

SOFTWARE ENGINEERING AND
PROJECT MANAGEMENT LAB

*Online Voting
Management
System*

By:

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DEPT. Of Computer Science Engineering

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No.	1-a
Title of Experiment	To identify the Software Project
Name of the candidate	Shravya Sharan
Team Members	Prachet Balaji, Karthik Menon
Register Number	RA1911026010055
Date of Experiment	22-01-2020

Mark Split Up

S.No	Description	Maximum Mark	Mark Obtained
1	Presentation	5	
2	Project Description	5	
Total		10	

Staff Signature with date

Aim:

To frame a project team, analyze and identify a Software Project.

Team Members:

Sr. No.	Register No	Name	Role
1	RA1911026010055	Shravya Sharan	Lead
2	RA1911026010054	Karthik Menon	Member
3	RA1911026010053	Prachet Balaji	Member

Project Title:

Online Voting Management System

Project Description:

Online Voting Management System is an unprecedented project premised on a collaborative approach that ensures greater citizen input through partnerships within the academic community, public interest organizations, and with policy makers, in the pursuit of establishing a voting systems development model that is collaborative and transparent - and which is founded on sound data. This project was developed in response to the growing voting system needs and in recognition of future regulatory changes and pending legal requirements our current systems are unable to meet.

Online Voting Management System seeks to effectively utilize Information and Communication Technology (ICT) initiatives with the goal of implementing a new and enhanced voting system that can be used as a tool for advancing democracy, building trust in electoral management, adding credibility to election results and increasing the overall efficiency of the electoral process

Result:

Thus, the project team formed and the project is described.



DEPT. Of Computer Science Engineering

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	1-b
Title of Experiment	Create Business Case, Arrive at a Problem Statement
Name of the candidate	Shravya Sharan
Team Members	Prachet Balaji, Karthik Menon
Register Number	RA1911026010055
Date of Experiment	22-01-2020

Mark Split Up

Sr. No.	Description	Maximum Mark	Mark Obtained
1	Presentation	5	
2	Business Case	5	
Total		10	

Staff Signature with date

Aim:

To create a business case and arrive at a Problem Statement for Online Election Management System.

Business Case:

The Business Case and Project Charter is given below.

Business Case and Project Charter

Lab Session #1-b

18CSC206J – Software Engineering & Project Management

School of Computing

SRM Institute of Science and Technology

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1. Executive Summary

Online voting is often seen as a tool for advancing democracy, building trust in electoral management, adding credibility to election results and increasing the overall efficiency of the electoral process.

Technology upgrades in elections are always challenging projects that require careful deliberation and planning. Introducing online voting is probably the most difficult upgrade as this technology touches the core of the entire electoral process—the casting and counting of the votes. Online voting greatly reduces direct human control and influence in this process. This provides an opportunity for solving some old electoral problems, but also introduces a whole range of new concerns.

The Online Voting Management Systems Project is an unprecedented project premised on a collaborative approach that ensures greater citizen input through partnerships within the academic community, public interest organizations, and with policy makers, in the pursuit of establishing a voting systems development model that is collaborative and transparent -- and which is founded on sound data.

This project was developed in response to the growing voting system needs and in recognition of future regulatory changes and pending legal requirements our current systems are unable to meet. This business case does not provide a safe recipe for the successful introduction of online voting; rather, it presents a software that can encompass the functions required in online voting system.

Within this, we shall address some of the recurring challenges and concerns that surround this technology and should be taken into account in an implementation strategy. This business charter provides the background and discusses typical features provided by online voting solutions and the various technical options associated with it, and also provides an overview of the strengths and weaknesses of this technology.

2. Strategic Business Context

2.1. Business Need

To develop a robust system in terms of designing and execution for online voting/internet voting to digitalise manual system of voting and promote citizen input by facilitating ease in voting process.

2.2. Business Outcomes

The expected business outcomes are listed below: -

1. Generation of revenue through development of software and execution of voting process including other support system.
2. Establish strong brand equity for the organisation.
3. Project diversification.
4. Ease in vote collection process.

