



# **MANAGEMENT INFORMATION SYSTEM FOR CHURCH OPERATION**



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Matric No: U2102825


Supervisor: Dr. Hoo Wai Lam



# Introduction

**This management information for church operations ranges from congregational administration to communication and event coordination.**

**The Mar Thoma Church, Klang has been relying on traditional paper-based operations since 2005 which can be a challenge as the church grows larger over time. Therefore, digitalizing the process of administration, event coordination and communication can become a solution to these issues.**



# Problem Statements

1

The members have to collect the membership and other forms by hand from the church premises. This consumes a valuable amount of time for the management

2

Loss of valuable historical records through destruction or neglect.

3

Difficulties in finding members and church information when needed

# Objectives



1

To create a comprehensive database that provides information on the availability details and the issue details along with the member details

2

Development and implementation of an information retrieval system for the members and the management of the church

3

To automate the range of activities and processes that need to be performed by the management before a request

# Literature Review

**Web-based Church Management system for Asokwa Pentecost, Mercy  
Vicentia Nazzar, Kwame Nkrumah University of Science and Technology, 2018**

## **Limitation**

- the system may be intuitive, leading to usability challenges for church administrators and member

## **Solution**

- Conduct user experience (UX) research and usability testing to identify pain points and areas for improvement

# Literature Review

## Church Management System, Capstone, 2020

### Limitation

- Struggles to accommodate the growing needs of churches with increasing memberships, activities, and data volume

### Solution

- cloud-based architecture can enhance scalability by leveraging cloud resources to dynamically adjust to changing demands.



# Literature Review

**The Design and Assessment of a Church Records and Information Management System, Cris Norman P. Olipas , Romabelle Cheline M. Sawit , Rubelyn M. Esperon, 2021**

## **Limitation**

- **Lack of scalability as churches grow and expand their operations**

## **Solution**

- **Implement efficient data storage and retrieval mechanisms caching strategies, and query optimization.**

# Comparison

Features System	Document Management	Event Management	Financial Management	Communication	Administrative Tools
Shelby Systems					
Servant Keeper					
Church Community Builder					
Church Management System					



# Comparison


Features System	Document Management	Event Management	Financial Management	Communication	Administrative Tools
Shelby Systems					


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# Comparison

Features System	Document Management	Event Management	Financial Management	Communication	Administrative Tools
Servant Keeper					

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# Comparison

Features System	Document Management	Event Management	Financial Management	Communication	Administrative Tools
Church Community Builder					

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BUILDER

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automatically be on your website. Welcome to  
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Get Started

Three decorative green wavy lines of varying lengths and curves, positioned in the bottom right corner of the image.

# Methodology (Waterfall)

1

## Requirements Gathering

- Understanding the needs of church leaders, members, and administrators
- Stakeholder interviews and meetings
- Literature Review

2

## Design

- Determine Modules
- Design User Interface
- Architecture Diagrams
- Database Schemes
- User Interface Mockups

