LAB REPORT

Submitted by

ANIRUDDHA GHOSH (RA2011030010038)

Under the Guidance of

Dr. Gouthaman. P
Assistant Professor, Networking and Communications Department

In partial satisfaction of the requirements for the degree of

BACHELOR OF TECHNOLOGY
in
COMPUTER SCIENCE ENGINEERING

With specialization in Cyber Security

SCHOOL OF COMPUTING

COLLEGE OF ENGINEERING AND TECHNOLOGY

SRM INSTITUTE OF SCIENCE AND TECHNOLOGY

KATTANKULATHUR - 603203

JUNE 2022

SRM INSTITUTION OF SCIENCE AND TECHNOLOGY
KATTANKULATHUR-603203

BONAFIDE CERTIFICATE

Certified that this lab report titled **"Secured Online Meeting Platform"** is the bonafide work done by ANIRUDDHA GHOSH (RA2011030010038) who carried out the lab exercises under my supervision. Certified further, that to the best of my

knowledge the work reported herein does not form part of any other work.

SIGNATURE

Dr. P. Gouthaman

SEPM – Course Faculty

Assistant Professor

Department of Networking and Communications

TABLE OF CONTENTS

ABSTRACT

During the ongoing global pandemic, faculty, staff and administrators at colleges and universities experienced an increase in meetings using web-based platforms. Challenges were identified related to the changes from face-to-face to web-based meetings, including internet connectivity, inadequate technology. Few meeting Platforms like Gmeet, Zoom, etc, were very popular. Current meeting platform lacks security. We have multiple options to join instance or to schedule the meeting or through the code. Our project aims at developing a Secure Meeting Platform that will track each meeting attendee's IP address and have the ability to block suspicious users before they join the meeting if a VPN or proxy is detected. There will be an automatic Proxy and VPN detector so that the intruder is not able to forward his/her traffic through the VPN server and join the meet after it. Our system will block this type of traffic and will make the meet secure. We need to record each user's IP address for tracking purposes, which may limit the platform's audience and automatically block the person who tries to do malpractices and sending the alert to the host of the meeting. We also have the AI Chatbox which blocks the unwanted message or spamming in the chatbox. In our project we discussed the prioritization of Stakeholders, Work Breakdown Structure, SWOT Analysis, Risk Management, System Architecture, Gantt chart and many Diagrams like- Use Case Diagrams, Class Diagrams, ER Diagrams, Sequence Diagram, Collaboration Diagram and we also made the framework for our website for better understanding of our project.

LIST OF FIGURES

LIST OF ABBREVIATIONS

CAPEX	Capital Expenditure
OPEX	Operating Expenditure
E1R1A1T1	Effort Requirement Activity Task
UX	User Experience
UAT	User Acceptance Testing
IR	Infrastructure Requirement
API	Application Development Interface
WBS	Work Breakdown Structure
SWOT	Strength, Weakness, Opportunity, Threats
RMMM	Remote Monitoring and Management
GANTT	Generalized Activity Normalization Time Table
DFD	Data Flow Diagram
ER	Entity Relationship
ISA	Specialization-Generalization
DB	Data Base

Department of Networking and Communications

SRMIST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	1
Title of Experiment	To identify the Software Project, Create Business Case, Arrive at a Problem Statement
Name of the candidate	Aniruddha Ghosh
Team Members	Anish Gogna , Rohan Kumar
Register Number	RA2011030010038, RA2011030010056, RA2011030010050
Date of Experiment	17/03/2022

Mark Split Up

S.No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
Total		**10**	

Staff Signature with date

Aim

To Frame a project team, analyze and identify a Software project. To create a business case and Arrive at a Problem Statement for the Online Secured Meeting Platform.

Team Members:

Sl No	Register No	Name	Role
1	RA2011030010050	Rohan Kumar	**Lead**
2	RA2011030010038	Aniruddha Ghosh	**Member**
3	RA2011030010056	Anish Gogna	**Member**

Project Title: Online Secured Meeting Platform.

Project Description

Developing a Secure Meeting Platform that will track each meeting attendee's IP address and have the ability to block suspicious users before they join the meeting if a VPN or proxy is detected. Machine learning algorithms will be used to analyze the pattern of suspicious activities in order to learn and generalize blocking rules.

The main goal is to overcome the identified problems listed below and propose innovative solutions.

- Solutions need to be devised so that the intruders/miscreants are identified.
- Miscreants would not be able to use IDs and Names of the identified Participants/Students
- It should get easy for the Host to block such intruders which do not happen usually.
- Messages (which are usually disturbing and offensive) need to be blocked in such a way that they are not displayed during the entire session.

ONE PAGE BUSINESS CASE TEMPLATE

DATE	17/03/22
SUBMITTED BY	Anish Gogna
TITLE / ROLE	Secured meeting Platform

THE PROJECT

In bullet points, describe the problem this project aims to solve or the opportunity it aims to develop.

1. The pandemic has caused a considerable increase in online meeting platforms for education and other official purposes.
2. As a result there have been cases of offenders joining the meeting and disturbing the meeting environment in various ways such as by sending offensive messages.
3. These misdeeds might disturb the purpose of the whole meeting and the decorum of the academic activities/sessions be spoiled.

THE HISTORY

In bullet points describe the current situation.

1. Current Meeting platform lacks security, people join from different ids and commit fraud.
2. Unnecessary chatbox spam is common.

LIMITATIONS

1. VPNs and proxy servers that are well-known will be easily detected and blocked, but those that aren't will be difficult to detect and block.
2. We need to record each user's IP address for tracking purposes, which may limit the platform's audience
3. We'll need a team of highly skilled individuals to carry out the plan.

APPROACH

List what is needed to complete the project.

1. Develop a Secure Meeting Platform that will trace the IP address of each and every meeting attendee and will have the option to block the suspicious users before joining the meeting in case of any VPN orProxy is identified.
2. The pattern of suspicious activities will be analyzed with the machine learning algorithms to learn and generalize the blocking

BENEFITS

In Bullet points, list the benefits that this project will bring to the organization.

1. There will be an automatic Proxy and VPN detector so that the intruder is not able to forward his/her traffic through the VPN server and join the meet after it. Our system will block this type of traffic and will make the meet secure.
2. For Educational Institutes there will be additional security functions to restrict the students from doing any malpractice

Result

Thus, the project team formed, the project is described, the business case was prepared and the problem statement was arrived.

Department of Networking and Communications

SRMIST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	2
Title of Experiment	Identification of Process Methodology and Stakeholder Description
Name of the candidate	Aniruddha Ghosh
Team Members	Anish Gogna , Rohan Kumar
Register Number	RA2011030010038, RA2011030010056, RA2011030010050
Date of Experiment	24/03/22

Mark Split Up

S.No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
	Total	**10**	

Staff Signature with date

Aim

To identify the appropriate Process Model for the project and prepare Stakeholder and User Description.

Team Members:

Sl No	Register No	Name	Role
1	RA2011030010050	Rohan Kumar	**Rep/Member**
2	RA2011030010038	Aniruddha Ghosh	**Member**
3	RA2011030010056	Anish Gogna	**Member**

Project Title: Secured Online Meeting Platform

Selection of Methodology:- Rapid Application Development Model-

- It takes less thanthree months.
- Each major function can beaddressed by a separate team and then integrated to form a whole.
- More productivity with fewer people
- Development time is drastically reduced
- Requirements can be changed at anytime
- Encourages and priorities customer feedback
- Reviews are quick

Incorporate information to below table regarding stakeholders of the project.

Stakeholder Name	Activity/ Area /Phase	Interest	Influence	Priority (High/ Medium/ Low)
Owner	Achieve targets, Increase sales margin.	High	High	1
Sponsor	Provides new marketto expand ventures. Negotiate funding for projects.	Medium	Medium	3
Technical Team	Work on the project and do all the needful tech work	High	High	2
Project Manager	Lead the team in every aspect. Accountable for entire project success &failure.	Medium	Medium	2
Investors	Provides necessary financial resources.	Medium	Medium	5
Resource Manager	Ensuring adequate resource according to project needs and budget.	Medium	Medium	4
End Users	Provides Feedback.	Medium	Medium	5

Result:

Thus the Project Methodology was identified and the stakeholders were described.

Department Of Networking and Communications

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	3
Title of Experiment	System, Functional and Non-Functional Requirements of the Project
Name of the candidate	Aniruddha Ghosh
Team Members	Anish Gogna, Rohan Kumar
Register Number	RA2011030010038, RA2011030010056, RA2011030010050
Date of Experiment	30/03/22

Mark Split Up

S.No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
	Total	**10**	

Staff Signature with date

Aim

To identify the system, functional and non-functional requirements for the project.

Team Members:

S No	Register No	Name	Role
1	RA2011030010050	Rohan Kumar	**Rep/Member**
2	RA2011030010038	Aniruddha Ghosh	**Member**
3	RA2011030010056	Anish Gogna	**Member**

Project Title: Secured Meeting Platform

System Requirements: 2 GB RAM and a dual-core 1 GHz processor (Recommended)
4 GB RAM and a dual-core 1GHz processor (Optimal)

Functional Requirements: Monitoring the IP address of the people joining the meet and allowing onlythose IP's which are invited for the meeting and keeping the track of all the chat box messages through AI trained model.

Non-Functional Requirements: Automatically block the person who tries to do malpractices and sending the alert to the host of the meeting.

Result

Thus the requirements were identified and accordingly described.

Department of Networking and Communications

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	4
Title of Experiment	Prepare Project Plan based on scope, Calculate Project effort based on resources and Job roles and responsibilities
Name of the candidate	Aniruddha Ghosh
Team Members	Anish Gogna , Rohan Kumar
Register Number	RA2011030010038, RA2011030010056, RA2011030010050
Date of Experiment	06/04/22

Mark Split Up

S.No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
	Total	**10**	

Staff Signature with date

Aim

To Prepare Project Plan based on scope, Calculate Project effort based on resources, Find Job roles and responsibilities

Team Members:

Sl No	Register No	Name	Role
1	RA2011030010050	Rohan Kumar	**Lead**
2	RA2011030010038	Aniruddha Ghosh	**Member**
3	RA2011030010056	Anish Gogna	**Member**

Requirements

1. Project Management Plan

Describe the key issues driving the project.

