers planned and built the system by outlining the necessary input forms, attributes, and prototypes and obtained illustrations of what should be put on.

After planning and designing, the researcher built the system using PHP. The researchers developed the design of the study using a user Interface designing tool, specifically Bootstrap and CSS framework. To come up with the structures, the researchers followed its prototype. The software and hardware requirements for the system application development.

The researchers performed a series of tests to validate if the system had any mistakes or errors. Ensuring that the program was bug-free and error-free. It was examined for functionality, capability, and accuracy to determine if it truly fits the requirements as stated in the previous chapter of the study

3.3 Planning/ Conception-Initiation Phase Business Model Canvas



Figure: 3.2 Business Model Canvas of SK Project Implementation Monitoring and Youth Information Management System. **3.4 Gantt chart** 

Months	Se	pte	mb	er		Oct	obe	er	N	ove	mb	er	D	ece	mb	er	J	an	uar	у	F	eb	uai	ry		Ma	rch	ı		Ap	oril			M	ay	
DESCRIPTION	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	•	2	3	4
Sprint 1																																				
Plan				Γ			Γ																					Γ	Γ				П	Γ		
Design							Γ																										П			
Build																																	П			
Test					Γ																															
Review							Γ																													
Sprint 2																																				
Plan							Γ																					Γ					П	Γ		
Design																																	П	Τ		
Build																																	П	Π		
Test							Γ																													
Review							Γ																													
Sprint 3																																				
Plan																																				
Design																																	$\Box$			
Build																																	$\Box$			
Test																																				
Review																																				
Sprint 4																																				
Plan																																				
Design																																	$\Box$			
Build																																	$\Box$			
Test																																				
Review																																				
Sprint 5																																				
Plan																																				
Design																																				
Build																																				
Test																																				
Review																																				
Legend		Co	lo	r																																
Finish																																				
Ongoing																																				
Unfinish																																				

Table 3.1 Ghantt Chart of SK Project Implementation Monitoring and Youth Information Management System.

### **3.5 Functional Decomposition Diagram**



Figure: 3.3 Functional Decomposition Diagram SK Project Implementation Monitoring and Youth Information Management System.

# 3.6 Analysis-Design Phase Use Case Diagram



Figure: 3.4 Use Case Diagram of SK Project Implementation Monitoring and Youth Information Management System.

# **Use Case Matrix**

	GENERAL CHARACTERISTICS
Intent	To identify the purpose of the features that SK Project Implementation Monitoring and Youth Information Management System.
Scope	The scope of this Use Case is only intended for LYDO and SK.
Level	Administrative
Author	Hannah Michaela Gatinao, Gemma Marabiles and Francis Tinggal.
Last Update	October 10, 2024
Status	On Going
Primary Actor	Admin/LYDO
Secondary Actor	SK Chairman
Precondition	None
<dynamic< td=""><td>The admin must explore the system for them to memorize all the functions that run without</td></dynamic<>	The admin must explore the system for them to memorize all the functions that run without
Precondition>	having a problem.
Assumptions	All the Dynamic Preconditions are already running successfully
Triggers Event	Stored youth information
	Generate project for tracking and monitoring
	Provide access permission.
Success Post	After the admin registered SK, all the function and features that based on the current problem
Condition	was running successfully.
Basic Flow	Start wed system using
	Monitor program and project.
Failed Post	SK Project Implementation Monitoring and Youth Information Management System 30-50%
Condition	running.
<model></model>	Use Case Matrix
Operation Concepts	In implementing this system, the system must run according to the features that the developers
	gathered while observing the current problem in the LYDO. Those function will be going to help the
	LDYO and SK to do their work and to reach the goals in recording the SK project monitoring and
	other modules.
Overview	All Characteristics are already functioning, analyzing all those common errors will make this
	system run successfully before implementing it.

Table 3.2 SK Project Implementation Monitoring and Youth Information Management System Use Case Matrix.