4

## Testing

- Verify and Validate functionality
- Identify defects, bugs, and issues

3

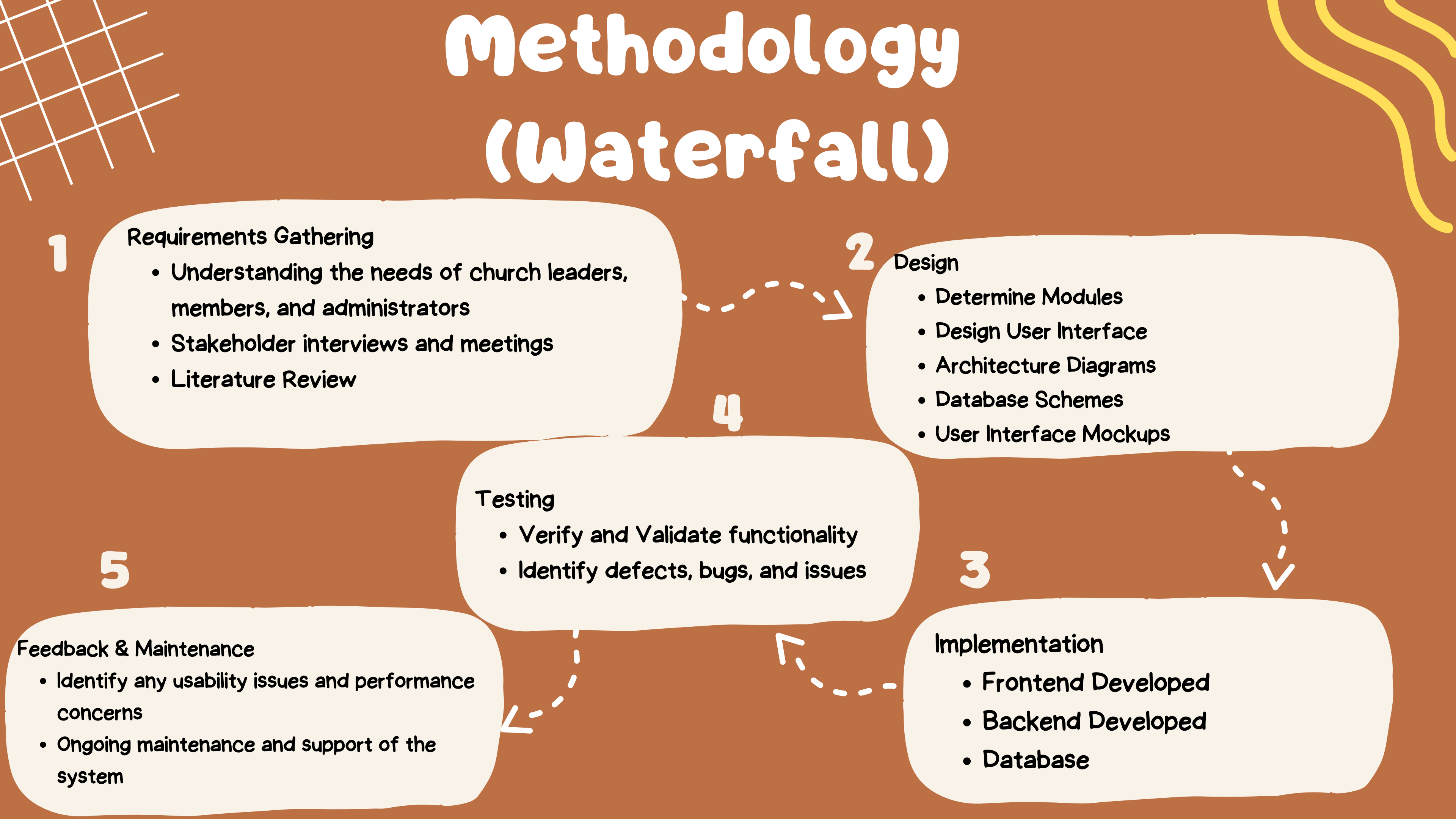
## Implementation

- Frontend Developed
- Backend Developed
- Database

5

## Feedback & Maintenance

- Identify any usability issues and performance concerns
- Ongoing maintenance and support of the system



# Requirements



**Stakeholder interview and  
meetings**



**Study required output  
format provided by  
stakeholders**



# Requirements

## User Authentication

- Secure authentication mechanism with role-based access control

## Document Management System

- Template for all the documents
- Streamlined meeting processes and document handling
- Digitalization of all documents

## Financial Management Tools

- Budgeting tools with alerts for overspending