Focus Area	Details
Integration Management	Governance Framework Project Team Structure Roles & Responsibilities of Team Change Management (Change Control, Issue Management)Project Closure
Schedule Management	Define Milestones Schedule Control
Cost Management	Estimate Effort Assign Team Budget Control
Quality Management	Quality Assurance: Quality assurance will be managed including governance, roles and responsibilities, tools and techniques and reporting.
Resource Management	Estimate and Manage theneed People: People & Skills Required Finance: Budget Required Physical: Facilities, IT Infrastructure
Communication Management	Determine communication requirements, roles and responsibilities, tools and techniques. [Type of Communication, Schedule, Mechanism Recipient]

2. Estimation

Effort and Cost Estimation

Activity Description	Sub-Task	Sub-Task Description	Effort (in hours)	Cost inINR
Design the user screen	E1R1A1T1 (Effort-Requirement-Activity-Task)	Designing the meeting platform login portal	6	10000
	E1R1A1T2	Designing the securing System	5	8000
	E1R1A1T3	Designing and Training the AI Chabot	8	14000
	E1R1A1T4	Designing the admin or the meet host page to keep a track on everyone	10	20000
	E1R1A1T5	Making and integrating all the different system in a single platform.	100	240000
Identify Data Source for displaying units of EnergyConsumption		Go through Interface contract (Application Data Exchange) Documents	5	10000
		Software testing	8	16000
		Document	4	6000

Effort (hr)	Cost (INR)
1	2000

Infrastructure/Resource Cost [CapEx]

Infrastructure Requirement	Qty	Cost perqty	Cost peritem
IR1	PC's	4	80000
IR2	Hosting Server	1	5000
IR3	Wi-Fi	1	4000
IR4	AI Tool	1	70000

Maintenance and Support Cost [OpEx]

Category	Details	Qty	Cost perqty per annum	Cost peritem
People	Network, System, Middleware and DB admin Developer ,Support Consultant	3	2,000,000	6,000,000
License	Operating System Database Middleware IDE	10	10000	100,000
Infrastructures	Server,Storage and Network	20	20000	400,000

3. Project Team Formation

Identification Team members

Name	Role	Responsibilities
Rohan	Key Business User (ProductOwner)	Provide clear business and user requirements
Rohan	Project Manager	Manage the project
Rohan	Business Analyst, MarketingAnalyst	Discuss and Document Requirements
Aniruddha	Technical Lead	Design the end-to-end architecture
Anish	UX Designer	Design the user experience
Aniruddha, Anish	Frontend Developer	Develop user interface
Aniruddha, Rohan	Backend Developer	Design, Develop and Unit TestServices/API/DB
Aniruddha, Anish	Cloud Architect	Design the cost effective, highly availableandscalable architecture
Rohan	Cloud Operations	Provision required Services
Aniruddha	Tester	Define Test Cases and Perform Testing

Responsibility Assignment Matrix

RACIMatrix	Team Members			
Activity	**Anish (Designer)**	**Aniruddha (Developer)**	**Rohan (Project Manager & BA)**	**Rohan - Key Business User**
User Requirement Documentation	-	C/I	A	R
Advertisement	C	C	R	
Development	C	R	I	
Website Design	R	A	I	
Testing / Deployment	-	A	C	
Bug Fixes	A	R	I	
Update & Upgrade	-	C	A	

A	Accountable
R	Responsible
C	Consult
I	Inform

Result:

Thus, the Project Plan was documented successfully.

Department of Networking and Communications

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	5
Title of Experiment	Prepare Work breakdown structure, Timeline chart, Risk identification Table
Name of the candidate	Aniruddha Ghosh
Team Members	Anish Gogna , Rohan Kumar
Register Number	RA2011030010038, RA2011030010056, RA2011030010050
Date of Experiment	22/04/22

Mark Split Up

S.No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
	Total	**10**	

Staff Signature with date

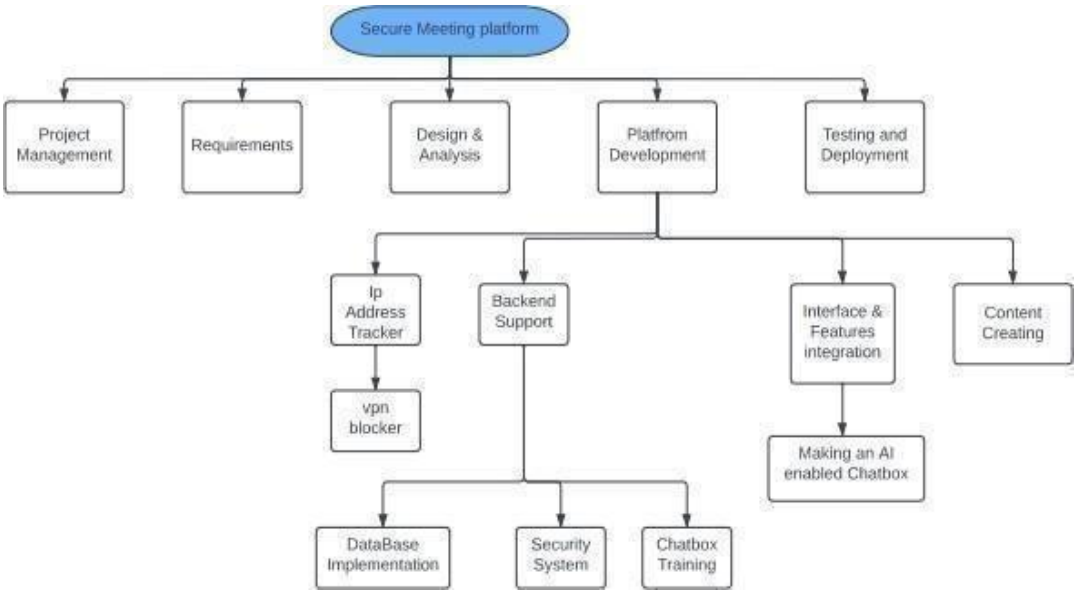
Aim

To Prepare Work breakdown structure, Timeline chart and Risk identification table

Team Members:

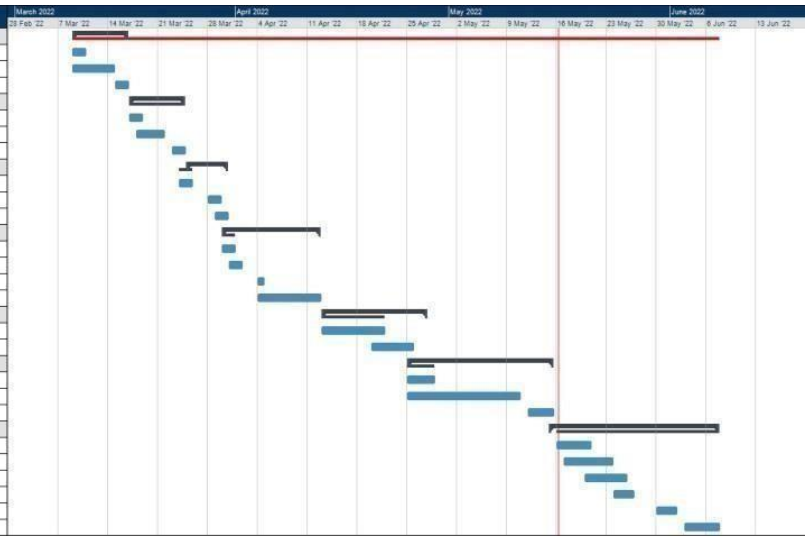
Sl No	Register No	Name	Role
1	RA2011030010056	Rohan Kumar	**Rep**
2	RA2011030010038	Aniruddha Ghosh	**Member**
3	RA2011030010056	Anish Gogna	**Member**