# 3.7 Storyboard

LYDO Page

Skeynected	Q Search now			Keyan Andy N/A Delgado			
Dashboard User Management ~	Barangay SK						
* 🕐 Barangay SK * 🕐 Admin Budgets	43%	<b>4%</b>	4%	43%			
	Acmonan View Delete	Bololmala View Delete	Bunao View Delete	Cebuano View Dotete			
	4%	43%	4%	4%			
	Crossing Rubber	Kablon	Kalkam	Linan			
88 Dashboard 요 User Management >	, Profile Picture	Overview Edit Profile	e Settings Change Password				
al Budgets	TEST SK. Chairman	About Biography not available. Profile Details					
	D I O IN	Full Name: TES Position: SK ( Gender: Mal Civil Status:	rî Chairman Ie				
		Birth Date: Contact: Term:					
		Status: Inac	tive				

Figure: 3.5.0 Storyboard of SK Project Implementation Monitoring and Youth Information Management System. Dashboard is a visual representation of important information

🔞 Skeynected	≡ Q Search now				🛞 Keyan Andy N/A Delgado 🚥
88 Dashboard	Projects				
<ul> <li>Project Management</li> <li>Manage Projects</li> <li>Create Project</li> </ul>	Heating	Approved		Declined	Total Projects
all Budgets	Qwe swjelgwe Status: hearing ↑	0 Days	TEST PROJECT QWEQWE Status: hearing Th	2 Days	
				_	

Figure: 3.5.1 Storyboard of SK Project Implementation Monitoring and Youth Information Management System. Dashboard is a visual representation of important information

# **SK Page**

eynected	E Search Q	🧟 Porofile K. Ander
43%	Acmonan Youth Forme / Manage Youth hotdog Delgado	
Welcome, Admin	OCHCER BREN DATE AGE	
28 Dashboard		
Manage Pr	oject	
SKeynected	E Search Q	🦉 - Øbrofile K. An
SKeynected	gwe and Materials Tables Home / Tables Monope Projects	Ørofile K. An Materials Used
SKeynected	gwe and Materials Tables Home / Tables Monage Projects	Materials Used
SKeynected	Search     Q      qwe and Materials Tables      Home / Tables      Monage Projects      10 - entries per page     Search      Project Name Code Description Duration Status Specific Job Operation Cost P	Materials Used 10 - entries per page Material Qty Total Action
SKeynected Weicome, Admin 88 Dashboard	gwe and Materials Tables         Home / Tables         Monage Projects         10 wentries per page         Project Name Code Description Duration Status Specific Job Operation Cost P         qwe       SSP- qwjeiqwe         3688	Materials Used 10 - entries per page Material Qty Total Action qwe 2 200.00 P T gwe 2 10.00 P T
SKeynected	gwe and Materials Tables         Home / Tables         Home of Tables         Manage Projects         10 w entries per page         Project Name Code Description Duration Status Specific Job Operation Cost P qwe 5KP- qwjeiqwe 0 Hearing qwjeoiqw wqeqwe 210.00 D 3658	Materials Used 10 v entries per page Material Qty Total Action qwe 2 200.00 P fil qwe 2 10.00 P fil
SKeynected Welcome, Admin Bashboard Anaage Accounts Manage Projects A	gwe and Materials Tables         Home / Tables         Manage Projects         10 wentries per page         Project Name Code Description Duration Status Specific Job Operation Cost P         qwe       58P-         3688         showing 1 to 10 of 100 entries       1	Materials Used 10 - entries per page Material Qty Total Action qwe 2 200.00 P TO qwe 2 10.00 P TO qwe 2 10.00 P TO qwe 1 0 10 of 100 entries - 1 2 3 4 5 -

Figure: 3.5.2 Storyboard of SK Project Implementation Monitoring and Youth Information Management System. Dashboard is a visual representation of important information



Figure: 3.5.3 Storyboard of SK Project Implementation Monitoring and Youth Information Management System. Dashboard is a visual representation of important information

# **Registration Forms Page**

Personal Information		
Last name (Apilyedo)	Sex	
Last name	Male Female Other	
First name (Pangalan)	Age	
First name	Age	
Middle name (Put N/A if not applicable)	Barangay	the second se
Middle name	Acmonan	
Complete Address	Gender Preference	
	Girl	and the second se
	4	

SKeynected			
1	Youth Survey Form	QR Code	
20	Youth Name HAMBURGER	i statio Zielia	
	Barangay Boloimala		
1	Generate QR Code		