- Transparent financial and reporting

# Requirements

## Event Calendars

- Display calendar interface showing upcoming events
- Provide options for users to book specific dates or church facilities for personal or group events

## Access to Educational Materials

- Provides access to digital library and study materials

## Discussion Forums and Community Engagement

- Provide online discussion forums where users can engage in conversations on various topics



# Requirements

## Frequently Asked Questions (FAQs) Section

- Searchable FAQs section with detailed answers to common queries

## Online Contact Form

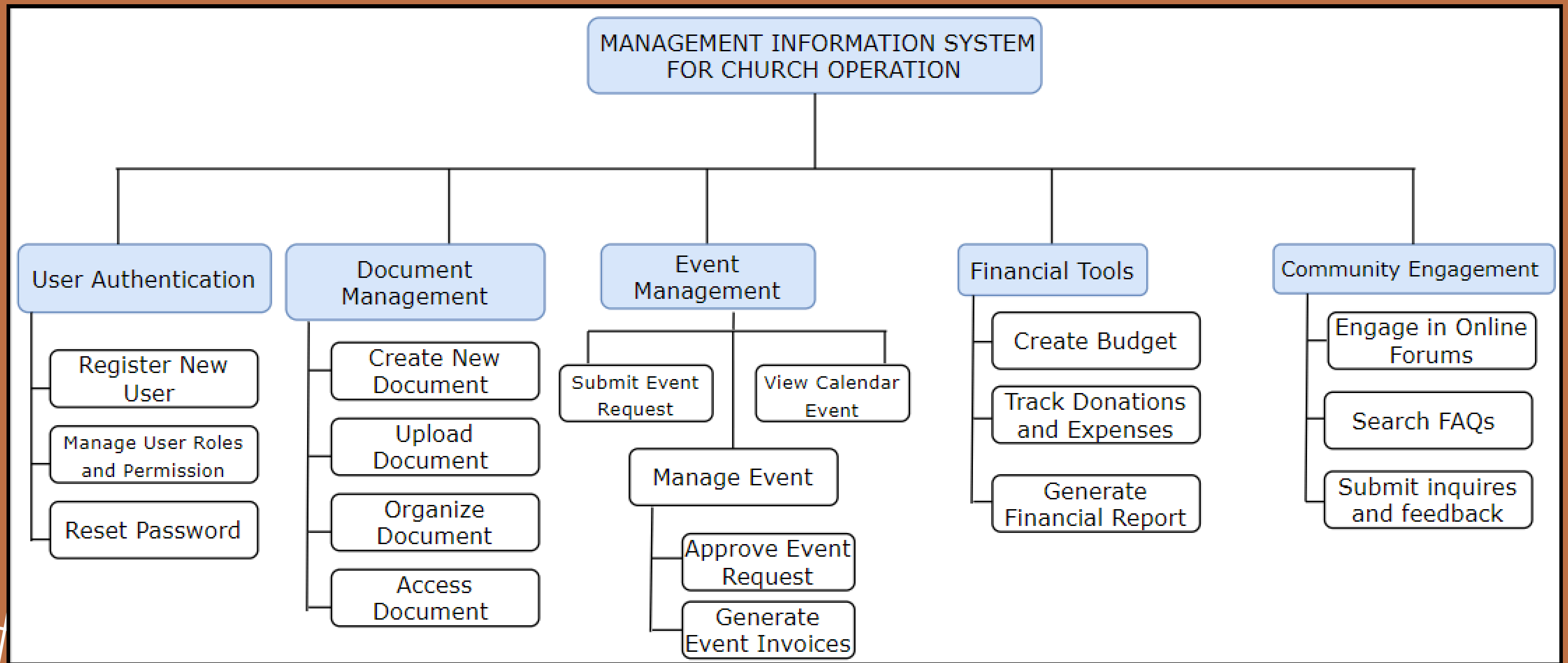
- Online contact form
- The system allows to make inquiries, complaints, or provide feedback conveniently

