SRS Document

**Software Design & Architecture**

(Unified-UN: Enhancing United Nations Management with Integrated Features)

Table of Contents

[1. Project Title: 4](#_Toc105333961)

[2. Introduction: 4](#_Toc105333962)

[Purpose: Mission Statement 4](#_Toc105333963)

[Scope 4](#_Toc105333964)

[3. Project Overview: 4](#_Toc105333965)

[4. Project Goals and Objective: 4](#_Toc105333966)

[5. Requirements: 5](#_Toc105333967)

[Functional Requirements: 5](#_Toc105333968)

[Non-Functional Requirements: 5](#_Toc105333969)

[6. Tools and Techniques: 6](#_Toc105333970)

[7. Conceptual Architecture Diagram: 7](#_Toc105333971)

[8. Components Responsibilities: 8](#_Toc105333972)

[Account: 8](#_Toc105333973)

[Polling: 8](#_Toc105333974)

[Webinar/Seminar: 8](#_Toc105333975)

[Law Making: 8](#_Toc105333976)

[Login: 8](#_Toc105333977)

[9. Use Case Map: 8](#_Toc105333978)

[10. Functional Requirements: 9](#_Toc105333979)

[11. Use Case Models: 10](#_Toc105333980)

[11.1. (1): 10](#_Toc105333981)

[11.2. (2): 11](#_Toc105333982)

[11.3. (3): 12](#_Toc105333983)

[11.4. (4): 13](#_Toc105333984)

[11.5. (5): 13](#_Toc105333985)

[11.6. (6): 14](#_Toc105333986)

[12. Use Case Diagram: 15](#_Toc105333987)

[13. Domain Model: 16](#_Toc105333988)

[14. System Sequence Diagrams: 17](#_Toc105333989)

[14.1. (Use case 1): 17](#_Toc105333990)

[14.2. (Use case 2): 18](#_Toc105333991)

[14.3. (Use case 3): 19](#_Toc105333992)

[14.4. (Use case 4): 20](#_Toc105333993)

[14.5. (Use case 5): 21](#_Toc105333994)

[14.6. (Use case 6): 22](#_Toc105333995)

[15. List of Operations Contracts: 23](#_Toc105333996)

[16. Sequence Diagram: 24](#_Toc105333997)

[16.1. (Model 1): 24](#_Toc105333998)

[16.2. (Model 2): 25](#_Toc105333999)

[16.3. (Model 3): 26](#_Toc105334000)

[16.4. (Model 4): 27](#_Toc105334001)

[16.5. (Model 5): 28](#_Toc105334002)

[16.6. (Model 6): 29](#_Toc105334003)

[17. Activity Diagrams: 30](#_Toc105334004)

[17.1. (1): 30](#_Toc105334005)

[17.2. (2): 31](#_Toc105334006)

[17.3. (3): 32](#_Toc105334007)

[18. State Machine Diagram: 33](#_Toc105334008)

[18.1. (1): 33](#_Toc105334009)

[18.2. (2): 34](#_Toc105334010)

[18.3. (3): 35](#_Toc105334011)

[19. Component diagram: 36](#_Toc105334012)

[20. Deployment diagram: 37](#_Toc105334013)

# Project Title:

**United-Nation Management System**

# Introduction:

## Purpose: Mission Statement

The purpose of this management system is to develop a system which can be accessed by using a card to collect information and analyze the whole situation through login to the system. Every member of the UN must login to their system to participate in the meetings. That’s why we developed such a system that automatically record the attendance of the participants.

This system will be developed only for members of United Nation.

## Scope

The scope of this system is to develop a system which can be used by only those members of the united nation which has card because without card the member cannot register themselves to the system. This system can be developed by the developer team, and it can only be for the united nation members. This system includes functionality such as digitalizing the attendance of the members, access the information by inserting the card to the system.

# Project Overview:

The project overview of this system is that it can bring technology to the UN because at first the work done is by hand which can be very difficult to manage, and update. After proving such system which can automatically manage data, or which can be used for many other operations, reduces the workload of human. Requirements can be categorized into functional and non-functional. The requirements which can be essential for this system must be provide as priority such as security, easily accessible. The cost of this system is not evaluated because the system is in developing process so it can be difficult to estimate cost. This system is designed only for the United Nation.

# Project Goals and Objective:

The system developed must fulfill all the needs of the members of the United Nation because this system is highly protected from unauthorized user while it has some important information which cannot be lost at any cost. The members of the United Nation use this system for fulfilling their requirements such as presenting new laws, opposing laws, providing security measures to all over the word just by using their system to communicate through different members or countries. The veto countries members can give their order by means of this system.