# Reports

SKeynected	E Search		Q							4	3 <i>C</i> P	ofile K. Anders
	qwe and Material	s Tables										
5)5	Manage Projects								Materials (	Jsed		
Welcome, Admin	10 v entries per pa	ge			5	earch			10 v ent	ries per p	age	
	Project Name Code	Description	Duration	Status	Specific Jo	b Opera	tion Cost	P	Material	Qty	Total	Action
20 Dashboard	qwe SKP-	qwjeiqwe	0	Hearing	qwjeoiqw	wqeqv	ve 210.	.00 D	qwe	2	200.00	00
음 Manage Accounts	3688							P	qwe	2	10.00	00
	Showing 1 to 10 of 100	entries				1 2 3	4 5		Showing 1 t	o 10 of 10	0 entries	
□ Manage Projects ∧	showing i to to of too	encies							1.12	. 1	2 3	45·
器 Manage Youth												



Figure: 3.5.5 Storyboard of SK Project Implementation Monitoring and Youth Information Management System. Dashboard is a visual representation of important information

#### 3.8 Class Diagram



Figure 3.4 SK Project Implementation Monitoring and Youth Information Management System Class Diagram.

# 3.9 Sequence Diagram



Figure 3.5.1 LYDO Sequence Diagram SK Project Implementation Monitoring and Youth Information Management System.



Figure 3.5.2 LYDO Sequence Diagram SK Project Implementation Monitoring and Youth Information Management System.

3.10 Activity Diagram



Figure 3.6.1 SK Project Implementation Monitoring and Youth Information Management System LYDO Activity Diagram.



Figure 3.6.2 SK Project Implementation Monitoring and Youth Information Management System SK Activity Diagram.

# 3.11 Database Design



Figure: 3.6 Database Design of SK Project Implementation Monitoring and Youth Information Management

#### System.



#### 3.12 Entity Relationship Diagram

Figure: 3.7 Entity Relationship Diagram of SK Project Implementation Monitoring and Youth Information Management System.

# **3.13 Data Dictionary**

Table 3.2.0 Data Dictionary of SK Project Implementation Monitoring and Youth Information Management System.

Table name	Al	DMIN/GUARD
Attribute	Туре	Description
Admin_id (PK)	INT(11)	Unique identifier assigned to each category in the system.
Username	VARCHAR (100)	Indicate the username.
Password	VARCHAR (100)	Indicate the password.

# Table 3.2.2 Data Dictionary of SK Project Implementation Monitoring and Youth Information Management System.

Table name	S	SK_ACCOUNT
Attribute	Туре	Description
Sk_id (PK)	INT(11)	Unique identifier assigned to each user in the system.
Brgy	VARCHAR(	Barangay of the SK registered.
	100)	
Sk_name	VARCHAR(	Full name of the SK, typically including both first and last
	100)	names.
Username	VARCHAR(	Assigned SK username.
	100)	
Password	VARCHAR(	Assigned SK password.
	100)	

# Table 3.2.3 Data Dictionary of SK Project Implementation Monitoring and Youth Information Management System.

Table name	Pl	ROJECT
Attribute	Туре	Description
Project_id	INT(11)	Used as a primary key to distinguish and reference
(PK)		individual entries.
Brgy	VARCHAR(	Name of the barangay.
	100)	
Type_project	DBURITYP	Type of the project.
	E(100)	
Image	BLOB	Indicate the photo of upload project.
Sk_id (FK)	INT(11)	Indicate the id of the SK.

#### Table 3.2.4 Data Dictionary of SK Project Implementation Monitoring and Youth Information Management System

Table name	RI	EQUEST
Attribute	Туре	Description
Request_id	INT(11)	Used as a primary key to distinguish and reference
(PK)		individual entries.
Desc	VARCHAR(	Document description.
	100)	
Document	DBURITYP	Upload document.
	E(255)	
Status	VARCHAR(	Indicate the status of upload documents.
	100)	
Sk_id (FK)	INT(11)	Indicate the id of the SK.

Table 3.2.5 Data Dictionary of SK Project Implementation Monitoring and Youth Information Management System

Table name	Ι	INFOGRAPHICS	
Attribute	Туре	Description	
Info_Id	INT(11)	Unique identifier assigned to each log history in the auto	
		number table	
Age_classifi	VARCHAR(	Unique identifier of student	
cation	100)		
Population	VARCHAR(	Time in and out of the students.	
	100)		

Table 3.2.6 Data Dictionary of SK Project Implementation Monitoring and Youth Information Management System.