3. Detailed Business Problem

3.1. Problem/Opportunity Statement

Online voting is often seen as a tool for making the electoral process more efficient and for increasing trust in its management. Properly implemented, online voting solutions can increase the security of the ballot, speed up the processing of results and make voting easier.

The present voting system has proved inefficient because: -

- 1) The voters' registration process is slow.
- 2) The manual collation of results takes time and gives room for result manipulation.
- 3) The inaccessible nature of election venues which includes the long distances to be covered by voters' to their registered location increases voters' apathy towards the election processes.
- 4) The issues of ballot box snatching, damage and other election violence.

The aforementioned issues associated with the traditional ballot paper voting, defiles the purpose of voting in election process as a formal process of expressing individual opinions for or against some motion. Online voting greatly reduces direct human control and influence in this process. This provides an opportunity for solving old electoral problems.

3.2.High Level Requirements

The key requirements to fully address the business need are: -

1. Government support- To be able to present the software as a substitute for manual voting system, it is imperative for the software to be recognised and accepted by the Government as well as for getting access to voters' data.
2. Skilled manpower- From the creation till successful execution, skilled manpower is required to assist in proper implementation and use of software.
3. Capital – To purchase other requirements.
4. Logistic Requirement-Proper network and technical availability.

3.3.Assumptions

The assumptions associated with the ability to address the key requirements are stated below: -

Sr. No.	Assumptions
1.	Complete support and cooperation from the government in terms of sharing eligible voters' genuine data.
2.	Availability of genuine and updated data with maximum accuracy
3.	Customer possess requisite skillset to run the software
4.	Availability of basic network connections within a small radius

3.4.Constraints

The specific constraints or restrictions that limits or place conditions on the investment or the project, especially those associated with the project scope are given in the following table: -

Sr. No.	Category	Constraints
1.	Finance	Dynamic Budget
2.	Regulatory	Changing government policies
3.	Manpower	Specific skillset requirement
4.	Security	Data security issue
5.	Demographic	Diverse population

3.5.Dependencies

The dependencies related to the overall business need, requirements, or solution are listed below:-

Dependency Description	Critical Date	Contact
Customer Organisation - provision of accurate data to be fed into the database.	-	Organisation

3.6.Stakeholder Analysis

The stakeholder environment has been discussed in the table below by considering the types of stakeholders, their specific roles, and their contributions to the realization of the investment.

Name	Designation	Role in Project
Priyanka Srinivas	Investor	Providing capital
Shankar Sharan	Chief Executive Officer (CEO)	Monitoring project development
Sarthak Gupta	Chief Marketing Officer (CMO)	Marketing the software
Sara S	Chief Information Office (CIO)	Monitoring software development
Arpita Muleva	Finance Head	Cost Approver and raising and managing the capital
Sweta Supriti	Head of Operations/Legal Compliance	Operation related regulatory issues
Prachet Balaji Karthik Menon Shravya Sharan	Department Head(s)	Scope / Requirement Approver
Sunil Arora	Election Commission of India	Defining framework and provision of data
SAPS Co. Ltd Pas Company	Business User(s)	Validate the functionalities

4. Detailed Analysis

4.1. Evaluation Criteria

The evaluation criteria that will be used for screening and analysis of the project are listed in the table below. It is categorised under three types - Deal breakers, Minimum requirement and Non-essential.

Evaluation Criteria	Deal Breakers (5)	Minimum Requirement (3)	Non-essential (1)	Score
Capital	Y	N	N	5
Infrastructure	N	Y	N	3
Manpower	N	Y	N	3
User Acceptability	N	Y	N	3
Diversified Customer Base	N	N	Y	1
Financial Risk	N	Y	N	3
Regulatory Risks	N	Y	N	3
Reputational Risk	N	Y	N	3

4.2. Cost of each Possible Options

The cost has been taken with respect to state of Maharashtra and the cost has been brought down to singular unit. The cost listed here is proportional and is subject to change.