# Requirements:

## Functional Requirements:

* + 1. A security pass will be provided to each user. This pass will be in physical form and is some sort of card. For entering the system, users will swipe the security pass through the scanner. If the system lock, then it can only be unlocked using card.
    2. Admin shall be able to add a new account and a new member. And a key card will be given to every new member. Admin is also able to remove an account or a member by simply blocking access to the card
    3. Members can join the meeting of general assemble from any of the offices of united nations. They can address to general assemble through online meeting. Member can present the agenda of the meeting through online meeting.
    4. System will process all the activity done by user and update in the record on the same date (different than normal systems at GA).
    5. United Nation can make the law through innovative technology. System shall update the data base immediately after passing the ruling. An amendment in the previously existing law shall be saved along with the original law.
    6. Admin shall be able to give mic, disconnect a mic, point something on screen, share the screen on the projector.
    7. Members will be able to share documents with other members, request to open mic, oppose a law, present a law, propose an amendment to the law, share information from one system to another their cards.
    8. Electronic polling is implemented, in which each member will be able to cast its vote through their system. Users can only select the option once. Users can also discard their vote if they have not cast yet. Users must swipe their passes to confirm their cast votes. The result of polling will be displayed only after polling ends.
    9. System shall connect to different social groups or NGO’s. Monthly progress of each NGO will be submitted separately to their respective UN part. Users can conduct online meetings/webinars throughout the world using this platform (Online seminars to spread awareness or guidance).
    10. People will be able to watch different world leaders addressing to UN live via the live telecasting on the website of UN. Common will have access to the laws or the amendments in the laws of UN via the website of UN.

## Non-Functional Requirements:

* + 1. There will be a dedicated database for this system.
    2. If the database of all systems goes down, then all systems will not store any information in the system.
    3. All systems connect to the server, so if the server damages, then all system stops working and gives an error message.
    4. There will be a mechanism in the system which performs functionality according to priority.
    5. Every member shall be able to conduct any meeting by sending message to all systems.
    6. There will be a separate device attached to the system for storing information in case of system failure.
    7. If there is an issue in a system, and the system cannot perform any task, then the system shall be replaced immediately.
    8. Each system is independent of other system. So, if one system crashed then another system keeps working.
    9. There will be a backup of every system, so if the system loses its content, then it can be recovered.
    10. System shall update after every 1 month.
    11. If a virus attacks any system, then the system activates the antivirus.
    12. If the system remains untouched for 5 minutes, then the system will lock automatically.
    13. Every system shall run at a low processing speed, consume low memory, and perform tasks efficiently.
    14. System shall provide some constraints, so the information which is sensitive cannot be shared among individuals.
    15. The systems should be protected from unauthorized users, hackers, and unnecessary viruses.
    16. While updating the system, it also performs its functionality and tasks.

# Tools and Techniques:

* 1. We can use database tools MYSQL to store our data and private information in backend. To store polling result, law amendment information and to store other type of information.

Reasoning: we use MYSQL due to following reasoning:

* + - * 1. Higher Performance
        2. Easy to Use
        3. Higher Availability
        4. String Data Protection
  1. We can use adobe XD for GUI design. We can create different prototypes with vector-based user interface.

Reasoning: we can use Adobe XD due to following reasoning:

1. Vector-based User Interface
2. Sophisticated Tools
3. Easy to Use
   1. We can use java to create our system that can be run on a single computer or be distributed across servers and member of united nation management system.

Reasoning: we can use java due to following reasoning:

1. It is safe.
2. Maintainable.
3. High-level concurrency tools
   1. We can use python to create framework.

Reasoning: we can use python du to the following reason:

1. Simplicity and readability.
2. Developer productivity.
3. Huge online support community.

# Conceptual Architecture Diagram:



# Components Responsibilities:

## Account:

* Add Members
* Remove Members

## Polling:

* Cast Votes
* Show Results
* Boycotting

## Webinar/Seminar:

* Conduct Online Conference
* Conduct Presentation
* Conduct Events

## Law Making:

* Propose New Law
* Oppose Law
* Amend Existing Law

## Login:

* Login in system using card
* Every time system turns off, it will again login through card.