Table name	INFOGRAPHICS		
Attribute	Type Description		
Youth_Id	INT(11)	Unique identifier assigned to each log history in the	
		auto number table	
Lastname	VARCHAR(	Indicate the last name of the youth	
	100)		
Firstname	VARCHAR(	Indicate the first name of the youth	
	100)		
Mi	VARCHAR(	Indicate the middle name of the youth	
	50)		
Sex	VARCHAR(	Indicate the sex of the youth	
	50)		
Age_classification	VARCHAR(	Indicate the age classification of the youth	
	100)		
Gender_preferenc	VARCHAR(	Indicate the gender preference of the youth	
е	100)		
Civil_status	VARCHAR(	Indicate the civil status of the youth	
	50)		
Barangay	VARCHAR(	Indicate the barangay of the youth	
	100)		
Place_of_birth	VARCHAR(	Indicate the birth of place of the youth	
	100)		
Religion	VARCHAR(	Indicate the religion of the youth	
	100)		
Cell_num	VARCHAR(	Indicate the cell number of the youth	
	11)		
Date_birth	VARCHAR(	Indicate the birth date of the youth	
	100)		
Place_birth	VARCHAR(	Indicate the birth place of the youth	
	50)		
Facebook_name	VARCHAR(	Indicate the Facebook name of the youth	
	100)		
Youth_classificatio	VARCHAR(	Indicate the youth classification of the youth	
n	100)		
Educational_backg	NCLOB	Indicate the educational background of the youth	
round			

### 3.13 Network Design

Network design is the integration of different network devices to achieve end-to-end communication between network hosts, and to identify what type of topology is going to be used in SK Project Implementation Monitoring and Youth Information Management System.



Figure: 3.8.0 SK Project Implementation Monitoring and Youth Information Management System network design.

#### 3.13 Network topology

The network topology that will be used will be a Star Topology for communication with computer devices. In a star topology, the SK monitor and admin can connect with the help of a cloud network. This cable is called a central node, and all other nodes are connected using this central node. The network used mediation of network server and cloud server



Figure: 3.8.1 SK Project Implementation Monitoring and Youth Information Management System network topology.

3.13 Development/ Construction/ Build Phase

#### **Technological Stack**

Technology stack (development)



Figure: 3.9 Entity Relationship Diagram SK Project Implementation Monitoring and Youth Information Management System.



#### Software Specification

-	
Language	: PHP
Technology	: HTML, CSS AND PHP
Database	: MySQL WAMP Server
IDE	: Visual Code Studio
Operating System	: Microsoft Windows 10

#### Hardware Specification

Processor	: Inter® Core <sup>TM</sup> i3-6006U
Hard Disk	: 464GB
RAM	: 8192MB

#### **Program Specification**

Language	: PHP
Database	: MySQL Wamp Server
IDE	: Visual Code Studio

#### 3.14 List of Modules

#### Manage SK Module

This module allows users to create and maintain individual accounts for each registered member, capturing essential information such as personal details, contact information, and demographic data. Ensuring that all necessary documentation is submitted and verified.

#### Manage Youth Module

This module enables administrators to review and manage profiles for each youth member, including vital information such as demographics, skills, interests, and participation history in various programs and projects registered by the SK.

#### **Manage Project Module**

This function allows LYDO to track project program timelines and, deliverables in real time, ensuring that all aspects of project implementation are aligned with established goals and objectives of every SK in deferent barangay. It provides tools for documenting project activities, collecting performance data, and assessing outcomes through predefined indicators.

#### Manage Request Project Module

This module allows SK to create detailed project requests, outlining objectives, budgets, timelines, and expected outcomes, which can then be submitted for approval to LYDO. The module facilitates efficient tracking of the approval process, providing notifications and updates on the status of each request.

# 3.15 Testing/Quality Assurance Phase

# 3.15.1 Unit Testing

The researchers are testing every function of the system to ensure that the codes entered matches every feature of the system. They also make sure that the data in the system matches with the data in the database.

Implementing unit testing for a Muslim Affairs Office Information System involves ensuring each component of the system functions correctly before integrating. This approach helps identify and fix bugs early, improving the system's reliability and maintainability. Here's a structured approach to conducting unit testing for such a system:

- Accessibility: let the users to evaluate the key variables of the software modules if it is working well. It also let them to decide whether it fits with the user interface design connects well with the system.
- Accuracy: let the users to evaluate the performance in terms of speed and correctness of the data initiated and encoded and evaluates forms and results by which all information that the software application is aligned with the standard format requirement of the software application. Analyze test outcomes to identify any failures. Investigate and fix the underlying issues in the codebase. Re-run the tests to confirm the fixes.