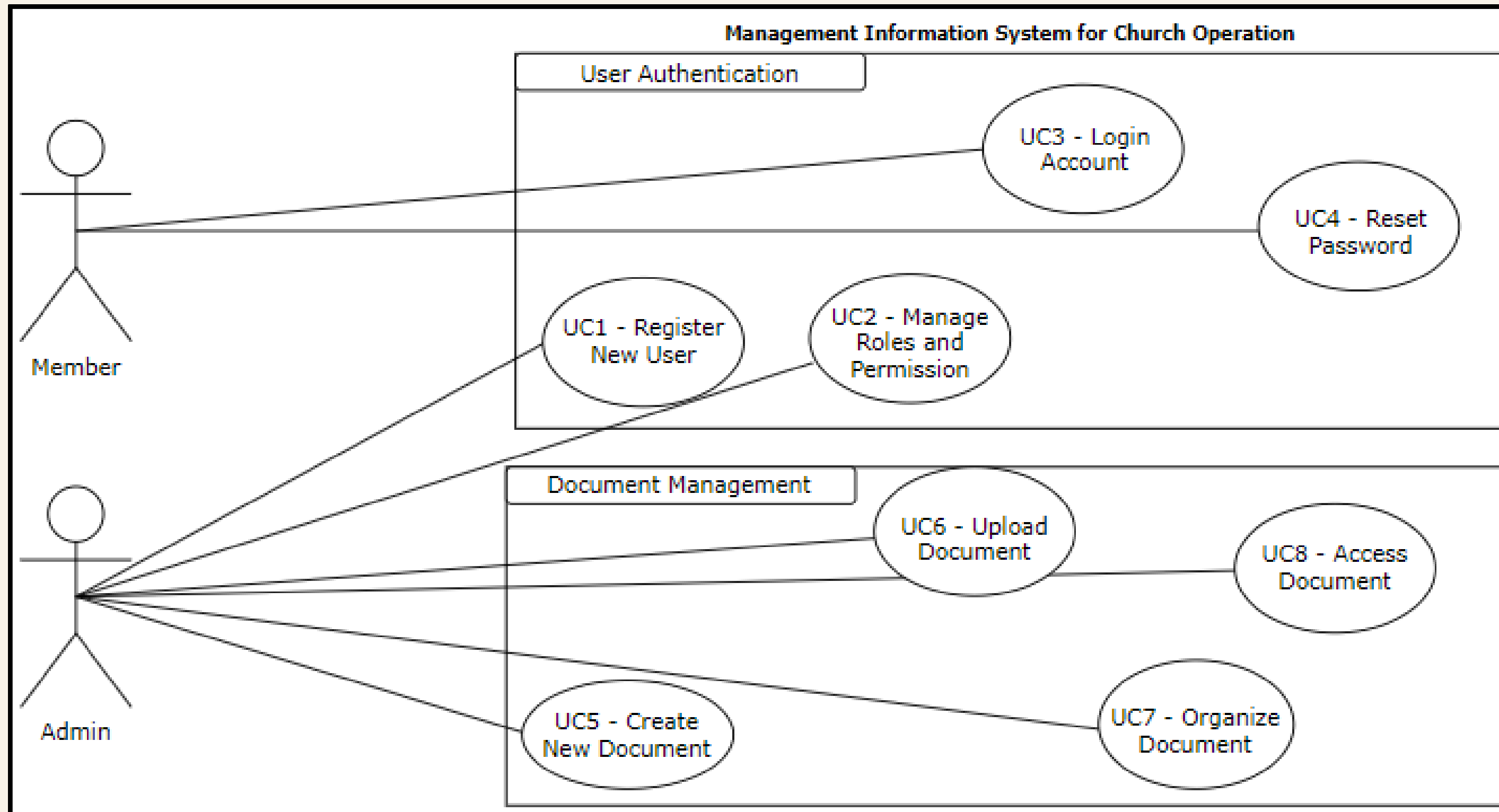
# Requirements

## Non - Functional Requirements

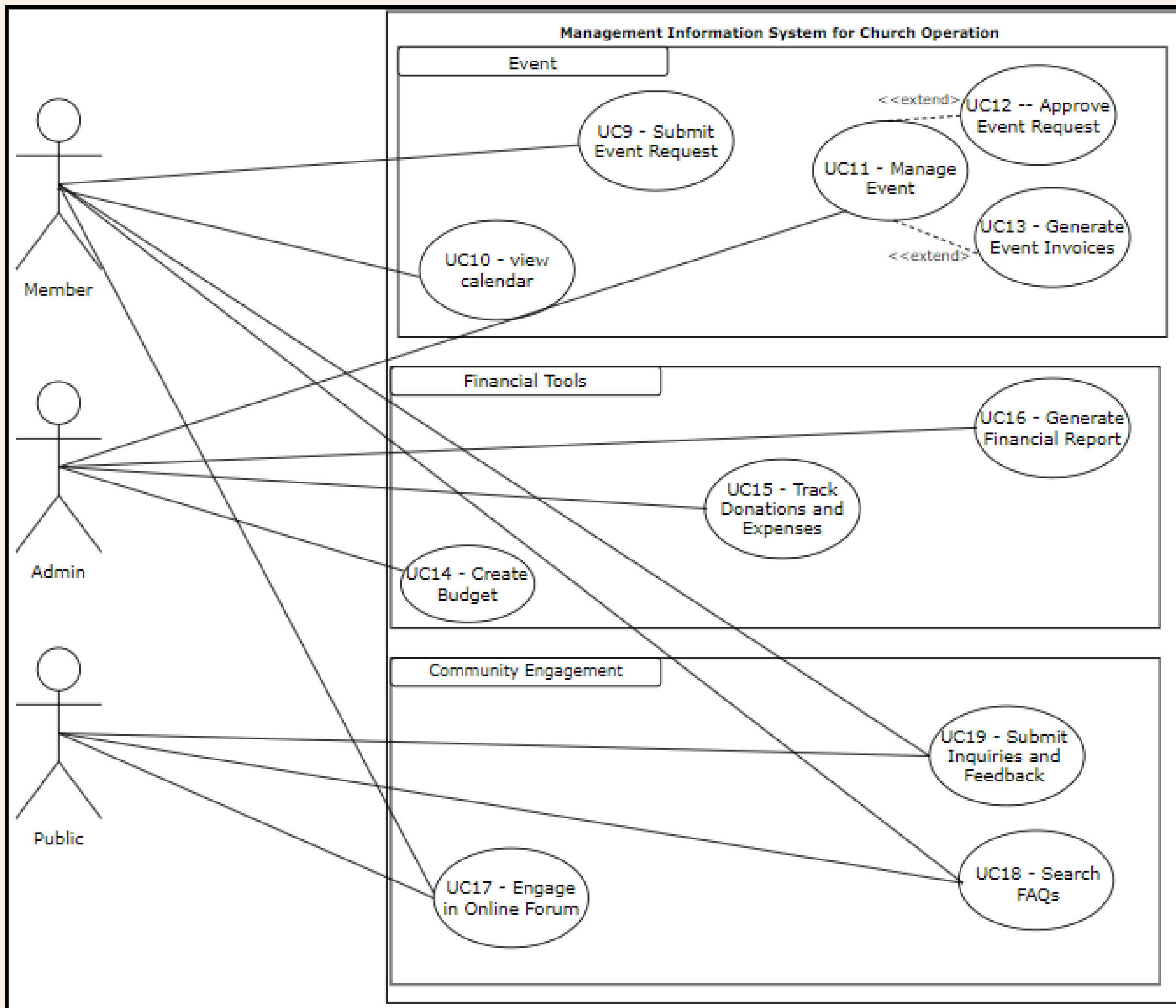
- A system that provides essential information about the church events, members, and documents.
- To develop a web application that has a user-friendly interface