Cost analysis of all resources required have been tabulated below: -

Resources	One Time [CapEx]		Operational [OpEx]			Total Cost in INR
	Effort (Cost)	Infrastructure Cost	License Cost	Maintenance Cost	Infrastructure Increment	
Workforce employed	-	-	-	50,00,000	-	50,00,000
Fixed Capital	1,50,00,000	-	-	-	-	1,50,00,000
Working Capital	-	-	-	3,50,00,000	50,00,000	4,00,00,000
System Equipment	-	-	5,00,000	25,00,000	20,00,000	50,00,000
Software License	10,00,000	-	-	-	-	10,00,000
Technical Equipment	20,00,000	20,00,000	-	-	-	40,00,000
Server Equipment	20,00,000	30,00,000	-	-	-	50,00,000
Marketing	-	-	-	20,00,000	30,00,000	50,00,000

Category	Cost in INR
One Time (CapEx)	2,50,00,000
Operational (OpEx)	5,50,00,000

4.3.Risks

The following table details the risks that can be forecasted during the creation and execution of the online voting management system software-

Risk ID (#)	Risk Type	Risk Description	Risk Category [Low/Medium/High]	Risk Appetite [Accept/Mitigate/Transfer]
R01L	Legal	Privacy of the voters' identity during the voting process.	High	Mitigate
R02S	Security	Protection of the users' data	High	Mitigate
R03C	Compliance	Change in voting rules and policies	Low	Accept
R04Op	Operational	Glitch in Software due to unforeseen issue	Low	Mitigate
R05F	Financial	Loan interest rate fluctuations	Medium	Transfer
R06T	Technical	Unavailability of requisite conditions.	Medium	Accept

5. Implementation & Governance

5.1.Required Skills

The following skills are required for Online Voting Management System: -

Skills	More Information
Designer	Designing how the user interacts with the system.
Frontend Development	Design and Develop UI and frontend layer and customize the graphics as required.
Backend Development	Design Database and Develop how information is handled within servers.
Testing	Develop Test Cases and identify the strengths and weakness of the product.
Project Management	Project Planning, Scheduling, Executing, Monitoring and Controlling

5.2.Milestone

Tabulated in the following table is a chronology of certain key events that occurred during the development of the Online Voting Management System software since its inception till the final product was achieved.

Sr. No.	Project Milestone	Description	Expected Date
1.	Inception of Project Idea	The increasing need for optimum utilisation of technology to transform voting procedures is discussed.	01-09-2018
2.	Preparation of Business Charter	A business charter is prepared detailing the requirements, cost analysis and benefits of Online voting Management System.	25-05-2019
3.	Approval of Project	The proposed idea is accepted and a project team is formed to execute the creation of software.	12-12-2019
4.	Execution of Project Planning	Requisite funds is acquired from the sponsors and the construction of the software is started.	02-02-2020
5.	Testing of First Prototype	The first prototype was presented and put through tests to check ease of use.	18-08-2020
6.	Testing of Final Prototype	The final product is tested and presented to small group of users for feedback	24-12-2020
7.	Release of Software	The software is introduced in the market for public use.	28-05-2021

5.3.Change Management

Change management workflow within the organisation is depicted in the diagram below: -

Sr. No.	Type	Description
1.	Developmental	Improving interpersonal communication with team building activities.
2.	Transformational	Transformation of traditional channels of business to virtual and electronically-mediated ones.
3.	Transitional	Updating IT services.
4.	People centric	Hiring new employees and changes to roles and responsibilities.
5.	Structural	Creating new teams or department comprised of employees most suited to a job.

5.4. Performance Measurement

This section highlights the monetary returns from the software and the criteria based on which the performance of the software will be analysed when compared to other options.

Return in timeline	Return in INR	Investment (INR)	Remaining Investment
Return on 1 st year	0	8,00,00,000	8,00,00,000
Return on 2 nd year	80,00,000	2,00,00,000	9,20,00,000
Return on 3 rd year	1,84,00,000	1,00,00,000	8,36,00,000
Return on 4 th year	2,50,80,000	0	5,85,20,000
Return on 5 th year	2,04,82,000	0	3,80,38,000

The organization will measure performance for project implementation and benefits realization based on the following parameters:-