WBS – Examples



GANTT CHART

	Task M...	Task Name	Duration	Start	End	Predecess...	Completi...	Priority	Resourc...	Work	Cost
1		**Initial Stage**	**6 days**	**09-03-2022**	**16-03-2022**		**0%**	**500**		**0 hrs**	**₹ 0.00**
2		Project approach	2 days	09-03-2022	10-03-2022		0%	500		0 hrs	₹ 0.00
3		Understanding the goals	4 days	09-03-2022	14-03-2022		0%	500		0 hrs	₹ 0.00
4		Identify the approach	2 days	15-03-2022	16-03-2022		0%	500		0 hrs	₹ 0.00
5		**Identification of methodology**	**6 days**	**17-03-2022**	**24-03-2022**		**0%**	**500**		**0 hrs**	**₹ 0.00**
6		Selection of methedology	2 days	17-03-2022	18-03-2022		0%	500		0 hrs	₹ 0.00
7		Identification of stakeholder	2 days	18-03-2022	21-03-2022		0%	500		0 hrs	₹ 0.00
8		Communication plan	2 days	23-03-2022	24-03-2022		0%	500		0 hrs	₹ 0.00
9		**Identification of requirements**	**4 days**	**25-03-2022**	**30-03-2022**		**0%**	**500**		**0 hrs**	**₹ 0.00**
10		Functional requirements	2 days	24-03-2022	25-03-2022		0%	500		0 hrs	₹ 0.00
11		Non functional requirements	2 days	28-03-2022	29-03-2022		0%	500		0 hrs	₹ 0.00
12		System requirements	2 days	29-03-2022	30-03-2022		0%	500		0 hrs	₹ 0.00
13		**Project management**	**10 days**	**30-03-2022**	**12-04-2022**		**0%**	**500**		**0 hrs**	**₹ 0.00**
14		Project management plan	2 days	30-03-2022	31-03-2022		0%	500		0 hrs	₹ 0.00
15		Cost estimation	2 days	31-03-2022	01-04-2022		0%	500		0 hrs	₹ 0.00
16		Risk analysis	1 day?	04-04-2022	04-04-2022		0%	500		0 hrs	₹ 0.00
17		Project timeline review	7 days	04-04-2022	12-04-2022		0%	500		0 hrs	₹ 0.00
18		**Design**	**11 days**	**13-04-2022**	**27-04-2022**		**0%**	**500**		**0 hrs**	**₹ 0.00**
19		Design main page	7 days	13-04-2022	21-04-2022		0%	500		0 hrs	₹ 0.00
20		Review and final	4 days	26-04-2022	25-04-2022		0%	500		0 hrs	₹ 0.00
21		**Coding and implementation**	**15 days**	**25-04-2022**	**15-05-2022**		**0%**	**500**		**0 hrs**	**₹ 0.00**
22		Developing basic html structure	4 days	25-04-2022	28-04-2022		0%	500		0 hrs	₹ 0.00
23		Developing user interface	12 days	25-04-2022	10-05-2022		0%	500		0 hrs	₹ 0.00
24		Reviewing and final the structure	2 days	12-05-2022	15-05-2022		0%	500		0 hrs	₹ 0.00
25		**Backend**	**17 days**	**15-05-2022**	**07-06-2022**		**0%**	**500**		**0 hrs**	**₹ 0.00**
26		Developing basic functioning sites	5 days	16-05-2022	20-05-2022		0%	500		0 hrs	₹ 0.00
27		Creating database for user	5 days	17-05-2022	23-05-2022		0%	500		0 hrs	₹ 0.00
28		Integrating the database	4 days	20-05-2022	25-05-2022		0%	500		0 hrs	₹ 0.00
29		Model implementation phase 1	3 days	24-05-2022	26-05-2022		0%	500		0 hrs	₹ 0.00
30		Module implementation phase 2	3 days	30-05-2022	01-06-2022		0%	500		0 hrs	₹ 0.00
31		Reviewing and testing	3 days	03-06-2022	07-06-2022		0%	500		0 hrs	₹ 0.00



RISK ANALYSIS – SWOT & RMMM

Strength	**Weakness**
Secure meeting platform Ip Tracking System AI-Enabled Chabot.	Tracking new or self-made VPN More research orientated Requires more execution time
Opportunities	**Threats**
Improve the learning experience maintaining the decorum of the meetingproper secure management of class	Ransomware Phishing

RESPONSE	STRATEGY	EXAMPLES
AVOID	Risk avoidance is a strategy where the project team takes action to remove the risk or protect from the impact	• Extending the schedule • Reducing/removing scope. • Changethe execution strategy
TRANSFER	Risk transference involves shifting or transferring the risk threat and impact the third party, rather transfers the responsibility and ownership	• Purchasing insurance • Performance bonds • Warranties • Contact issuance
MITIGATE	Risk migration is a strategy where the project team takes action to reduce the probability of the risk occurring. This does not risk or potential impact, but rather reduces the likelihood of it becoming real.	• Increasing testing • Changing suppliers to a more stable one. • Reducing process complexity
ACCEPT	Risk acceptance means the team acknowledges the risk and its potential impact but decides not to take any preemptive action to prevent it. It is dealt with only if it occurs.	• Contingency reserve budgets • Management schedule float • Event contingency

Result:

Thus, the work breakdown structure with timeline chart and risk table were formulated successfully.

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SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	6
Title of Experiment	Design a System Architecture, Use Caseand Class Diagram
Name of the candidate	Aniruddha Ghosh
Team Members	Anish Gogna , Rohan Kumar
Register Number	RA2011030010038, RA2011030010056, RA2011030010050
Date of Experiment	29/04/22

Mark Split Up

S.No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
	Total	**10**	

Staff Signature with date

Aim

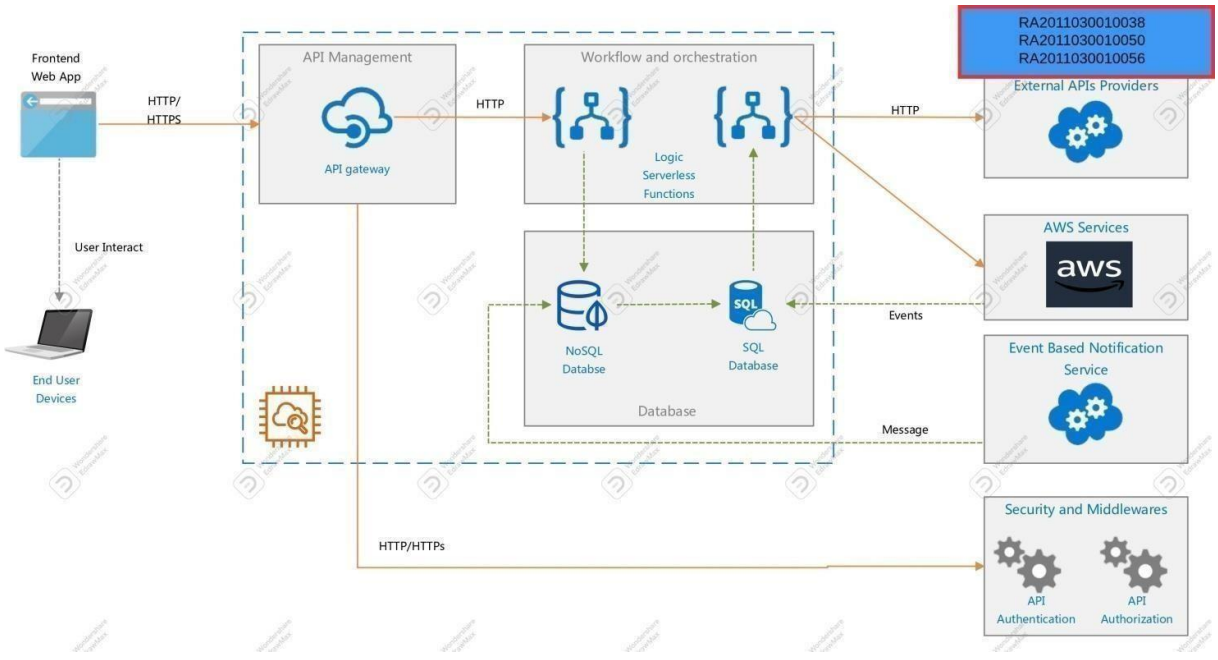
To Design a System Architecture, Use case and Class Diagram

Team Members:

Sl No	Register No	Name	Role
1	RA2011030010050	Rohan Kumar	**Rep**
2	RA2011030010038	Aniruddha Ghosh	**Member**
3	RA2011030010056	Anish Gogna	**Member**

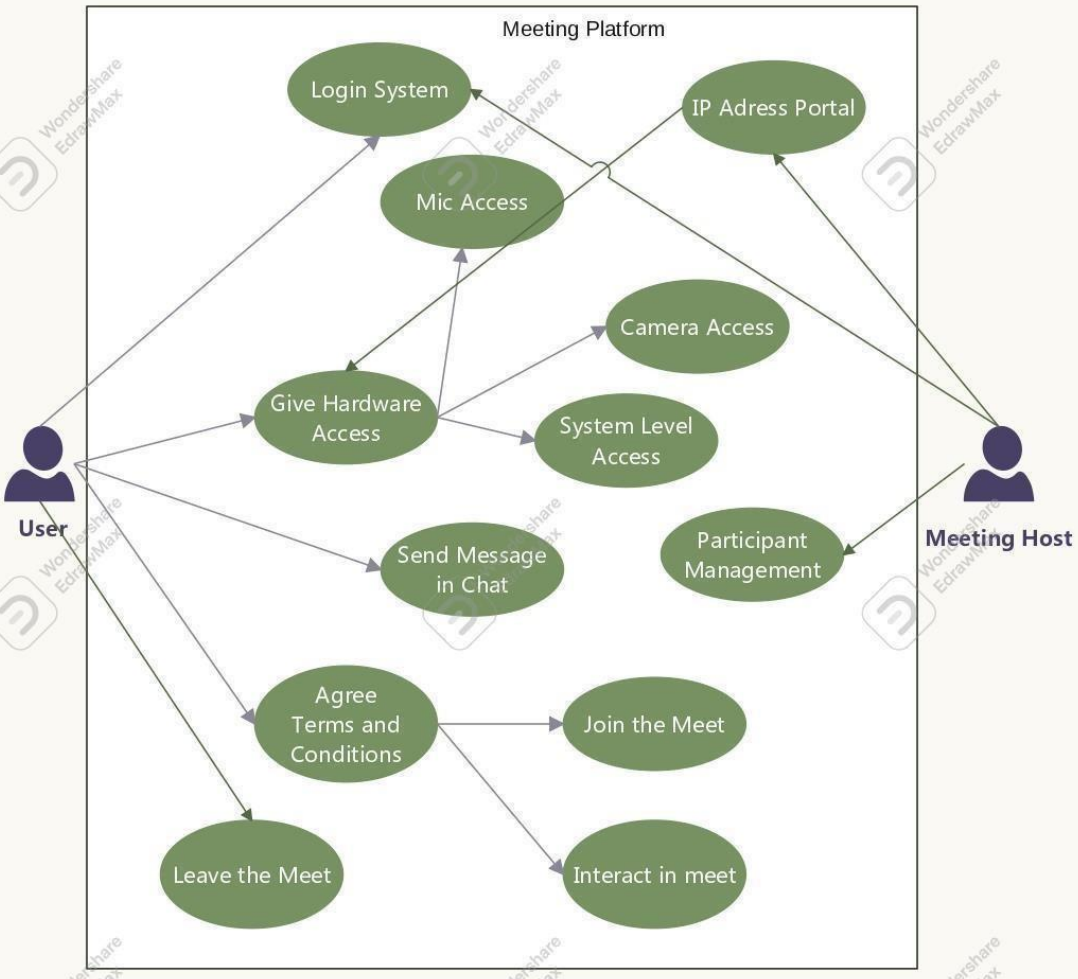
Requirements

System Architecture:



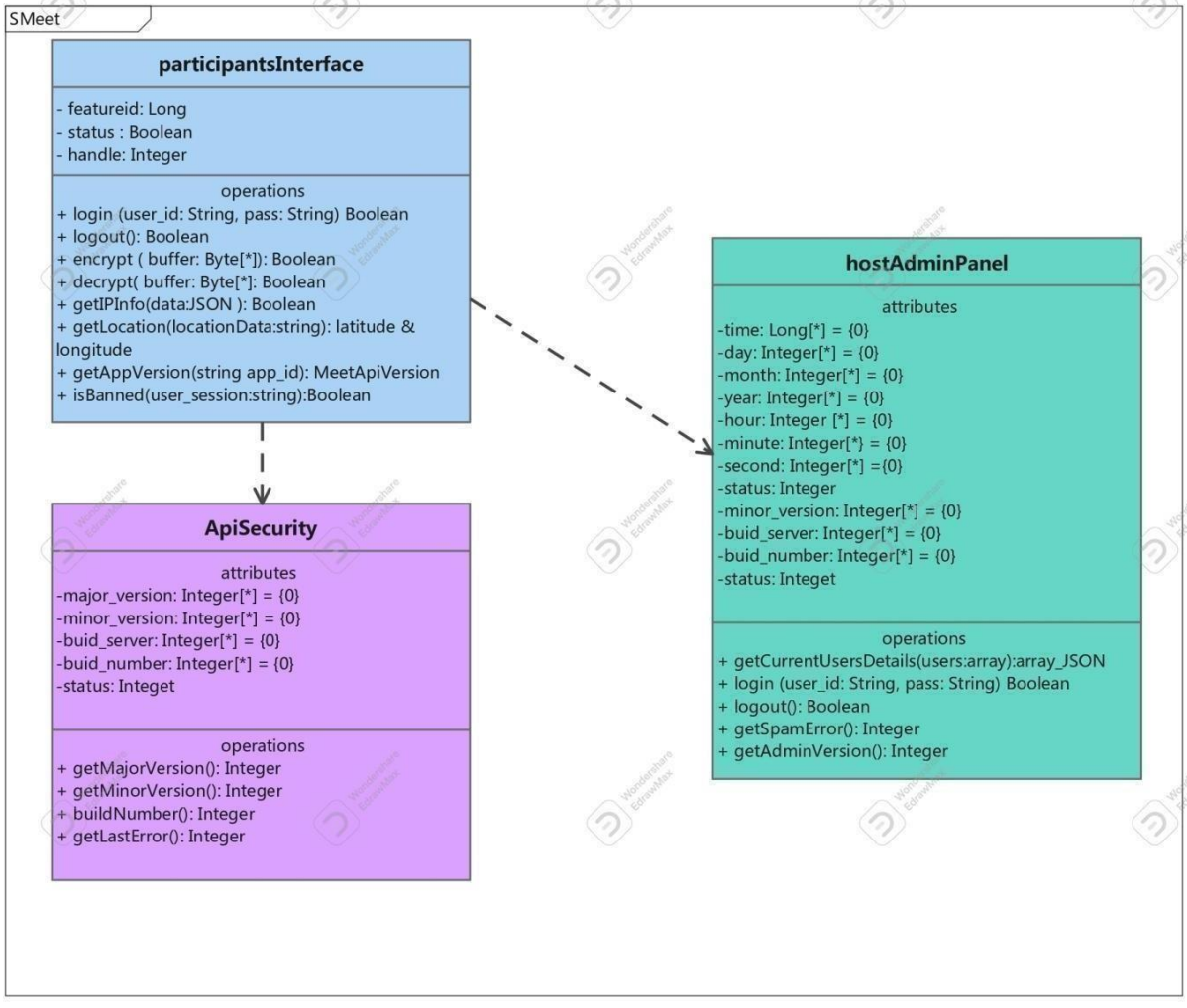
Secure Meet Platform Use Case

RA2011030010038
RA2011030010050
RA2011030010056



RA2011030010038
RA2011030010050
RA2011030010056

Secure Meet Platform Class Diagram



Result:

Thus, the systemarchitecture, use case and class diagram created successfully.

School of Computing

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	7
Title of Experiment	Design a Entity Relationship Diagram
Name of the candidate	Aniruddha Ghosh
Team Members	Anish Gogna,Rohan Kumar
Register Number	RA2011030010038, RA2011030010056, RA2011030010050
Date of Experiment	06/05/22

Mark Split Up

S. No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
	Total	**10**	

Staff Signature with date

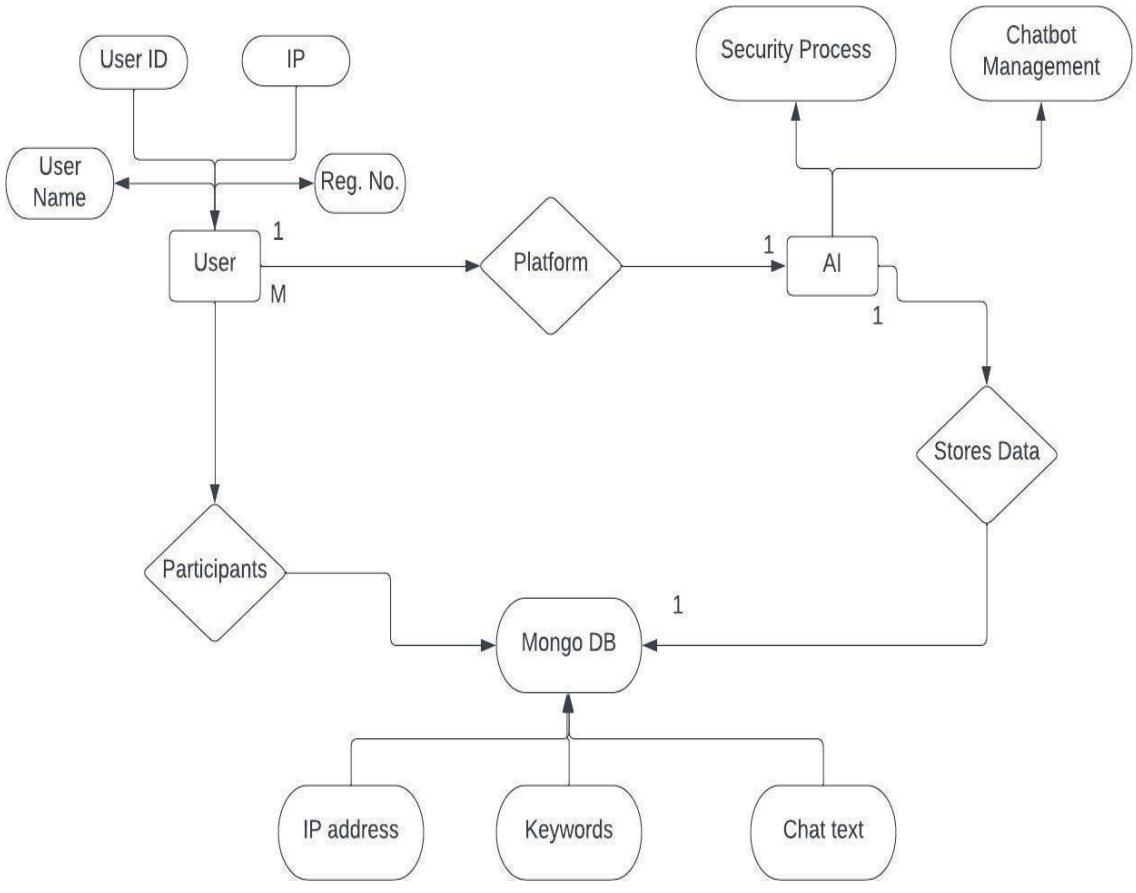
Aim

To create the Entity Relationship Diagram

Team Members:

S No	Register No	Name	Role
1	RA2011030010050	Rohan	**Rep**
2	RA2011030010038	Aniruddha Ghosh	**Member**
3	RA201103001005	Anish Gogna	**Member**

ER Diagram of Secure Meeting Platform



Result:

Thus, the entity relationship diagram was created successfully.

School of Computing

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	8
Title of Experiment	Develop a Data Flow Diagram (Process-Up to Level 1)
Name of the candidate	Aniruddha Ghosh
Team Members	Anish Gogna, Rohan Kumar
Register Number	RA2011030010038, RA2011030010056, RA2011030010050
Date of Experiment	13/05/22