• Functionality: let the users to evaluate the system application of its modules functions. Detailing whether all specific objectives was met and properly done. As the development progresses and new features are added, continuously update and add new tests to cover the changes.

# **3.15.2 Integration Testing**

The researchers are testing all the system modules that are integrated logically and tested application project. focuses on testing the interactions between different components or modules of the system to ensure they work together as intended. This type of testing is crucial because it helps identify issues that may not be apparent during unit testing, such as problems with data flow, interface mismatches, and integration



# Figure 3.11 SK Project Implementation Monitoring and Youth Information Management System Integration Testing

# 3.15.3 Integration Testing: Bottom-Up Integration Approach

ID	Test Case Objective	Test Case Description	Expected Result
1	monitor project progress in real time;	Review related to youth	Display project.
		activities.	
2	Manage youth information	Centralized system for	Provide project
	management;	managing project implementation.	records.
3	track project completion and fund	Review and track project	Display fund
	allocations;	completion and fund allocations.	allocation.
4	view infographics used in the SK	Review infographics used in	Generate report.
	project and youth information by simplifying	the SK project and youth	
	visual data presentations related to the SK	information.	
	project; and		
5	youth registration module and member	Display client reports and	Generate youth
	identification.	information for evaluation.	information.

# Table 3.3.0 Integration Testing Test Case Table

# 3.15.4 Alpha Testing

The researchers trying and testing the system to identify the errors before implementing the system to ensure that all the features and objectives that the Skeynected: SK Project Implementation Monitoring and Youth Information Management System needs will match exactly to the system being proposed. To make sure that everything in the system is well in order to be usable in its capability.

#### 3.15.5 Evaluation Methodology

Evaluation of any system is a crucial in its development. This will be determined if the system works properly, meet the objectives, and satisfies the users.

The study used the descriptive-development method of research to evaluate the system's functionality, accessibility, and acceptability of the system.

#### 3.15.6 Alpha Testing

The respondent of the study was composed of 2 possible users admin and SK Official.

This study used a checklist and a rating scale questionnaire to gather the needed data and the responses to evaluate the system.

The checklist was used to evaluate the functionality contains a checklist form. included in the system, and for the accuracy, and accessibility contains the list of all system objectives and deliverables that the researchers want the respondents to check and evaluate. The frequency counts and the percentage will be computed.

Weighted Mean. This tool was used to provide answer to the questions. The formula is:

$$WM = \frac{\sum_{i=1}^{n} Wi \, x \, Xi}{\sum_{i=1}^{n} Wi}$$

Where:

WM = weighted mean X = number of respondents Wi = Weight given to each respondent N = number of cases

To check the functionality, accessibility, acceptability, and accuracy of the system, a 5-point Likert Scale shown in the table. The mean was computed and interpreted in the table below.

### Table 3.3.1 Interpretative Scale used to interpret the Weighted Mean

CODE	MEAN RANGE	DESCRIPTION	
5	4.20-5.00	Strongly Agree	
4	3.40-4.19	Agree	
3	2.60-3.39	Moderately Agree	
2	1.80-2.59	Disagree	
1	1.00-1.79	Strongly Disagree	

#### 3.15.8 Acceptance Testing

This project tested and evaluated at the LDYO Office. This was participated with the admin and SK Official. This project made used of the evaluation questionnaire and a follow up interview in collecting the data. Questionnaire were constructed administered to the respondents.

#### Table 3.3.2. Evaluation Result of the System's Functionality

Functionality Criteria	Weighted Mean (WM)	Interpretation
1. The system accurately measures youth reports.	4.4	Agree
2. The system assists users in finding relevant project information.	4.23	Strongly Agree
3. The system provides posted infographic reports.	4.8	Agree
4. The system generates reports and information.	4.33	Moderately Agree
5. The system ensures data security and privacy of youth information.	4.5	Strongly Agree
6. The system allows real-time project tracking.	4.6	Strongly Agree

Overall Weighted Mean	4.51	Strongly Agree
10. The system provides notifications or alerts for pending tasks.	4.45	Agree
9. The system enables easy retrieval of youth and project records.	4.55	Strongly Agree
8. The system provides clear and accessible user navigation.	4.7	Strongly Agree
7. The system enables users to request and approve project proposals efficiently.	4.3	Agree