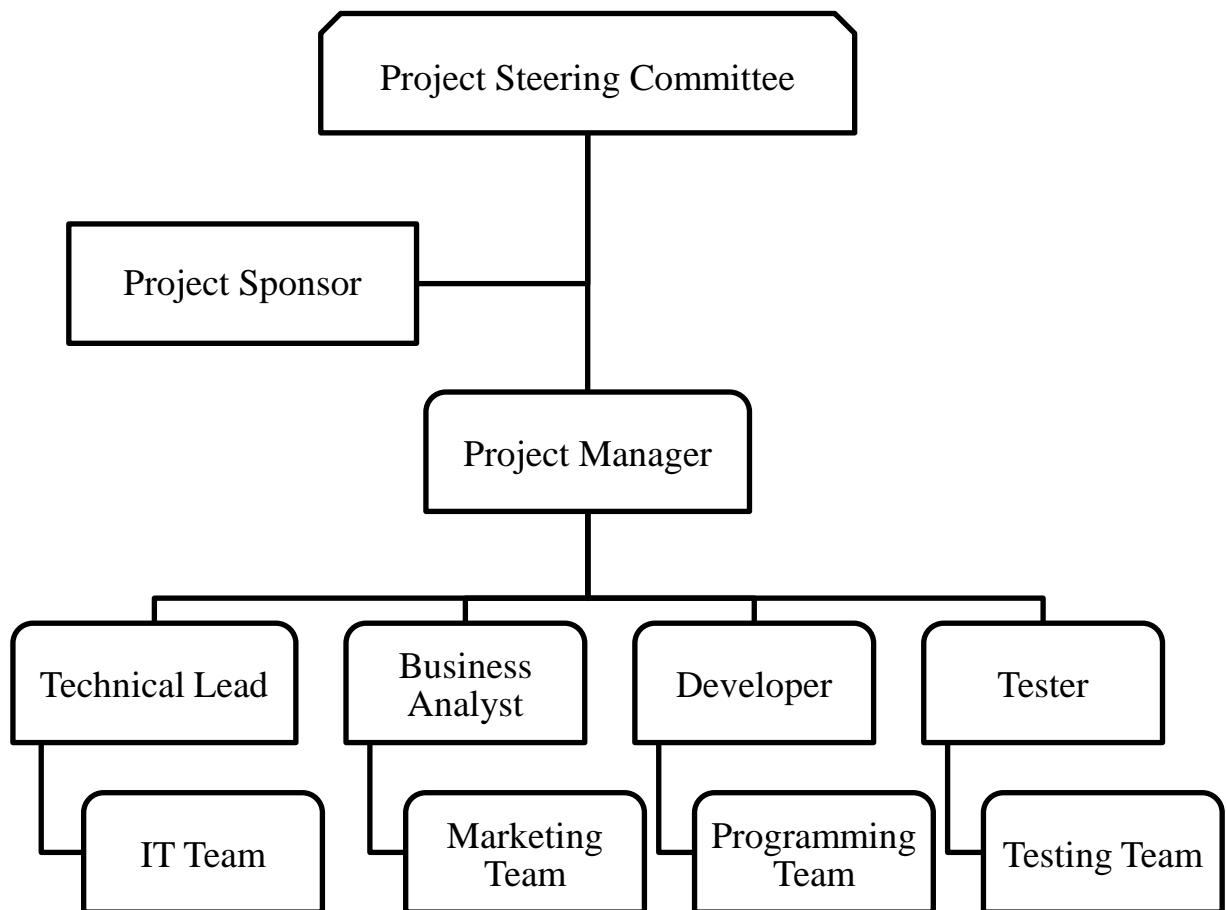
1. Top line growth – Increase in revenues or gross sales generated by the Online Voting Management System
2. Bottom line growth – Net income of the company after considering the investments made and the revenue generated.
3. Market share – Percentage of sales acquired in the market as compared to peer companies.
4. Revenue – Profit and losses incurred during and after the completion of creation of the software.
5. Intangible benefits – The following parameters shall be considered to gauge the intangible benefits provided to the company by Online Voting Management System Software:
 - a) Public perception – Increase/decrease in positive perception of the company.
 - b) Job Satisfaction – Employees' response to the project.
 - c) Enhanced User Experience – The extent to which the problems faced due to older voting systems have been reduced.
 - d) Brand Equity – Maintaining the brand image by providing better services.