# Functional Decompositional Diagram



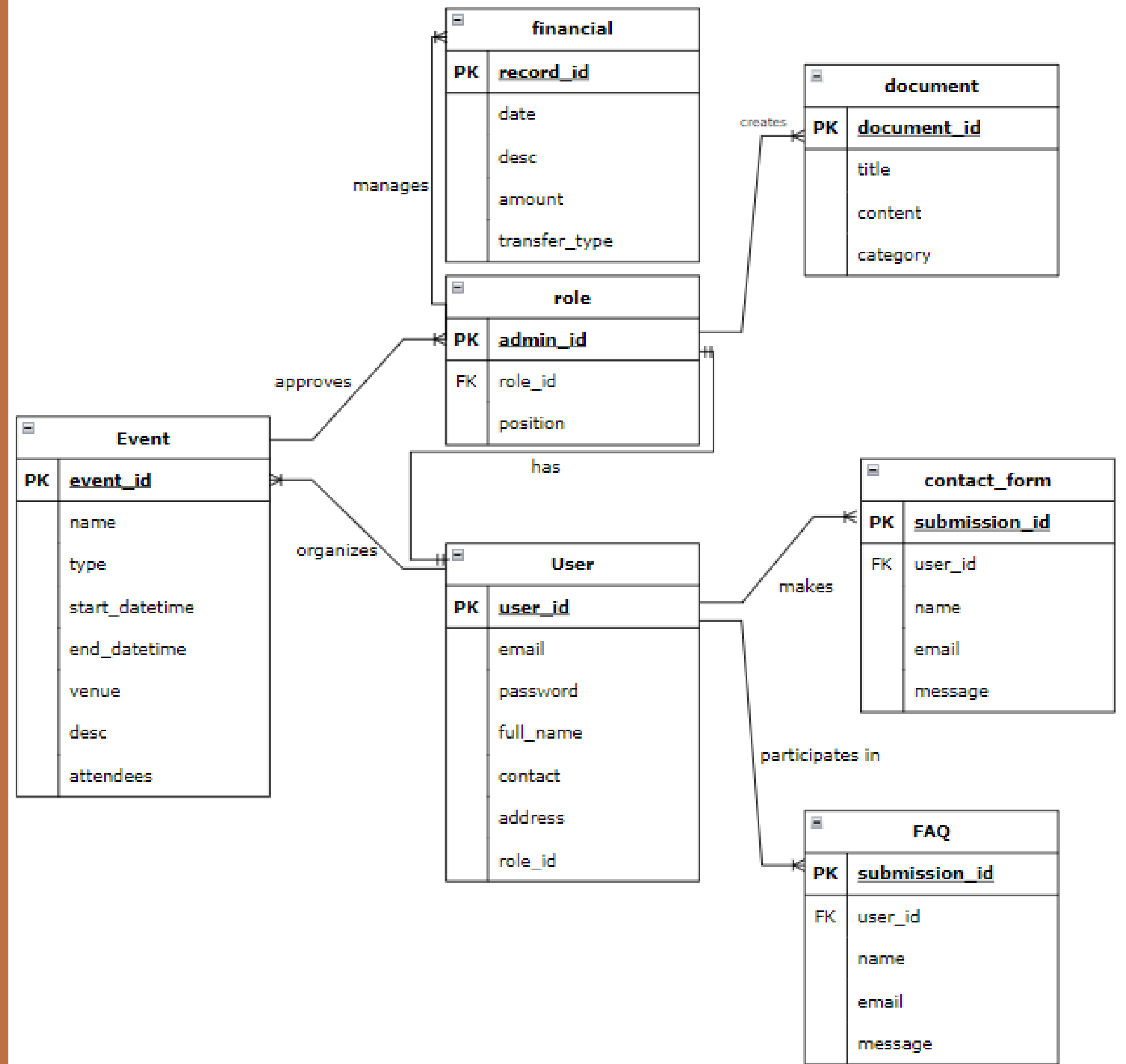


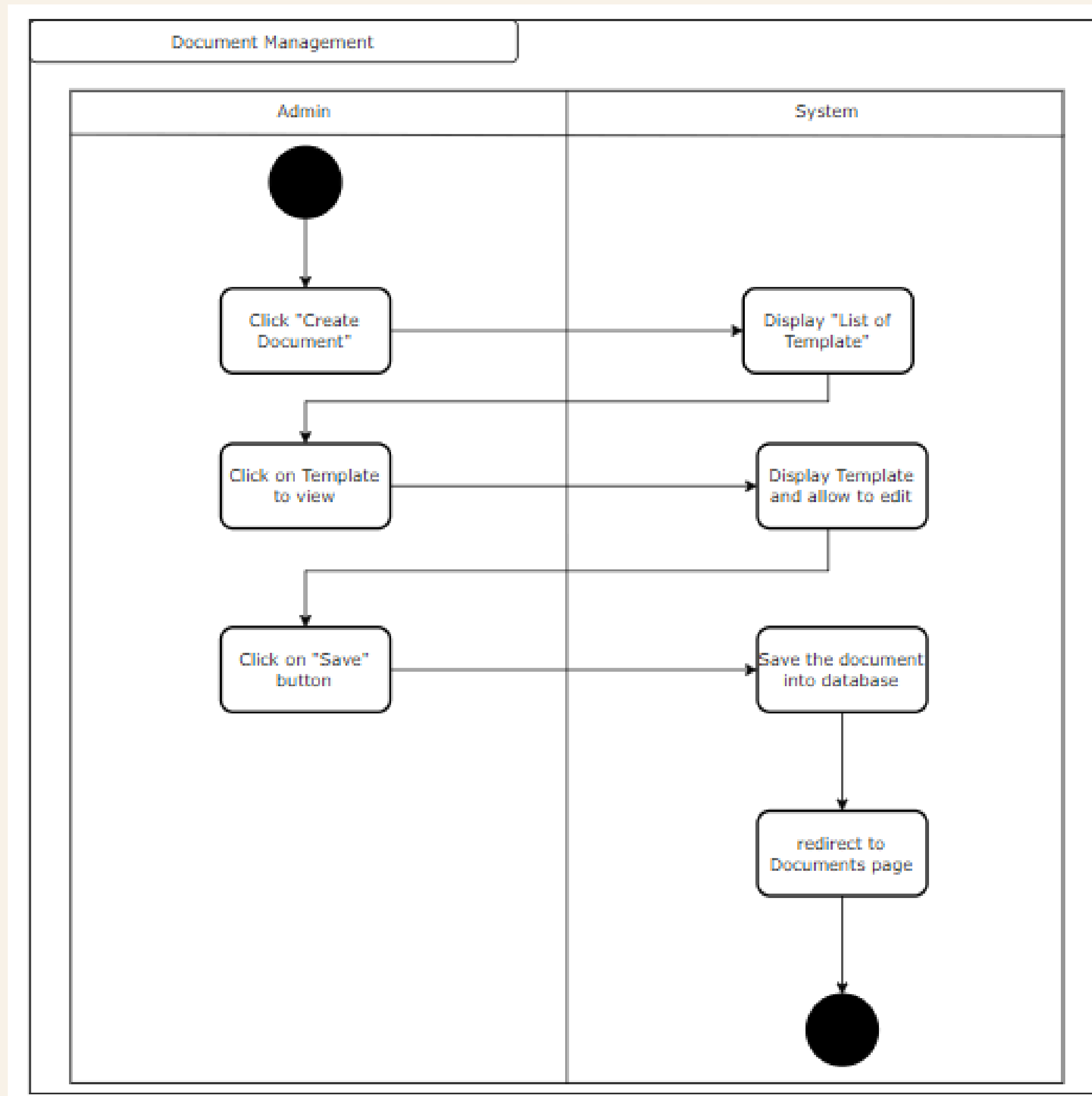