Table 3.3.2 The evaluation results indicate that the system's functionality is highly effective, with an overall weighted mean of 4.51, interpreted as Strongly Agree. This suggests that the majority of respondents find the system capable of meeting its intended objectives efficiently. Key features such as real-time project tracking (4.6), data security and privacy (4.5), and easy retrieval of records (4.55) received strong positive feedback, highlighting the system's ability to manage and safeguard youth and project information effectively. Additionally, respondents appreciated the user-friendly navigation (4.7) and notification system (4.45), which help streamline operations and ensure timely updates. Moreover, the system's capability to generate reports (4.33) and provide infographic displays (4.8) was well-received, reinforcing its role in simplifying data presentation for users. While the approval and request process for project proposals (4.3) were rated positively, it suggests potential areas for further optimization to enhance efficiency. Overall, the system demonstrates strong functionality and reliability, making it a valuable tool for project monitoring and youth information management. Continuous improvements based on user feedback could further enhance its performance and usability.

Accuracy Criteria	Weighted Mean (WM)	Interpretation
1. The system allows users to upload and give feedback.	4.69	Strongly Agree
2. The details for the SK project report and evaluation are well-identified.	5	Strongly Agree
3. The system provides accurate and real-time project updates.	4.75	Strongly Agree
4. The system ensures error-free data entry and processing.	4.65	Strongly Agree
5. The uploaded reports maintain accuracy and consistency.	4.8	Strongly Agree
6. The system validates SK project details before final submission.	4.7	Strongly Agree
7. The admin can review and approve requests with accuracy.	4.6	Strongly Agree
8. The system provides clear and reliable data retrieval.	4.85	Strongly Agree
9. The system prevents duplication of project and youth records.	4.68	Strongly Agree
10. The users can properly update their details and modify necessary information.	5	Strongly Agree
Overall Weighted Mean	4.79	Strongly Agree

Table 3.3.3. Evaluation Result for System's Accuracy

Table 3.3.3 shows the result of the evaluation results indicate that the system's accuracy is highly reliable, with an overall weighted mean of 4.79, interpreted as Strongly Agree. This suggests that users find the system highly precise in managing data, processing requests, and maintaining consistency. The highest ratings (5.00) were given to the system's ability to ensure clear project details and accurate user updates, demonstrating its effectiveness in preventing errors and maintaining data integrity. Additionally, the real-time project updates (4.75), report accuracy (4.80), and reliable data retrieval (4.85) received strong positive feedback, reinforcing the system's role in providing

accurate and timely information for SK officials. The ability to validate project details (4.70) and prevent duplicate records (4.68) ensures efficient database management, reducing inconsistencies. Overall, the system is highly accurate and dependable, making it a valuable tool for youth information management and project monitoring. While the results are overwhelmingly positive, continuous system enhancements and periodic accuracy checks can further maintain its reliability.

Acceptability Criteria	Weighted Mean (WM)	Interpretation
1. The system displays desired selected reports in every barangay.	4.33	Strongly Agree
2. The system presents clear and well-structured infographic reports.	4.33	Strongly Agree
3. The system provides accurate data when SK officials upload project reports and requests.	5	Strongly Agree
4. The system presents detailed information with clarity.	4.33	Strongly Agree
5. The system allows seamless access to reports through a web platform.	4.33	Strongly Agree
6. The system ensures a user-friendly interface for ease of use.	4.7	Strongly Agree
7. The system provides timely updates and notifications.	4.55	Strongly Agree
8. The system allows efficient navigation for project tracking.	4.6	Strongly Agree
9. The system performs well with minimal errors and downtime.	4.8	Strongly Agree
10. The system meets the needs and expectations of its users.	4.85	Strongly Agree
Overall Weighted Mean	4.58	Strongly Agree

Table 3.3.4 shows the result of the evaluation results show that the system's acceptability is highly satisfactory, with an overall weighted mean of 4.58, interpreted as Strongly Agree. This indicates that users find the system well-designed, functional, and easy to use. The highest rating (5.00) was given for the system's ability to provide accurate data when SK officials upload project reports and requests, demonstrating its effectiveness in managing and processing critical information. Additionally, features such as infographic presentation (4.33), user-friendly interface (4.70), seamless web access (4.33), and efficient project tracking (4.60) were well-received, reinforcing the system's role in simplifying SK project monitoring and youth information management. The timely updates (4.55) and minimal errors (4.80) further enhance its reliability and user satisfaction. Overall, the system is widely accepted and appreciated by users, proving its effectiveness in facilitating SK project management. Continuous enhancements and responsiveness to user feedback will help maintain and further improve system acceptability.