# Use Case Map:



# Functional Requirements:

|  |  |  |
| --- | --- | --- |
| Functional Requirement | Use-case Name | Actors |
| A security card will be required to enter the system. Users will swipe the security pass through the scanner for entering the system. Once the system can get locked, the system can only be unlocked through that pass. | Verifying the User | System |
| Admin shall be able to add a new account and a new member. And a key card will be given to every new member. Admin is also able to remove an account or a member by simply blocking access to the card. | Managing member accounts | System |
| Members can join the meeting of general assemble from any of the offices of the United Nations. They can address to general assemble through an online meeting. Member can present the agenda of the meeting through an online meeting. | Attend the meeting | Member |
| The system will process all the activity done by the user and update the record on the same date (different than normal systems at GA). | Saving today’s activity | System |
| United Nation can make the law through innovative technology. The system shall update the database immediately after passing the ruling. An amendment in the previously existing law shall be saved along with the original law. | Updating live data at the backend | System |
| Admin shall be able to give mic, disconnect a mic, point something on-the screen, and share the screen on the projector. | Control member systems | Admin |
| Members will be able to share documents with other members, request to open mic, oppose a law, present a law, propose an amendment to the law, and share information from one system to another on their cards. | Request protocol | Member |
| Electronic polling is implemented, in which each member will be able to cast their vote through their system. Users can only select the option once. Users can also discard their vote if they have not cast it yet. Users must swipe their passes to confirm their cast votes. The result of polling will be displayed only after polling ends. | Vote casting | Member |
| The system shall connect to different social groups or NGOs. the monthly progress of each NGO will be submitted separately to their respective UN part. Users can conduct online meetings/webinars throughout the world using this platform (Online seminars to spread awareness or guidance). | Communicate to the world | System |
| People will be able to watch different world leaders addressing to UN live the live telecasting on the website of UN. The public will have access to the laws or the amendments in the laws of the UN, on the website. | Live Streaming | System |

# Use Case Models:

## (1):

|  |  |  |  |
| --- | --- | --- | --- |
| **Use case Name** | Control Member Systems | | |
| **Primary Actors** | Admin | | |
| **Stakeholders and interests** | Admin | Provide quick mic to appropriate members and present something on the screen | |
| Member | Will be able to successfully use the mic or screen for any type of presentation | |
| **Precondition** | Admin should be identified and authenticated before using the system | | |
| **Post condition** | Admin should disconnect all the mics and the projector when the meeting is ended | | |
| **Main Success Scenario** | Step No. | | Action |
| 1 | | Whenever the members will give any speech, firstly he/she will request a mic from the admin. |
| 2 | | When the request of mic is generated then the admin check that the mic is available for the member who is requested. |
| 3 | | The member shall give its speech on the mic and after giving its speech, he/she can simply request the admin to disconnect their mics. |
| 4 | | Admin shall disconnect their mics from his system and give mics authority to another members who is calling for mic. |
| **Extensions** | 1 | | If the member calls the mic authority from the admin and the mic is in already use, then the admin cancels the request of member. |
| 2 | | Whenever any member uses the projector for presentation and another member request for presentation then the second member will be on hold before the first member finish his/her presentation. |

## (2):

|  |  |  |  |
| --- | --- | --- | --- |
| **Use case Name** | Request Protocol | | |
| **Primary Actors** | Member | | |
| **Stakeholders and interests** | Members | Will be able to share their documents, present a law and propose an amendment efficiently and quick without any delay. | |
| Admin | Provide quick access to the members for proposing, presenting a law and share their documents. | |
| **Precondition** | Before presenting a law and proposing an amendment to the law, members will be able to identify and authenticated by their system using their cards. | | |
| **Post condition** | When the law is presented before the united nation, members can share their documents with each other using their card after login to their systems. | | |
| **Main Success Scenario** | Step No. | | Action |
| 1 | | First, if any member of the united nation will present a law or propose an amendment to the law then they can first take permission from the veto members for their presentation of their law. |
| 2 | | If the veto members allow them to present their laws, then the admin should provide them the facility to use mic for presentation. |
| 3 | | Member of the united nation can use this mic for presenting a new law which can be made or also propose an amendment to the existing law which can be changed if the proposed amendment is changeable. |
| 4 | | After presenting a law or proposing an amendment to the law, member can simply take their seat and the veto members can decide whether the proposed law is changeable or not. |
| 5 | | If the law is changeable or a new law is made, then the written documents will be shared among all the members of the united nation from one system to another using their cards. |
| 6 | | After sharing the document to the other members, a copy of this document will also be uploaded on the systems of veto members. |
| **Extensions** | 1 | | If the veto members cannot allow members to present or propose a law, then the mic authority cannot be provided to that member. |
| 2 | | If the proposed law is rejected, then the member can simply take their seat and a new member will present a new law or make an amendment in the existing law. |