Mark Split Up

S. No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
	Total	**10**	

Staff Signature with date

Aim

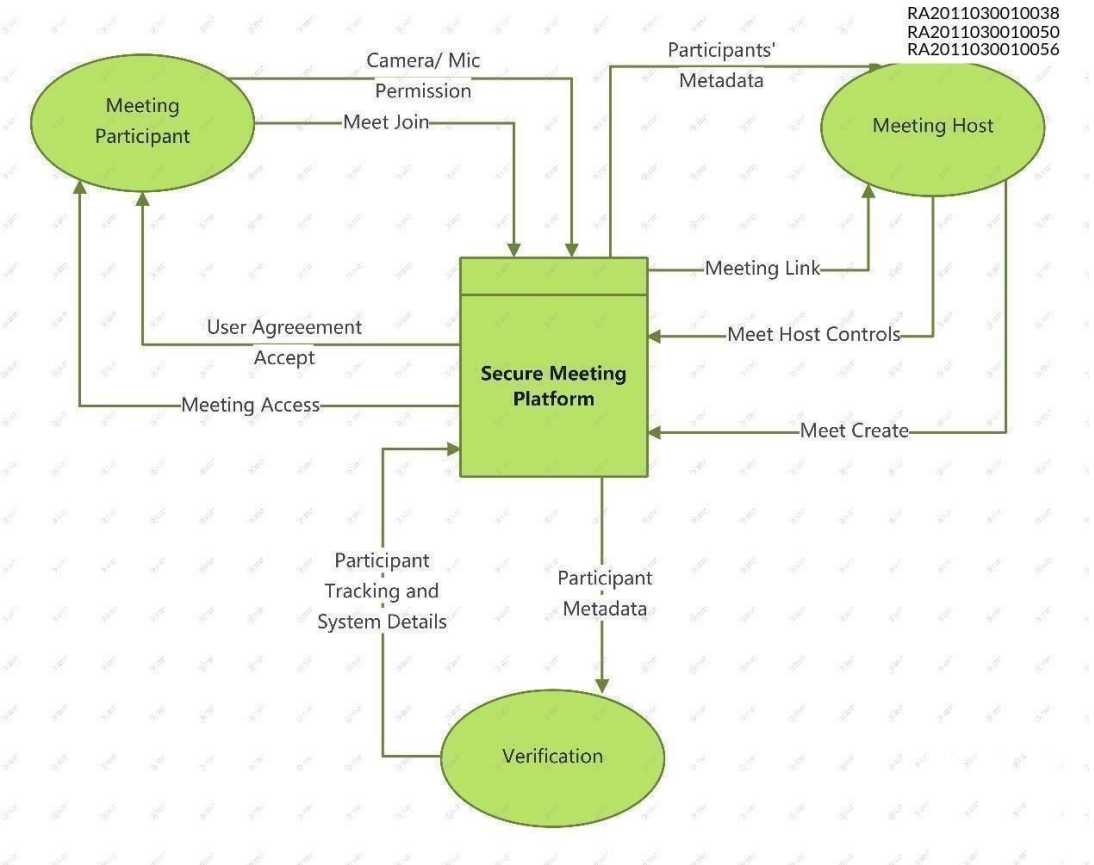
To develop the data flow diagram up to level 1 for the **Online Secured Meeting Platform**.

Team Members:

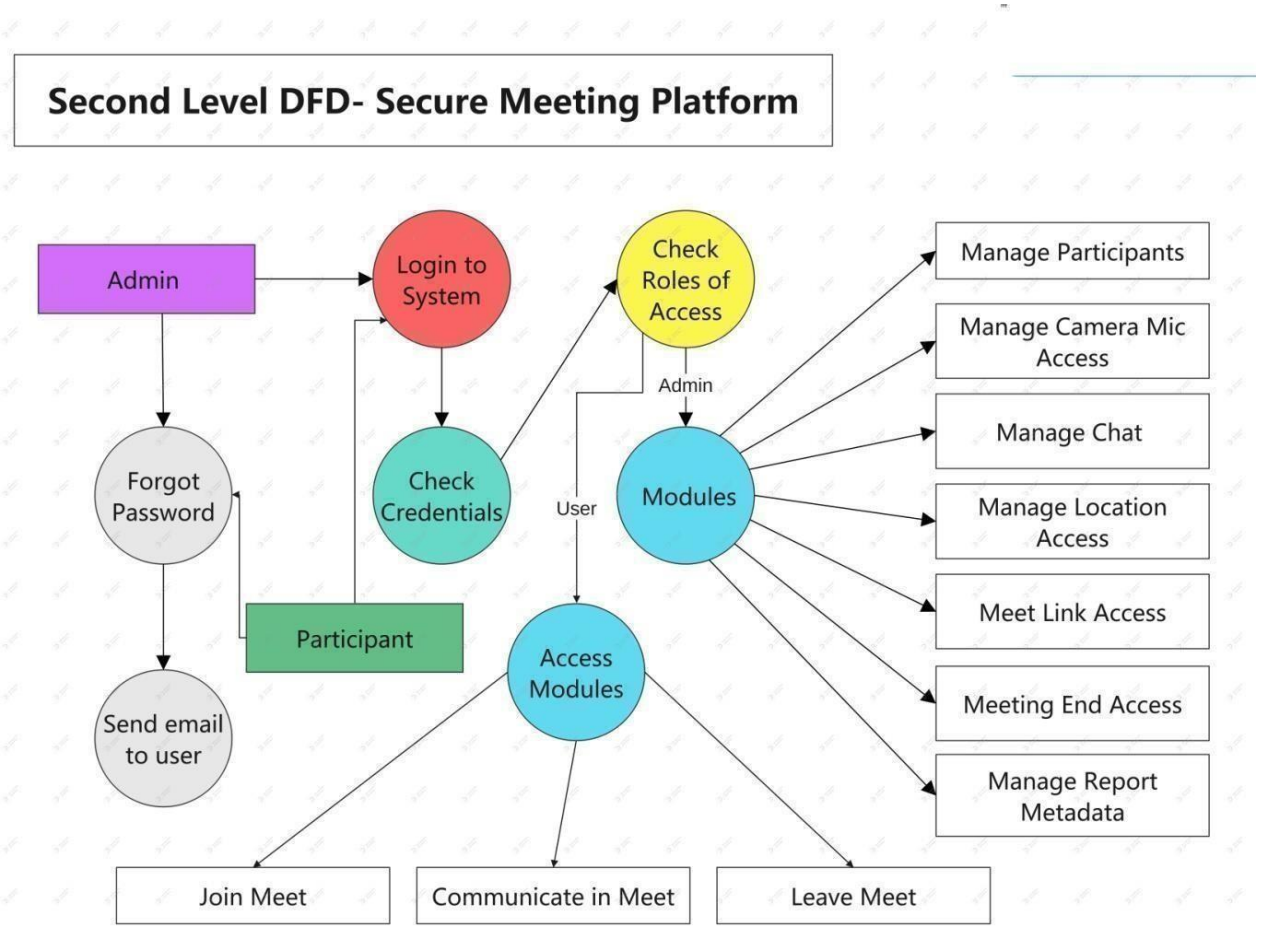
S No	Register No	Name	Role
1	RA2011030010050	Rohan Kumar	**Rep**
2	RA2011030010038	Aniruddha Ghosh	**Member**
3	RA2011030010056	Anish Gogna	**Member**

DFD

Level 0



Level 1



Result:

Thus, the data flow diagrams have been created for the Online **Secured Meeting Platform**.

School of Computing

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	9
Title of Experiment	Design a Sequence and Collaboration Diagram
Name of the candidate	Aniruddha Ghosh
Team Members	Anish Gogna, Rohan Kumar
Register Number	RA2011030010038, RA2011030010056, RA2011030010050
Date of Experiment	20/05/22

Mark Split Up

S. No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
	Total	**10**	

Staff Signature with date

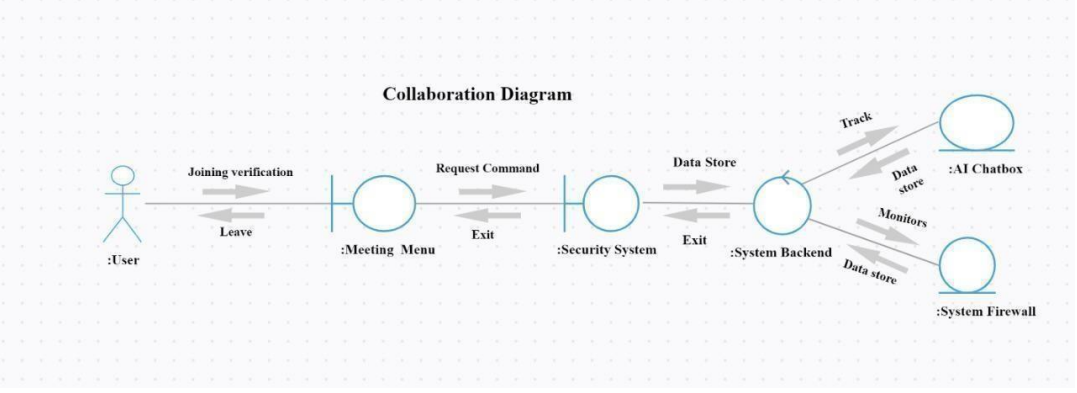
Aim

To create the sequence and collaboration diagram for the **Online Secured Meeting Platform**.