# Use Case Diagram



# Use Case Diagram

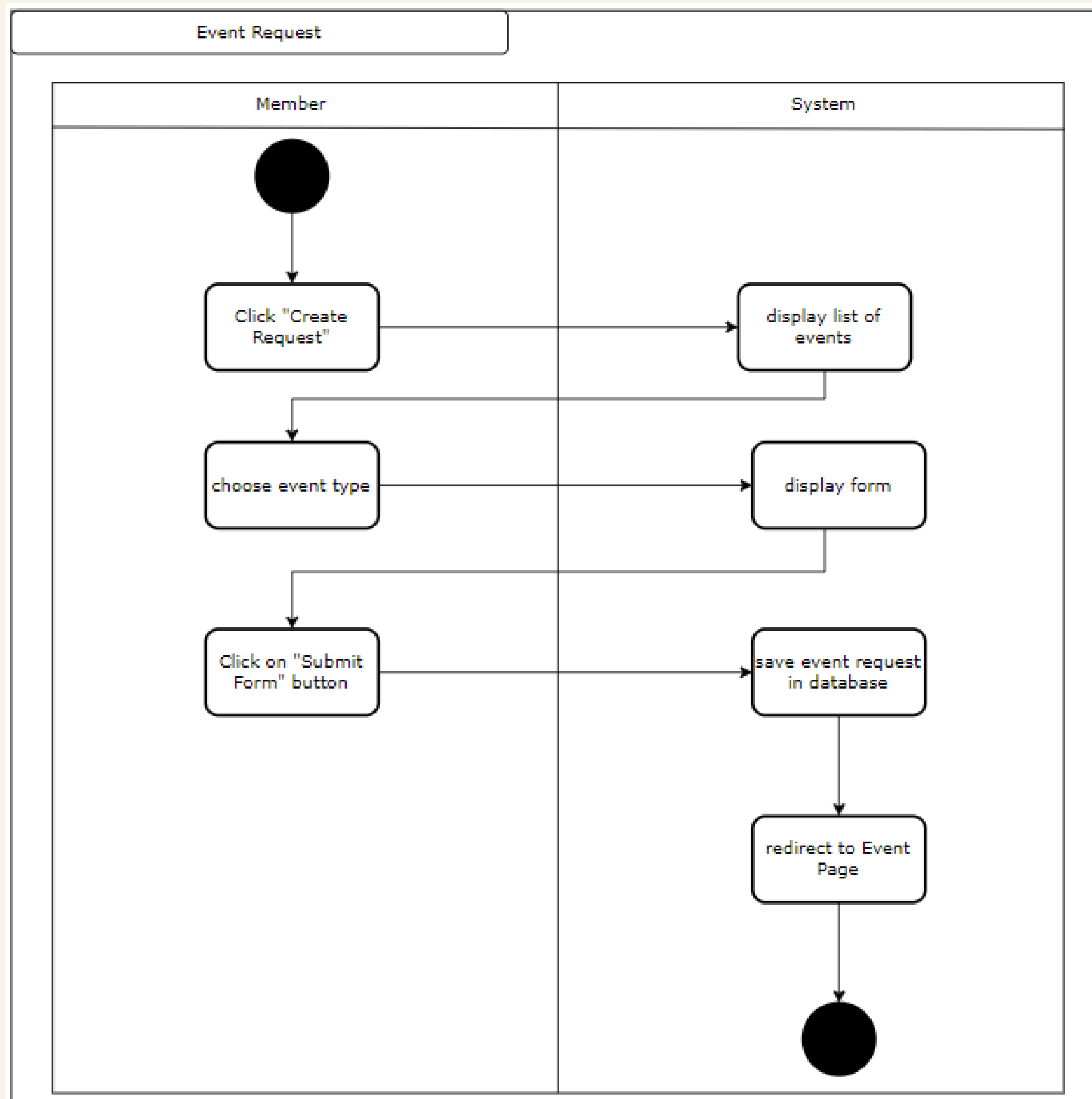
# Entity Relationship Diagram (ERD)