6. Project Charter

6.1. Simplified Project Charter

Section	Details
Project Scope	<ul style="list-style-type: none"> a) Online Voting Management System seeks to effectively utilize existing technology to digitalise the present system of voting across organisations. b) As a digital platform, it provides the following benefits: - <ul style="list-style-type: none"> 1. Eliminate the need to cast your votes using paper or having to gather in person. 2. Protect the integrity of your vote by preventing voters from being able to vote multiple times. 3. Provides an easy vote administrator experience. 4. Has mechanisms for adapting to unique votes 5. Includes analytics, reporting, and auditing capabilities
Project Schedule	<ul style="list-style-type: none"> a) Inception of Project Idea – 01/09/2018 b) Preparation of Business Charter – 25/05/2019 c) Approval of Project – 12/12/2019 d) Execution of Project Planning – 02/02/2020 e) Testing of First Prototype – 18/08/2020 f) Testing of Final Prototype – 24/12/2020 g) Release of Software – 28/05/2021
Project Cost	<ul style="list-style-type: none"> a) One Time (CapEx) = Rs. 2,50,00,000 b) Operational (OpEx) = Rs. 5,50,00,000 c) Total cost = Rs. 8,00,00,000
Constraints	<ul style="list-style-type: none"> a) Dynamic Budget b) Reforming Government Policies c) Specific skillset requirement d) Diverse Demographic
ROI	<ul style="list-style-type: none"> a) 1st year = 0% b) 2nd year = 10% c) 3rd year = 10% d) 4th year = 5% e) 5th year = 35%
Intangible Benefit	<ul style="list-style-type: none"> a) Public perception – Increase in positive perception of the company. b) Enhanced User Experience – The extent to which the problems faced due to older voting systems have been reduced. c) Brand Equity – Maintaining the brand image by providing better services.

6.2.Project Team Structure



6.2.1. Roles & Responsibilities

Project Role	Responsibilities	Assigned To
Project Steering Committee	<ol style="list-style-type: none"> Review the progress and performance of project. Provide support, guidance and oversight of progress 	Shankar Sharan
Project Sponsor	<ol style="list-style-type: none"> Provides capital and resources. Ensure the resources are in place. 	Priyanka Srinivas
Project Manager	<ol style="list-style-type: none"> Define the requirements of the project. Build the project team. Lay out a blue print for the entire project. Communicate the goals of the project to the team 	Sarthak Gupta
Technical Lead	<ol style="list-style-type: none"> Establish a technical vision. Resolve technical disagreements. Manage the technical quality of team deliverables 	Prachet Balaji
Business Analyst	<ol style="list-style-type: none"> Analyse the business domain. Document its processes and systems. Outline business requirements. Match a software business model with the software being built. 	Shravya Sharan
Developer	<ol style="list-style-type: none"> Researching, designing, implementing and managing software programs. 	Karthik Menon
Tester	<ol style="list-style-type: none"> Analyse users' stories for validity and feasibility. Collaborate closely with other team members and departments. Execute all levels of testing (System, Integration, and Regression) Design and develop automation scripts when needed. 	Arpita Muleva

6.3.Approval

Name	Designation	Role in Project	Signature
Dr. C. Amuthadevi	Faculty -Incharge	Evaluator	

Reference

1. <https://www.pmi.org/>
2. <https://www.projectmanagement.com/>

Result:

Thus the business case was prepared and the problem statement was arrived.



DEPT. Of Computer Science Engineering

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	2
Title of Experiment	Identification of Project Methodology and Stakeholder Description template
Name of the candidate	Shravya Sharan
Team Members	Prachet Balaji, Karthik Menon
Register Number	RA1911026010055
Date of Experiment	05-02-2021

Mark Split Up

S.No	Description	Maximum Mark	Mark Obtained
1	Presentation	5	
2	Project Methodology	2.5	
3	Stakeholder Identification	2.5	
Total		10	

Staff Signature with date

Aim:

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

Team Members:

Sr No	Register No	Name	Role
1	RA1911026010055	Shravya Sharan	Lead
2	RA1911026010054	Karthik Menon	Member
3	RA1911026010053	Prachet Balaji	Member

Project Title:

Online Voting Management System

Project Methodology and Stakeholder Identification/Analysis

Lab Session #2

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1. Executive Summary

Online voting is often seen as a tool for advancing democracy, building trust in electoral management system, adding credibility to election results and increasing the overall efficiency of the electoral process. It also saves time, money, labour and most importantly reduce paper works adding value to the environment.