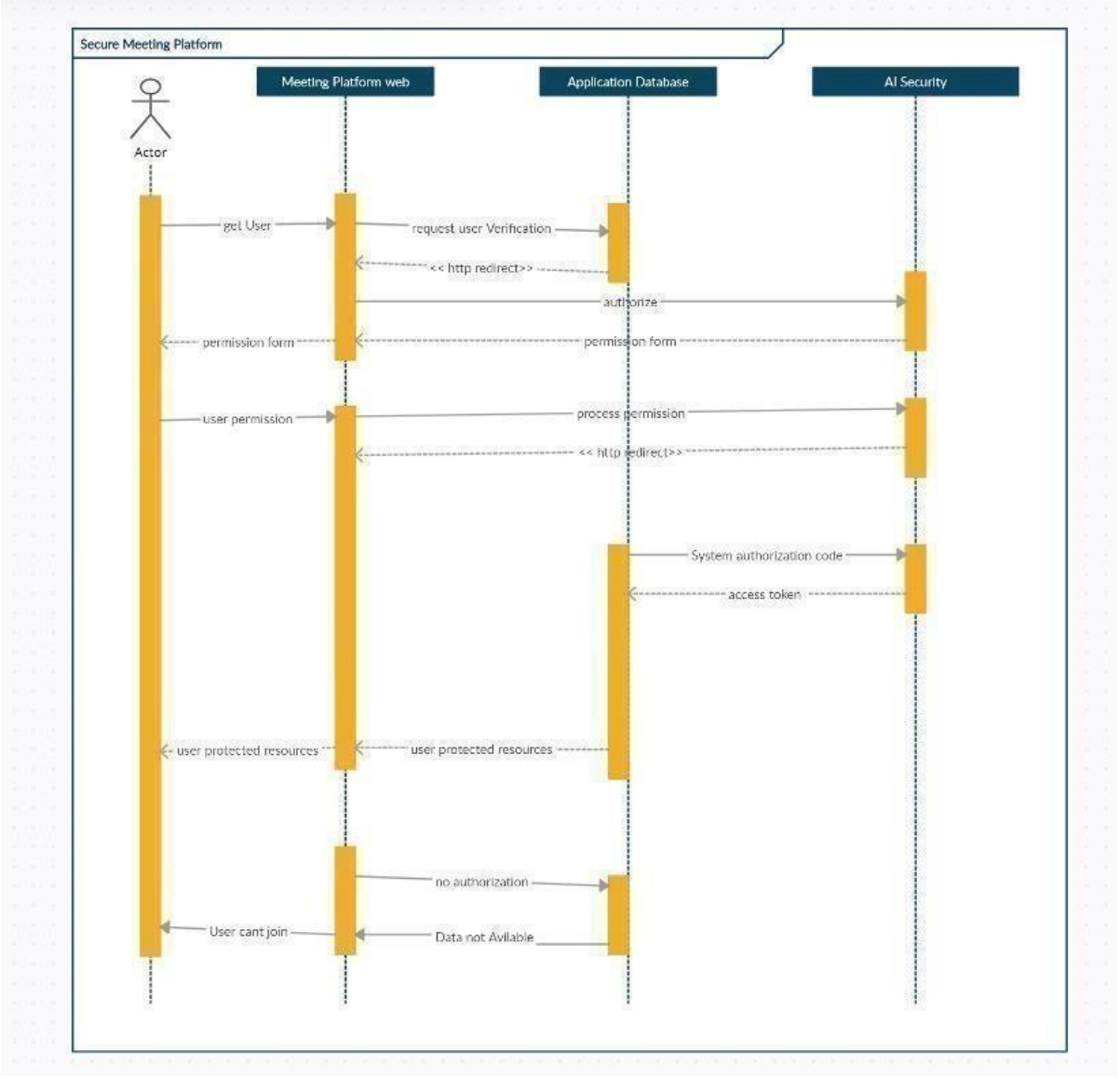
Team Members:

S No	Register No	Name	Role
1	RA2011030010050	Rohan Kumar	**Rep/Member**
2	RA2011030010038	Aniruddha Ghosh	**Member**
3	RA2011030010056	Anish Gogna	**Member**

Collaboration Diagram:



Sequence Diagram:



Result:

Thus, the sequence and collaboration diagrams were created for the Online Secured Meeting Platform.

School of Computing

SRM IST, Kattankulathur – 603203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	10
Title of Experiment	Develop a Testing Framework/User Interface
Name of the candidate	Aniruddha Ghosh
Team Members	Anish Gogna , Rohan Kumar
Register Number	RA2011030010038, RA2011030010056, RA2011030010050
Date of Experiment	27/05/22

Mark Split Up

S. No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
	Tota	**10**	

Staff Signature with date

Aim: To develop the testing framework and/or user interface framework for the secure meeting Platform

Team Members:

S No	Register No	Name	Role
1	RA2011030010050	Rohan Kumar	**Rep/Member**
2	RA2011030010038	Aniruddha Ghosh	**Member**
3	RA2011030010056	Anish Gogna	**Member**

Executive Summary

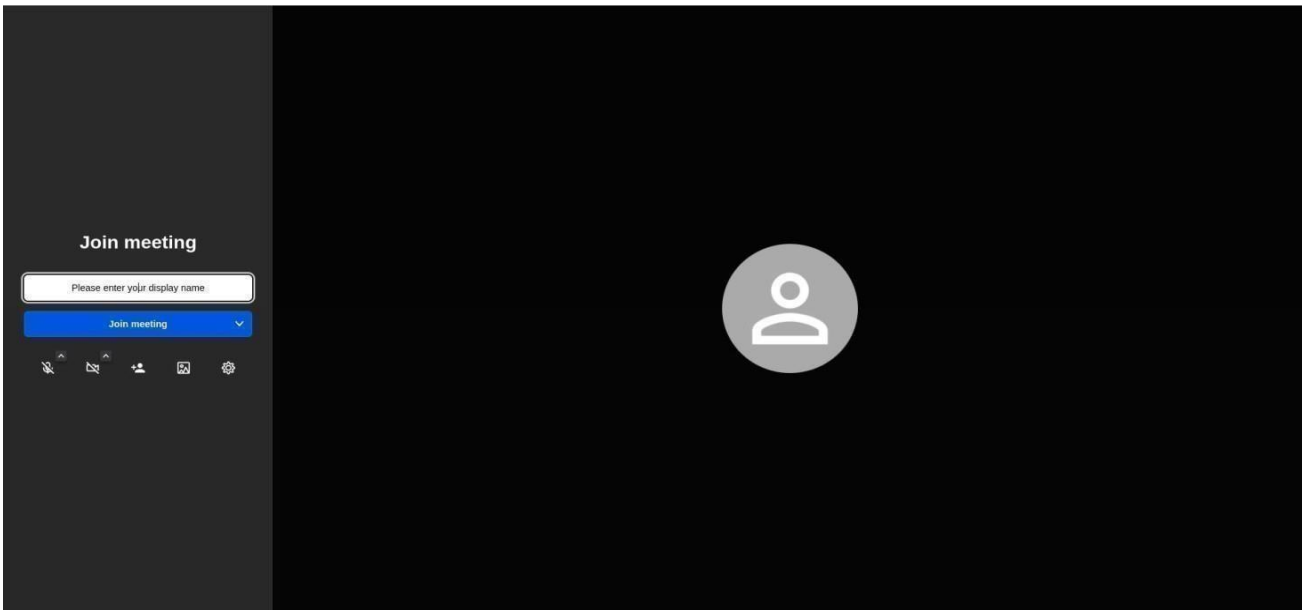
- As the Project is to be used for secure meeting platform.
- The Design should be simple, elegant and formal.
- The goal is to thoroughly test the user interface and all of its components.

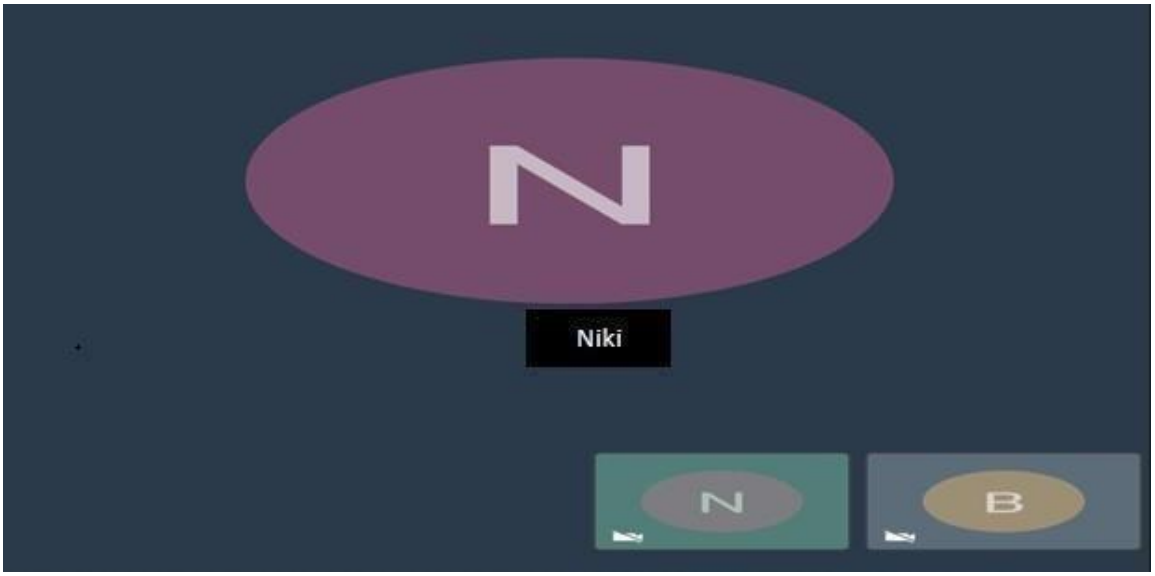
In order to construct a cross-platform website that works on both desktop computers and mobile devices like Android and iOS, we want to upload party logos and utilize CSS frameworks like bootstrap.

Design Plan

The plan is to keep the design simple with large icons and buttons so that someone with weaker vision would face no problem during the meeting.

Consistent design, simplicity, lighter background colors, design that works across platforms and an emphasis on symbols should all be considered while creating this design so that even those with less literacy can easily recognize the members present in the meeting. Consistency transforms a good design intoa great design. Consistencyimproves UX, generalusability, and theefficiency.


Join meeting
Please enter your display name
Join meeting


N
Niki
N
B

Scope of Testing :

Speed: Ensure that our platform will deliver a quick and instant response to all types of users.

User Security: we promise to make our Security system intelligent enoughto block all possible malpractices

Interoperability: System should have the ability to gather relevant information, and its setting should be configurable when users select any channels. Overall, we will perform inter-operability testing to help your users get the right thing fromthe Platform at the right time.

Functionality: All of your Platform's features will work perfectly when our functional testing is complete. With our aid, you can ensure that the user's meeting experience is enhanced.

Comprehension Abilities: With testing, we can ensure an error-free and good texting experience from our system.

Types of Testing, Methodology, Tools

Category	Methodology	Tools Required
Functional Requirements	Manual	Word Template
SecurityTesting	RAD Security Testing	Zap Attack Proxy (ZAP)
User Acceptance Testing (UAT)	Operational Acceptance Testing	Rally Software
A/BTesting	Split-run testing (or) bucket testing	Google Optimize
Adhoc Testing	RAD Development	Selenium

Result:

Thus, the testing framework/user interface framework has been created for the AI secured meeting system.