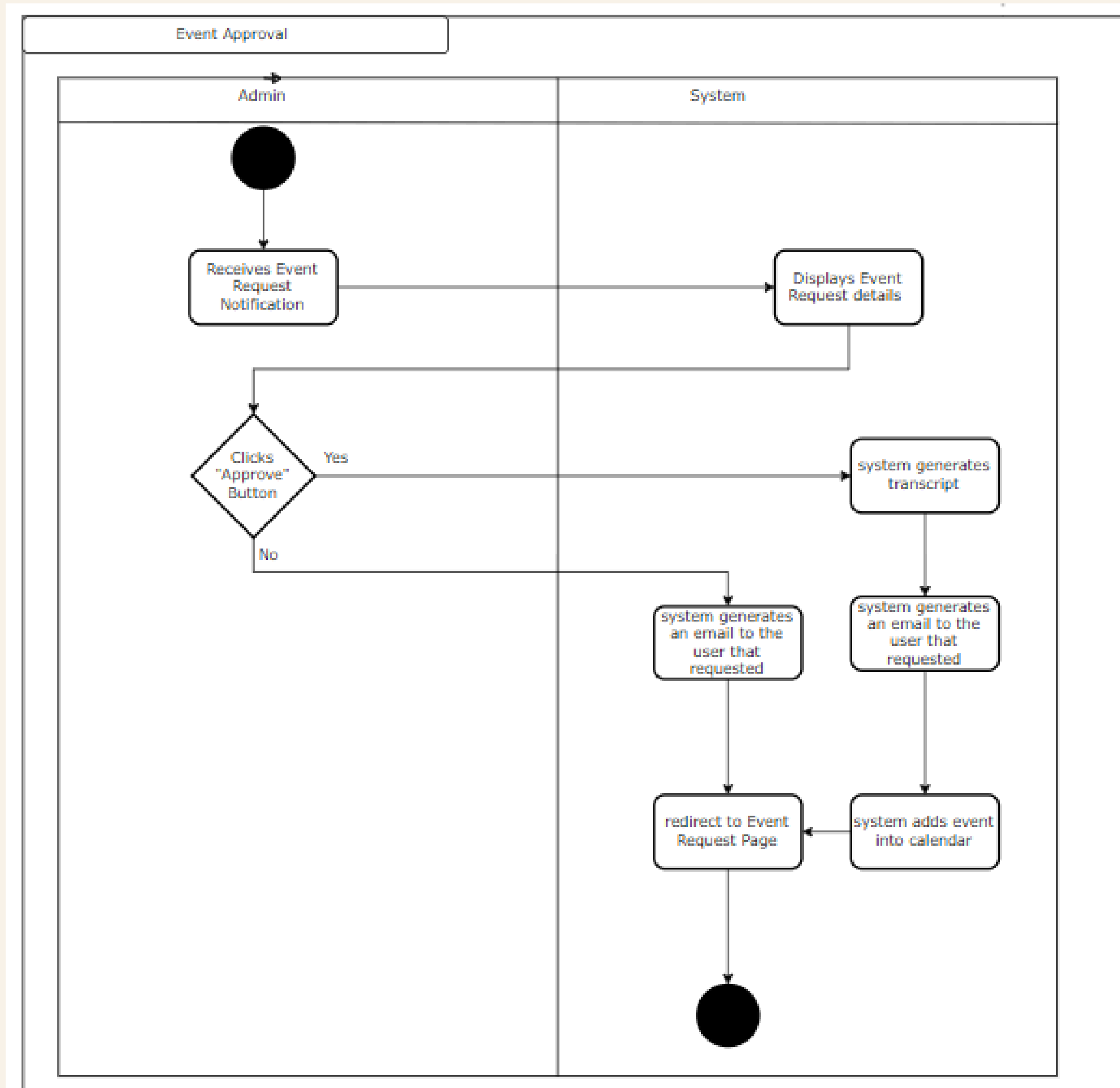


# Activity Diagram





# Activity Diagram



# Activity Diagram

# Technical Implementation




# Stakeholder Collaboration Initiative

## Interview and Meeting with stakeholder



## Collaboration Letter



UNIVERSITI  
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22<sup>nd</sup> March 2024

St Thomas Mar Thoma Syrian Church, Klang  
Lebuh Pulau Pinang 2, Kawasan 19 Bandar Baru Klang,  
41400 Klang, Selangor.

Sir/ Madam,

**Collaborator for Academic Project Courses, Faculty of Computer Science and Information Technology, Universiti Malaysia**

With reference to the above matter,

2. The Faculty of Computer Science and Information Technology (FCSIT), University Malaysia is pleased to invite you to be the collaborator for the **Management Information System for Church Operation**. This project is under the supervision of **Dr Hoo Wai Lam**.

3. The Academic Project courses must be taken and implemented by final year students of the Faculty of Computer Science and Information Technology for graduation purposes. The aim of these courses is to produce academically and technically outstanding graduates in the fields of Computer Science and Information Technology. Throughout the course implementation, students will practice technical skills, critical thinking and problem solving to develop a competent product that can be used by the collaborator to support more efficient organizational operations.

4. This collaboration will involve cooperation between the following student(s) from the Faculty of Computer Science and Information Technology together with you in the implementation of the project mentioned above. The faculty hopes that you can help the student obtain information and/or other related needs until the completion of the project.

5. The following are the student(s) who will be involved in this collaboration

Name : **Tessa Shalini Pradeep**  
Matric Number : **U2102825**  
Email : **u2102825@siswa.um.edu.my**


6. We hope that you will highly consider this invitation. We can assure that both the faculty and your organization will benefit from this collaboration. We also hope that you are willing to give written consent to the faculty on this invitation. Should you require further details, please contact the project supervisor via **Dr Hoo Wai Lam (whoo@um.edu.my)**.

Thank you.


FACULTY OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

University of Malaya, 50603 Kuala Lumpur, MALAYSIA  
Tel: (603) 7967 6300 / 6301 / 6306 6307 • Fax: (603) 7957 9249 • <http://www.fikdum.edu.my>

Yours sincerely,



**Associate Professor Dr. Norisma Idris**  
Deputy Dean (Undergraduate)  
Faculty of Computer Science and Information Technology,  
University of Malaya,  
Kuala Lumpur




**Dr. Hoo Wai Lam**  
Project Supervisor  
Faculty of Computer Science and Information Technology,  
University of Malaya,  
Kuala Lumpur

**Acceptance of Collaboration**

I hereby acknowledge that I accept this proposal for collaboration with the Faculty of Computer Science & Information Technology, Universiti Malaysia pertaining to the research project entitled **Management Information System for Church Operation**