## (3):

|  |  |  |
| --- | --- | --- |
| **Use Case Name** | Managing member account | |
| **Primary Actors** | System | |
| **Stakeholders and Interest** | User  Admin | |
| **Pre-Condition** | Admin shall be login to the system. He/she must be swiping their login card  Then it must be able to create, maintain an account | |
| **Post-Condition** | Admin can also block an account. | |
| **Main Scenario** | Step No. | Action |
|  | If a new member enters in united nation than admin first create their account. |
|  | After creating an account, the user/member must be able to present different law, makes presentation etc. |
|  | If a member can break the rules than admin can also be able to block an account |
| **Extension** |  | If an account will be created. The same account will also be existed with the same name then there are some quires occurs. |

## (4):

|  |  |  |
| --- | --- | --- |
| **Use Case Name** | Saving today’s activity | |
| **Primary Actors** | System | |
| **Stakeholders and Interest** | User  Admin | |
| **Pre-Condition** | If a member can present a law or approved some document the whole document can be saved in the system.  If an admin can cast vote the result of polling will be saved automatically in the system to the database. | |
| **Post-Condition** | Admin can approve the saving document or file.  Admin can also delete a document he/she wants. | |
| **Main Scenario** | Step No. | Action |
|  | If a member can present a law or law can be approved in united nations the law must be save in the system. |
|  | If an admin can cast votes of member the result of polling can also save in the system. |
|  | The admin shall be able to delete an authorized document in the system. |
| **Extension** |  | All type of data should be saved in the system.  All law should be saved if they would not be authorized. |

## (5):

|  |  |  |
| --- | --- | --- |
| **Use Case Name** | Attend the meeting | |
| **Primary Actors** | Member | |
| **Stakeholders and Interest** | Member  Admin | |
| **Pre-Condition** | Member shall login through the private pass. A member can only join or attend the meeting if it has connected through a registered system. | |
| **Post-Condition** | Member can join meeting, can present data to the meeting, or can address to the meeting | |
| **Main Scenario** | Step No. | Action |
| 1. | User asks for the permission to join the meeting, from admin. |
| 2. | After getting the permission, member can present data, can share live demo or can share document. |
| **Extension** | 1. | Access will be blocked |

## (6):

|  |  |  |
| --- | --- | --- |
| **Use Case Name** | Live streaming | |
| **Primary Actors** | External User | |
| **Stakeholders and Interest** | Member  General public | |
| **Pre-Condition** | The external platform should have access to the streaming service servers | |
| **Post-Condition** | Shall be able to block streaming service, or restrict it. | |
| **Main Scenario** | Step No. | Action |
| 1. | System should grant access to different platforms to stream live sessions |
| 2. | After getting the access, that platform will control the traffic to the sessions. And make sure that only registered people will attend the meeting. |
| **Extension** | 1. | Can block the access to servers. |

# Use Case Diagram:

Diagram, schematic

Description automatically generated

# Domain Model:



# System Sequence Diagrams:

## (Use case 1):

Table

Description automatically generated with medium confidence

## (Use case 2):

Table

Description automatically generated

## (Use case 3):

Table

Description automatically generated with medium confidence

## (Use case 4):

A picture containing diagram

Description automatically generated

## (Use case 5):

A picture containing chart

Description automatically generated

## (Use case 6):

Chart

Description automatically generated

# List of Operations Contracts:

1. RequestMic()
2. PresentSpeech()
3. WaitForYourTurn()
4. RequestForDisconnectMic()
5. TakePermissionForPresentation
6. PresentingLaw()
7. MakeWrittenDocument()
8. ShareDocumentToMembers()
9. PresentAnotherLaw()
10. ShareDocumentToVetoMembers()
11. RequestForNewAccount()
12. RequestForDifferentProtocols()
13. AllowPresentLaw()
14. CastVotes()
15. DeleteAuthorizedDocument()
16. LoginThroughSystem()
17. RequestToJoinMeeting()
18. ProceedAsNormalMeeting()
19. RequestAccessOfStream()
20. AskForStreamingCredentials()
21. StartsStreaming()

# Sequence Diagram:

## (Model 1):

Timeline

Description automatically generated

## (Model 2):

Timeline

Description automatically generated

## (Model 3):

A picture containing diagram

Description automatically generated

## (Model 4):

A picture containing diagram

Description automatically generated

## (Model 5):

A picture containing text, sign, screenshot

Description automatically generated

## (Model 6):

Diagram

Description automatically generated with medium confidence

# Activity Diagrams:

## (1):

Diagram

Description automatically generated

## (2):

Diagram

Description automatically generated

## (3):

Diagram

Description automatically generated

# State Machine Diagram:

## (1):

Diagram

Description automatically generated

## (2):

Diagram

Description automatically generated

## (3):

Diagram

Description automatically generated

# Component diagram:

Diagram

Description automatically generated

# Deployment diagram:

Diagram

Description automatically generated