Selecting the most suitable software development life cycle model is an important task from both industrial and academic viewpoint. In this report the formal framework for selecting the best suitable model is provided. The framework incorporates not only features of the life cycle model, but their importance relatively to the kind of a software development project itself.

The principles of Agile Software Development Life Cycle Model emphasize the values of individuals and interaction over processes and tool; working software over comprehensive documentation; customer collaboration over contract negotiation and responding to changes over following a plan. Agile advocates focusing on delivering what the customer needs, individual capability, collaboration, and focusing on feedback and harnessing change.

Both system developers and stakeholders alike get more freedom of time and options than if the software was developed in a more rigid sequential way. Having options gives them the ability to leave important decisions until better alternatives are available; meaning the project can continue to move forward without fear of reaching a sudden standstill.

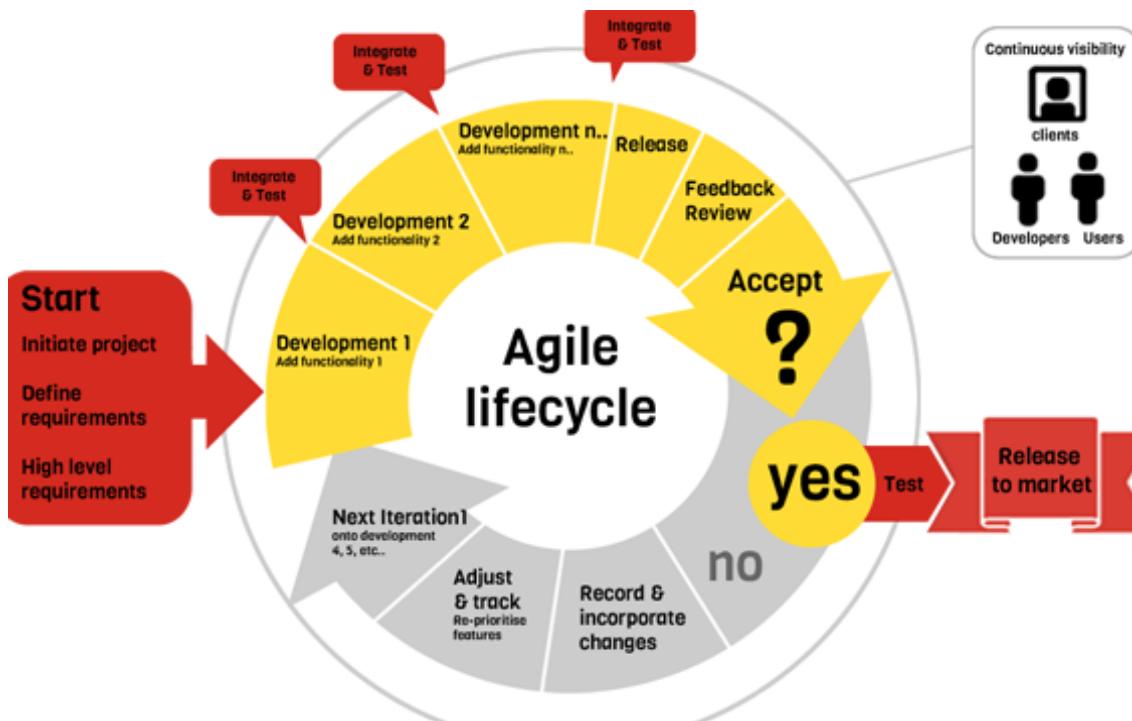
Performing stakeholder analysis is a great way to deliver a high-quality product. It helps in understanding various stakeholders of the product and to what extent they can affect the project. Stakeholder analysis uncovers and removes multiple barriers in understanding the project's progression. It also eliminates the roadblocks in releasing successful projects by getting information about project supporters, opponents, and their levels of importance in the project. This report highlights the plan of action employed to communicate with stakeholders and successfully analyse the available stakeholders.