Evaluation Criteria	Weighted Mean (WM)	Interpretation
Functionality	4.51	Strongly Agree
Accuracy	4.79	Strongly Agree
Acceptability	4.58	Strongly Agree
<b>Overall Weighted Mean</b>	4.63	Strongly Agree

Table 3.3.5 shows the overall result of the system's The overall evaluation results indicate that the system is highly effective and reliable, with an overall weighted mean of 4.63, interpreted as Strongly Agree. This means that users find the system functional, accurate, and widely acceptable for project monitoring and youth information

management. Among the evaluation criteria, Accuracy (4.79) received the highest rating, highlighting the system's ability to deliver precise and error-free data processing. The Acceptability rating (4.58) confirms that users find the system user-friendly and accessible, while the Functionality rating (4.51) ensures that it meets the required performance standards. Overall, the system is well-received and effectively supports SK officials and LYDO in managing and tracking youth projects efficiently. Moving forward, continuous system improvements and user feedback integration will further enhance its effectiveness and sustainability.

# 3.16 Implementation/Deployment Phase

#### **3.16.1 Deployment Diagram**

The diagram shows the flow of the system on how to utilize and LYDO on how convenient having system. This shows the process of data, and flows on how the systems works.



Figure 3.12 SK Project Implementation Monitoring and Youth Information Management System Deployment Diagram.

#### 3.17 Human Resources Specification

Human Resource Specifications is a list of recommended qualities that a person must meet in order to use the system created.

Required:

Admin/LDYO

• Must be the within LYDo office.

**Required Skills:** 

SK Official

• Every action in the system requires to review uploaded information and reports. A SK Official who is a regular user can only perform create Project reports functions in the system, register youth data and other in the system.

#### 3.18 Risk Management Plan/ Framework

This will help to minimize the errors and threat of the system; it helps to know the possible risk in order to be aware and learn on how to deal some risk/issues in future.

#### 3.19 Challenges for Risk Management

Several challenges are described below. They should be taken into account when managing risks in pursuit of and Skeynected: SK Project Implementation Monitoring and Youth Information Management System application trustworthiness.

#### 3.20 Risk Measurement

Skeynected: SK Project Implementation Monitoring and Youth Information Management System application risks or failures that are not well-defined or adequately understood are difficult to measure quantitatively or qualitatively. The inability to appropriately measure risks does not imply that an LYDO Office Information System necessarily poses either a high or low risk. Some risk measurement challenges include: Risks related to third-party software, and data: Third-party data or systems can accelerate research and development and facilitate technology transition. They also may complicate risk measurement. Risk can emerge both from third-party data software itself and how it is used



Figure 3.13 SK Project Implementation Monitoring and Youth Information Management System Risk Management Framework.

# Identification

With this phase, the developers will be able to identify the occurring risk. They will specify all the threats and risk that may happen in Skeynected: SK Project Implementation Monitoring and Youth Information Management System. Assessment

In this phase, developers will evaluate each risk by determining the likelihood of it and the level of impact it might have.

# Mitigation

With this phase, developers will process of changes to reduce the impact and outcome of each risk appeared and response plan when it happens.

# Monitoring

In this phase, the developer will review and study the progress of the plan and inspect if a risk occurred but missed on a continuous basis.

# 4.0 CONCLUSION AND RECOMMENDATION

# 4.1 Conclusion

The development of the SK Project Implementation Monitoring and Youth Information Management System successfully addresses the challenges faced by the Local Youth Development Office (LYDO) and SK barangay officials in managing youth projects and profiling information. By integrating a centralized and automated system, the project enhances efficiency in tracking project progress, fund allocation, and youth data management. The system simplifies information dissemination, improves decision-making processes, and fosters greater transparency in SK governance. Overall, the system contributes to a more structured and accountable implementation of SK programs, ensuring that resources are effectively utilized to benefit the youth sector.

# 4.2 Recommendation

To ensure the continued effectiveness of the system, it is recommended that the LYDO and SK officials conduct regular system evaluations and updates to address any emerging needs or technical issues. Training sessions should be provided for users to maximize the system's functionality and adoption. Additionally, expanding the system's capabilities such as integrating a mobile application and adding real-time analytics can further enhance accessibility and efficiency. Encouraging user feedback and continuous system improvements will contribute to a more sustainable and impactful youth development initiative.

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