School of Computing

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	11
Title of Experiment	Test Cases & Reporting
Name of the candidate	Aniruddha Ghosh
Team Members	Anish Gogna , Rohan Kumar
Register Number	RA2011030010038, RA2011030010056, RA2011030010050
Date of Experiment	01/06/22

Mark Split Up

S. No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
Total		**10**	

Staff Signature with date

Aim

To develop and report the test cases for the Secure Online Meeting Platform.

Team Members:

S No	Register No	Name	Role
1	RA2011030010050	Rohan Kumar	**Rep**
2	RA2011030010038	Aniruddha Ghosh	**Member**
3	RA2011030010056	Anish Gogna	**Member**

Functional Test Cases

Test ID (#)	Test Scenario	Test Case	Execution Steps	Expected Outcome	Actual Outcome	Status	Remarks
1.	Verify User Registration	Verify mobile number and email through OTP	1. User clicks on User Registration link 2. Enter the mobile Number and email ID on the text box 3. Click Register button	User should be taken to the next page for verification	User registered with his own email and password	Pass	success
2.	Verify User behind a VPN or Proxy Tunnel	Verify their IP address and match with well-known VPN Proxy server	1. While accessing user's IP address is used to verify automatically in backend	User should be accessed to join meet if passed	User is not behind a VPN or Proxy	Pass/Failure	Success

3.	User behaviour check	Check chat box and voice for abusive words or behaviour	Chat box and voice are gone through AI/ML models to check for behavior	User should be friendly in meet and should maintain behaviour	User if disobey the rule, IP address will be stored and will be kicked out from meet	Pass	Success
4	User Login Check	Check User ID password with registered users	Stored data will be checked with input data and authentication is checked	User will be authenticated with the original ID and Password	User most of the time uses weak password to pass	Pass	Success

Non-Functional Test Cases

Test ID (#)	Test Scenario	Test Case	Execution Steps	Expected Outcome	Actual Outcome	Status	Remarks
1.	Ensure security	One user should be allowed only one login	Will be checking login semaphore variable to check status	User can't login in multiple device or multiple session	User needs to login one device at a time.	Pass	Success
2.	Handling traffic on website	Large number of requests should not overload the website	setting update limiter and load balancing fixes the issue	User gets faster access to the website	Users are divided into different servers for balancing sessions	Pass	Success

Manual Test Cases:

Test Area	Input
Login Verification	IP address and User details
Chatbox AI System	Messages and Spanning
Blocking System	Admin Input and different security configuration

Category	**Progress Against Plan**	**Status**
Functional Testing	Amber	In-Progress
Non-Functional Testing	Amber	In-Progress

Functional	**Test Case Coverage (%)**	**Status**
Login Verification	40%	In-Progress
Chatbox AI System	40%	In-Progress
Blocking System	20%	In-Progress

Result:

Thus, the test case report has been created for the Online Secured Meeting Platform.

School of Computing

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	12
Title of Experiment	Provide the details of Architecture Design
Name of the candidate	Aniruddha Ghosh
Team Members	Anish Gogna , Rohan Kumar
Register Numbers	RA2011030010038, RA2011030010056, RA2011030010050
Date of Experiment	08/06/22

Mark Split Up

S. No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
	Total	**10**	

Staff Signature with date

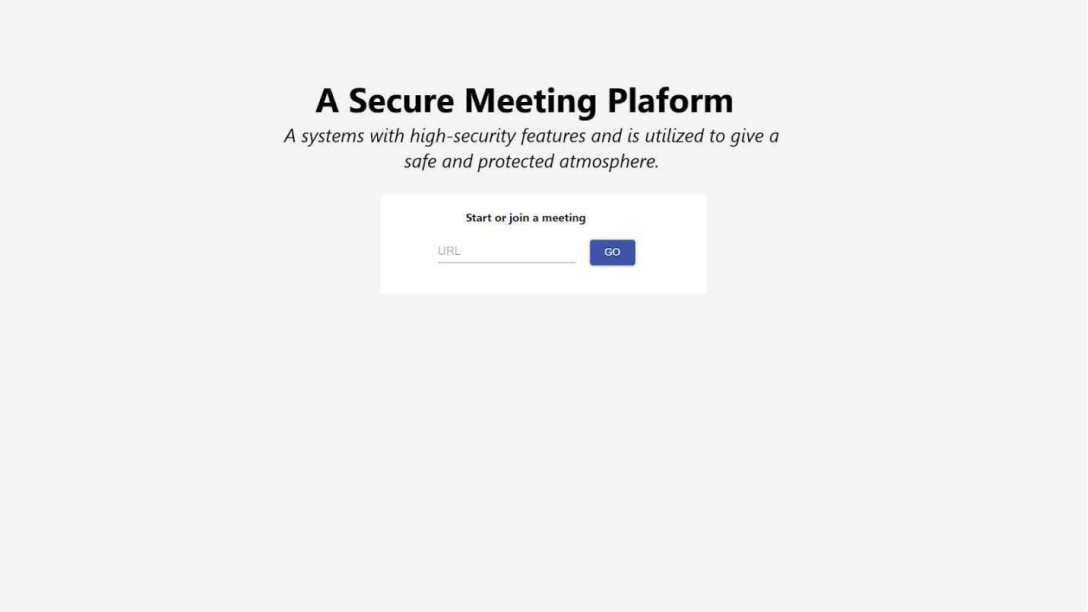
Aim

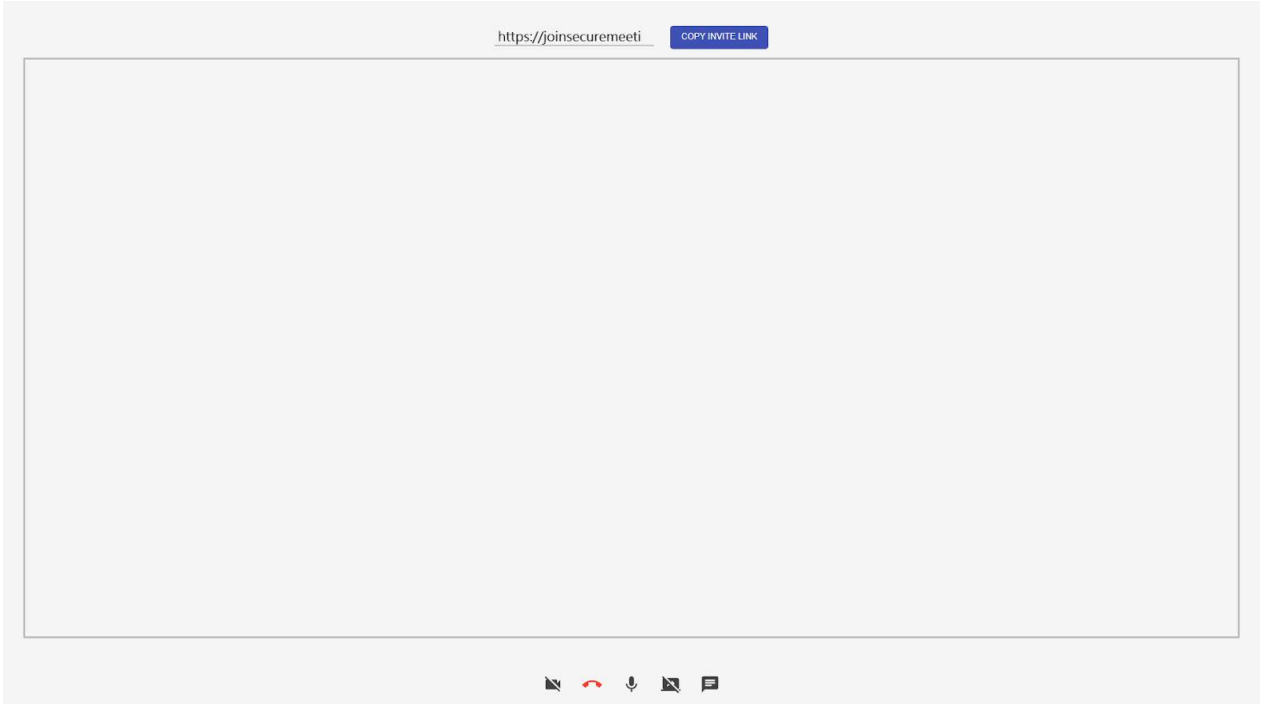
To provide the details of architectural design of the website.

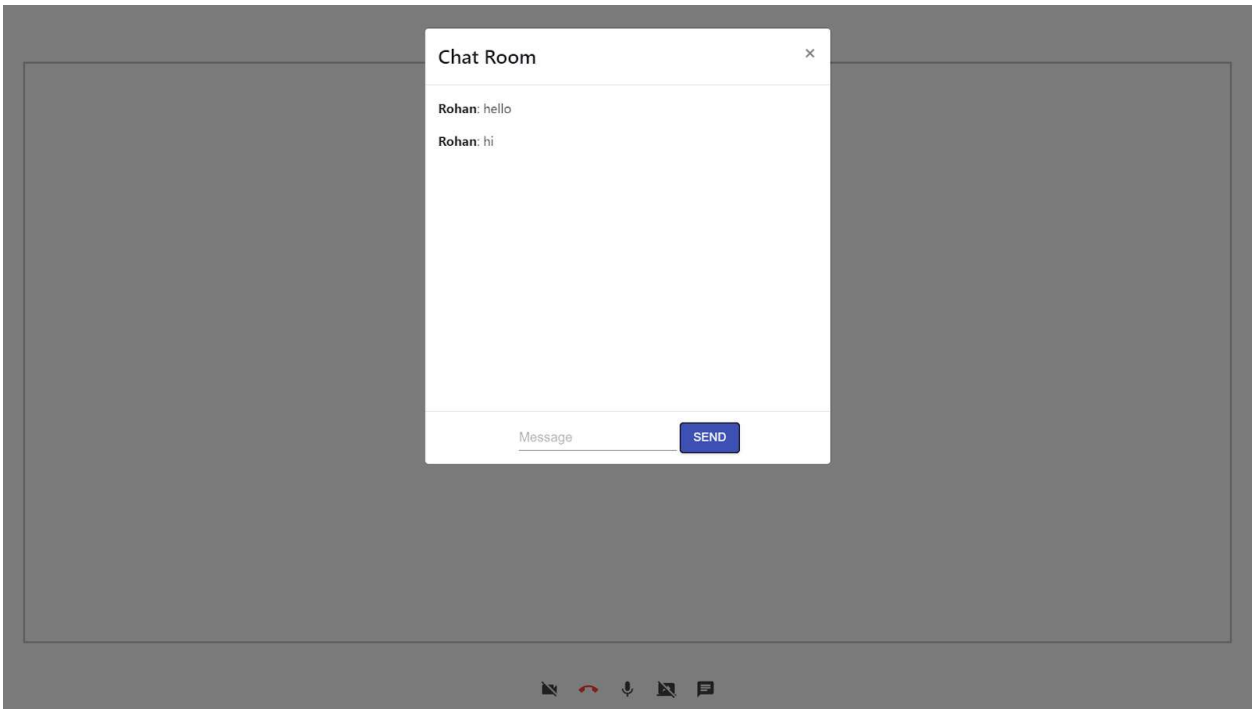
Team Members:

S No	Register No	Name	Role
1	RA2011030010050	Rohan Kumar	**Rep/Member**
2	RA2011030010038	Aniruddha Ghosh	**Member**
3	RA2011030010056	Anish Gogna	**Member**

Secure Meeting Platform

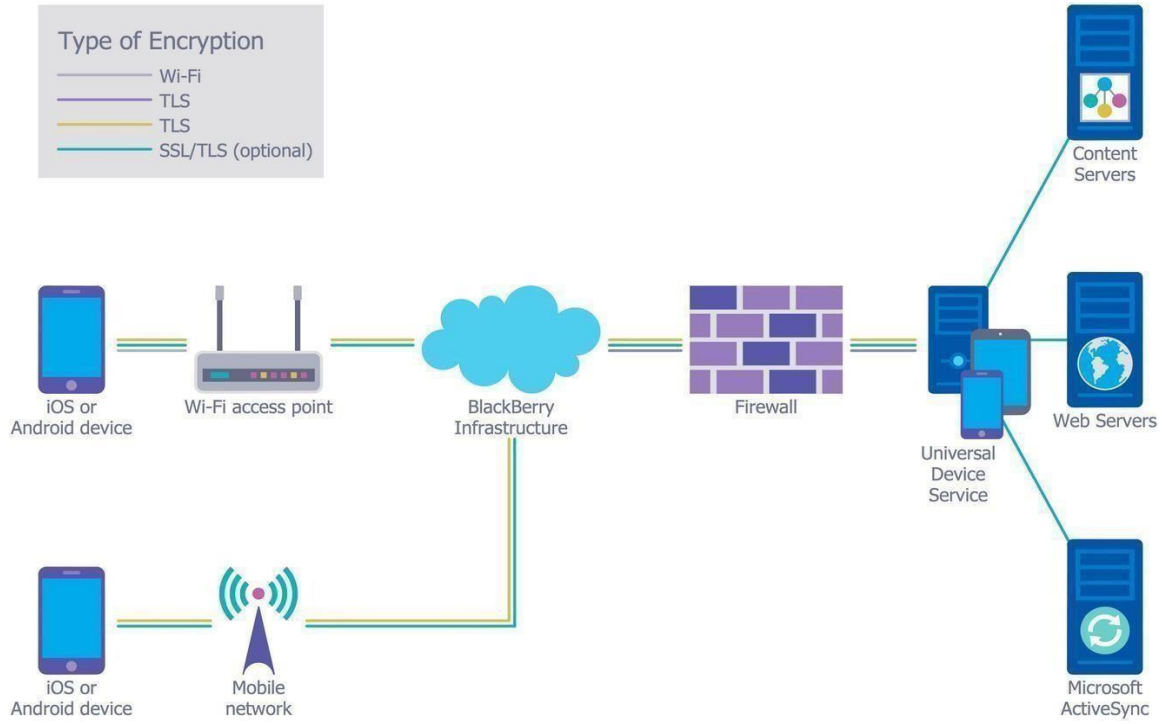






A secure meeting platform that replaces all sorts of meeting systems with high-security features and is utilized to give a safe and protected atmosphere. It is built with **ReactJS, Node.js, ExpressJS, MongoDB** and **SocketIO**.

System Architecture



Result:

Thus, the details of architectural design along with the screenshots were provided.

CONCLUSION

We have made the platform in which there will be an automatic Proxy and VPN detector so that the intruder is not able to forward his/her traffic through the VPN server and join the meet after it. Our system will block this type of traffic and will make the meet secure. We need to record each user's IP address for tracking purposes, which may limit the platform's audience and automatically block the person who tries to do malpractices and sending the alert to the host of the meeting. We also have the AI chatbox which blocks the unwanted message or spamming in the chatbox. We have focused on the security of the user using the platform so that he is safe from frauds. Our website will firstly verify User’s registration through OTP in email and mobile number and checks for their IP address and match with VPN Proxy Servers. In our project we discussed the prioritization of Stakeholders, Work Breakdown Structure, SWOT Analysis, Risk Management, System Architecture, Gantt chart and many Diagrams like- Use Case Diagrams, Class Diagrams, ER Diagrams, Sequence Diagram, Collaboration Diagram and we also made the framework for our website for better understanding of our project.

REFERENCES

[1] Gate Smashers, "*Software Development Life Cycle*", YouTube

[2] Jisti, "*Jisti-meet*", GitHub

[3] Uy Nguyen, "*Documenting a Software Architecture*", GitHub

[4] Node.js, "*Node.js v16.15.1 documentation*", NodeJS

[5] Express.js, "*Express.js v 5.x API*", ExpressJS

[6] Typescript, "*TypeScript Documentation*", Typescript

APPENDIX

Front End part:-

Index file detailing the structure and interconnection of all data

```
<!DOCTYPE html>
<html lang="en">
 <head>
   <meta charset="utf-8" />

   <meta name="viewport" content="width=device-width, initial-scale=1" />

   <meta name="description" content="Secure Meeting platform." />

   <meta name="keywords" />

   <meta name="author" content="SMeet" />
   <link rel="icon" href="%PUBLIC_URL%/icon.png" />

   <meta name="theme-color" content="#000000" />

   <link rel="manifest" href="%PUBLIC_URL%/manifest.json" />

   <title>Video Meeting</title>
   <script async src="https://www.googletagmanager.com/gtag/js?id=UA-163893871-
2"></script>
   <script>
     window.dataLayer = window.dataLayer || [];
     function gtag(){dataLayer.push(arguments);}
     gtag('js', new Date());

     gtag('config', 'UA-163893871-2');

   </script>

 </head>
 <body>
   <noscript>You need to enable JavaScript to run this app.</noscript>
   <div id="root"></div>
 </body>
</html>
```

JS file for the functionality:-

```
const express = require('express')
const http = require('http')
var cors = require('cors')
const app = express()
const bodyParser = require('body-parser')
const path = require("path")
var xss = require("xss")

var server = http.createServer(app)var io
= require('socket.io')(server)

app.use(cors())
app.use(bodyParser.json())
```

```
if(process.env.NODE_ENV==='production'){
app.use(express.static(_____dirname+"/build"))
app.get("*", (req, res) => {
res.sendFile(path.join(_dirname+"/build/index.html"))
})
}
app.set('port', (process.env.PORT ||4001))

sanitizeString = (str) => {
return xss(str)
}

connections = {}
messages = {}
timeOnline = {}

io.on('connection', (socket) => {

socket.on('join-call', (path) => {
if(connections[path] === undefined){
connections[path] = []
}
connections[path].push(socket.id)

timeOnline[socket.id] = new Date()

for(let a = 0; a < connections[path].length; ++a){
io.to(connections[path][a]).emit("user-joined", socket.id, connections[path])
}

if(messages[path] !== undefined){
for(let a = 0; a < messages[path].length; ++a){
io.to(socket.id).emit("chat-message", messages[path][a]['data'],
messages[path][a]['sender'], messages[path][a]['socket-id-sender'])
}
}

console.log(path, connections[path])
})

socket.on('signal', (toId, message) => {
io.to(toId).emit('signal', socket.id, message)
})

socket.on('chat-message', (data, sender) => {data
= sanitizeString(data)
sender = sanitizeString(sender)

var key
var ok = false
for (const [k, v] of Object.entries(connections)) {
for(let a = 0; a < v.length; ++a){
if(v[a] === socket.id){
key = k
ok = true
}
}
```

```
}

if(ok === true){
if(messages[key] === undefined){
messages[key] = []
}
messages[key].push({"sender": sender, "data": data, "socket-id-sender": socket.id})
console.log("message", key, ":", sender, data)

for(let a = 0; a < connections[key].length; ++a){
io.to(connections[key][a]).emit("chat-message", data, sender, socket.id)
}
}
})

socket.on('disconnect', () => {
var diffTime = Math.abs(timeOnline[socket.id] - new Date())var
key
for (const [k, v] of JSON.parse(JSON.stringify(Object.entries(connections)))) {for(let
a = 0; a < v.length; ++a){
if(v[a] === socket.id){
key = k

for(let a = 0; a < connections[key].length; ++a){
io.to(connections[key][a]).emit("user-left", socket.id)
}
var index = connections[key].indexOf(socket.id)
connections[key].splice(index, 1)

console.log(key, socket.id, Math.ceil(diffTime / 1000))

if(connections[key].length === 0){
delete connections[key]
}
}
}
}
})
})

server.listen(app.get('port'), () => {
console.log("listening on", app.get('port'))
})
```