2. Selection of Methodology

1. The methodology chosen for Online Voting Management System is Agile Software Development Life Cycle Model.
2. Agile SDLC model is a combination of iterative and incremental process models with focus on process adaptability and customer satisfaction by rapid delivery of working software product.
3. At a high-level overview, agile works by planning, designing, building, testing and reviewing —then repeating that process until the software is ready to be launched.
4. The principles of Agile Software Development Life Cycle Model emphasize the values of individuals and interaction over processes and tool; working software over comprehensive documentation; customer collaboration over contract negotiation and responding to changes over following a plan.
5. Agile advocates focusing on delivering what the customer needs, individual capability, collaboration, and focusing on feedback and harnessing change.
6. The reason why Agile model is best suited for Online Voting Management System is as follows: -
 - a. Agile development is a methodology, not a tool. It's an iterative approach that builds software incrementally, instead of delivering the complete product near the end of the timeline. This process is streamlined and flexible, allowing the developer to make changes on an as needed basis.
 - b. When new changes are needed to be implemented, the freedom agile gives to change is very important. New changes can be implemented at very little cost because of the frequency of new increments that are produced.
 - c. Unlike the waterfall model, in agile model, very limited planning is required to get started with the project. Agile assumes that the end users' needs are ever changing in a dynamic business and IT world. Changes can be discussed

and features can be newly effected or removed based on feedback. This effectively gives the customer the finished system they want or need.

- d. Both system developers and stakeholders alike, get more freedom of time and options than if the software was developed in a more rigid sequential way.
- e. Having options gives them the ability to leave important decisions until more or better data or even entire hosting programs are available; meaning the project can continue to move forward without fear of reaching a sudden standstill.



2.1. Roles and Methods

1. Scrum is a methodology in the agile framework which works on transparency, keen observation of process, and adaptability. This method is used in product development.

2. The aim of creating a scrum is to provide high performance within a small team, and assigning everyone an objective task to work on to provide effective results. Hence keeping this concept, the project methodology has been broken down into sprints.
3. Sprints can go from a week to months, which is dependent on the complexity. Sprint logs consist of-
 - a. Forecast
 - b. To-Do
 - c. In-Progress and
 - d. Done
4. Scrum suggests three roles in project development namely –
 - a. The Team:
 - i. This is the self-development team that collaborates and functions in an organized structure.
 - ii. It's the core, base and fundamental team which works in an organized way, also provides effective work in the development of a product.
 - b. The Scrum Master:
 - i. The scrum master is a facilitator of the team. He is an expert in agile methodologies and works in accordance with the principles.
 - ii. The scrum master manages the information collaboration within the different departments in a project team. Any changes in the project stage will be quickly brought in by the scrum master.
 - iii. The scrum master will have the responsibility of providing high yield and to make sure everything falls in the right place using the scrum values and principles.
 - c. Product Owner:
 - i. The scrum product owner stands as the point of vision to the scrum team of the agile development projects. He will make sure to elevate the team's goal and make it possible for them to work as per sprints.

- ii. He is also the motivator of the team towards a clear goal. His vision will be in successfully conveying the team what the best they are capable of doing.
- iii. The product owner can be from any vertical including marketing, or product management having an understanding of markets and project trends. He should be business savvy and with good communication skills to work cross-functionally in the organization.

5. There are four events that occur during each sprint:

a. Sprint Planning:

- i. This planning stage takes place on the first day of the sprint. The team is involved in the backlog work that they should work on during sprints.
- ii. The Team decides what to work on for the current period. The team consists of a Scrum Master, the developer's team and the product owner.
- iii. Only after the completion of the previous sprint review and retrospection, the next new sprint is taken place. Based on the previous sprint discussion, new sprint planning is considered.

b. Daily Scrum:

- i. The scrum team meets for a quick 15 minutes every day of the Sprint to inspect progress and decide what to work on for the next 24 hours.
- ii. The daily scrum is held every day in sprints. The intention here is to create a planned work for an effective understanding and communication between the teams.

c. Sprint Review:

- i. This is the stage where the development team present to the product owner.