Collaborator signature



**Name : Eapen Thomas**  
**Address : eapent88@gmail.com**  
**Date: 15 April 2024**

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## **A. Administrators / Church Committee**

### **Web Modules:**

1. **User Authentication:** We need to ensure secure access to sensitive data and functionalities that have role-based access controls, Two-factor authentication for enhanced security.
2. **Dashboard with Real-Time Analytics:** To provide a comprehensive overview of parish activities for informed decision-making. This is by visual representation of attendance trends, financial status, and upcoming events. To use AI-driven insights for predictive analytics.
3. **Document Management System:** We can do this by streamlining meeting processes and document handling. All documents are digitalized and there is a version control for meeting agendas, minutes, and other documents. Search and categorization functionalities.
4. **Event Scheduling and Calendar Integration:** As there are members and non-members (from sister parishes)/visitors that request permission for premise usage or want to hold private invite event therefore to efficiently plan and manage church events. So, we require an integrated calendar with event request creation, event approval, issuance of invoice and payment, RSVP tracking, and reminders. Also to add an automated scheduling tool to avoid conflicts. Various levels of access to view church calendar events, organization specific events, and for private events which cannot be viewed by general members and visitors.
5. **Financial Management Tools:** To integrate with the current system to ensure transparent financial tracking and reporting. Contribution tracking and reporting for one time visitor or church member. For the committee there must be budgeting tools with alerts for overspending which can be utilized by the various church organizations.
6. **Communication Platform:** To facilitate internal communication and collaboration. Like instant messaging with individual and group chat. Announcement board for important updates. Request for prayer or saying a prayer.

## **B. General Members:**

### **Web Modules:**

1. **Personalized User Profiles:** To enhance member engagement and provide personalized experiences and to provide them with attendance history and event participation tracking. Personalized content recommendations.
2. **Event Calendars with RSVP Functionality:** To keep members informed about upcoming events and facilitate participation. Members also can book dates or facility bookings. Send request for permission and payment calculation. RSVP options with event details and reminders. Integration with personal calendars.
3. **Access to Educational Materials:** Allow for digital learning Christian material to support continuous learning and spiritual growth. This is like a resource library with multimedia content. Courses and study materials based on user preferences.
4. **Online Donation and Contribution Options:** We need to simplify the contribution process and support online giving. Currently it is Secure payment gateway integration. Contribution history tracking.
5. **Discussion Forums and Community Engagement:** We must foster community interaction and engagement. Either by topic-based discussion forums or general discussions. To make it easier for community announcements and polls.

### **C. Visitors / General Information:**

#### **Web module:**

1. **Information Pages:** As we have general visitors, and some revisiting on special occasions or on specific celebratory dates on the Christian calendar we must provide essential information about the church on pages on history, beliefs, and mission. Provide multimedia content for an immersive experience.
2. **Event Calendars and Schedules:** As mentioned for general visitors and returning visitors we can offer calendar features for upcoming events. Publicly accessible event calendar. Event details, pre and post highlights and social media integration to post or view posts for general church events.
3. **Contact Information and Location Map** which will facilitate easy communication and physical access. Connect an interactive map with directions. Contact forms for specific inquiries.
4. **Frequently Asked Questions (FAQs) Section:** There are many queries that are attended to over the years, and most are repetitive therefore to address common queries proactively. Hence require searchable FAQs with detailed answers that has user-friendly navigation.
5. **Online Contact Form:** Allow visitors to make inquiries, complaints, or provide feedback conveniently. Form with fields for specific inquiry categories. Automatic acknowledgment and routing of inquiries for immediate response or to alert person in charge.

**FACULTY OF COMPUTER SCIENCE AND INFORMATION TECHNOLOGY, UNIVERSITI MALAYA**  
**WIA3003/WIB3003: ACADEMIC PROJECT I**  
**PROJECT LOGBOOK**



No.	Date & Time	Summary of Discussion	Platform F2F / Online (e.g. gMeet, MsTeam, Whatsapp, Telegram, Social Media etc)	Supervisor Signature
1	08/08/2024	<ul style="list-style-type: none"> <li>- Tessa updated her progress and concerns on her implementation stage</li> <li>- Changed the framework and the database of her website</li> </ul>	WhatsApp	
2	21/10/2024	<ul style="list-style-type: none"> <li>- Tessa updated her task progress so far she did some backend work for her admin page and faced some minor issues with SQLite</li> </ul>	WhatsApp	
3	19/11/2024	<ul style="list-style-type: none"> <li>- Tessa updated her full progress regarding her implementation phase</li> <li>- Tessa has roughly drafted most of her frontend and connected them to the database which is needed</li> <li>- She still does have some issues facing with her Calendar Implementation as well as her Finance Page</li> </ul>	WhatsApp	
4	22/11/2024	<ul style="list-style-type: none"> <li>- Dr Hoo conducted a short meeting to get updates on everyone's progress</li> <li>- Dr Hoo planned to meet Tessa's stakeholder</li> <li>- Dr Hoo explained further regarding the preparation of Monitoring</li> </ul>	MS Teams	



# References

Mercy Vicentia Nazzar, "Web-based Church Management system for Asokwa Pentecost" Kwame Nkrumah University of Science and Technology 2018.

Capstone "Church Management System" 2020

Cris Norman P. Olipas , Romabelle Cheline M. Sawit , Rubelyn M. Esperon "The Design and Assessment of a Church Records and Information Management System " 2021



**Thank  
you**