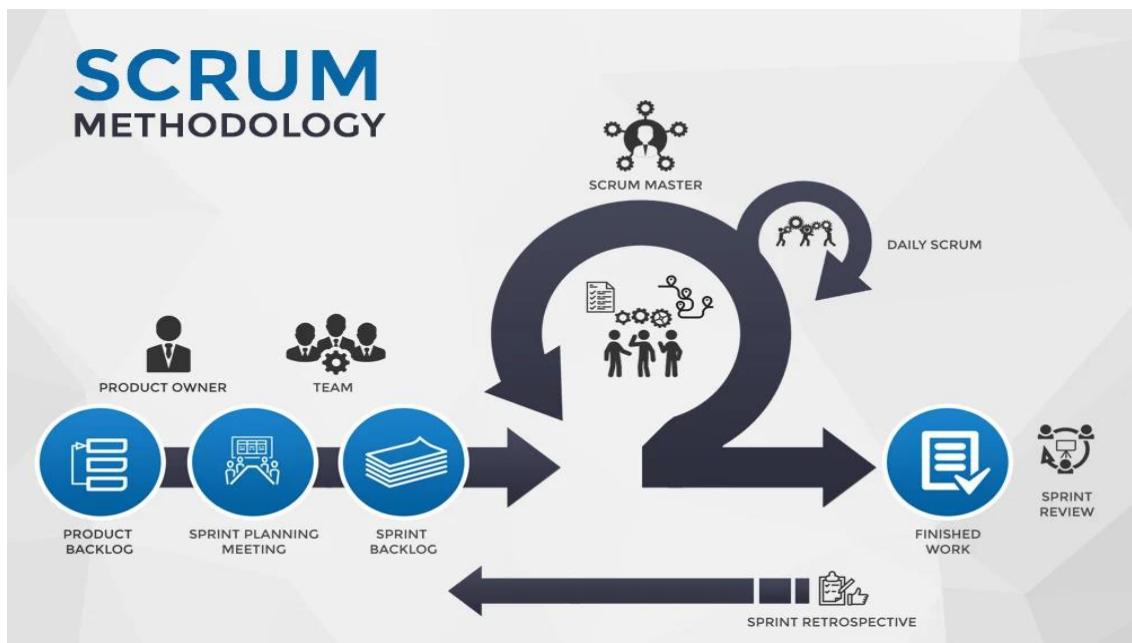
- ii. The Team collaborates about what was done and adapts the Backlog as needed.
 - iii. They present the work which is “done.” This is the end of the sprint.
 - iv. At an ideal stage, the sprint review meeting can go for a duration of one hour per week.
- d. Sprint Retrospective:
 - i. Sprint retrospective stage of the meeting is headed by the scrum master, which is done after the sprint review.
 - ii. The Team discusses how to improve in the next sprint. This means it gives the look back on past events and ways to improve.
 - iii. It gives a chance to the team to give feedback to the management on the progress of the project. This creates a plan for improvement in the next sprint.

6. There are three artifacts in the scrum method listed as follows:
- a. Product Backlog:
 - i. The product backlog is the detailed document of the scrum team. It's the final document that is referred for any details regarding the product.
 - ii. The product backlog should contain priorities. This helps in delivering as per priority.
 - iii. The product backlog should not contain any detailed statement, it's a top requirements document.
 - iv. Product backlog must be dynamic, it should change as per when the requirement gets into detailed work. As there are changes per requirement, the document changes and a new requirements area are added upon.
 - b. Sprint Backlog:
 - i. Making decisions in a group: Each and every state should be decided by the whole team and grouped.

ii. Organize task: The Scrum team should not need the assigned task from the Scrum master. They are self-organized to pick and work on tasks.

c. Product Increments:

i. Product Increments, in general, is a sum of all product backlog committed during the sprint. This is generally a piece of software collaborating across the organization, creating transparency. This can also be in the type of task boards or charts



3. Stakeholder Management

To be classified as a stakeholder, the person or group must have some interest or level of influence that can impact the project. The interest can be of the following types-

1. Profit Interest
2. Company Growth Interest
3. Monetary and Visibility Interest
4. Monetary and Career Progression Interest
5. Business Growth

3.1. Identification of Stakeholders

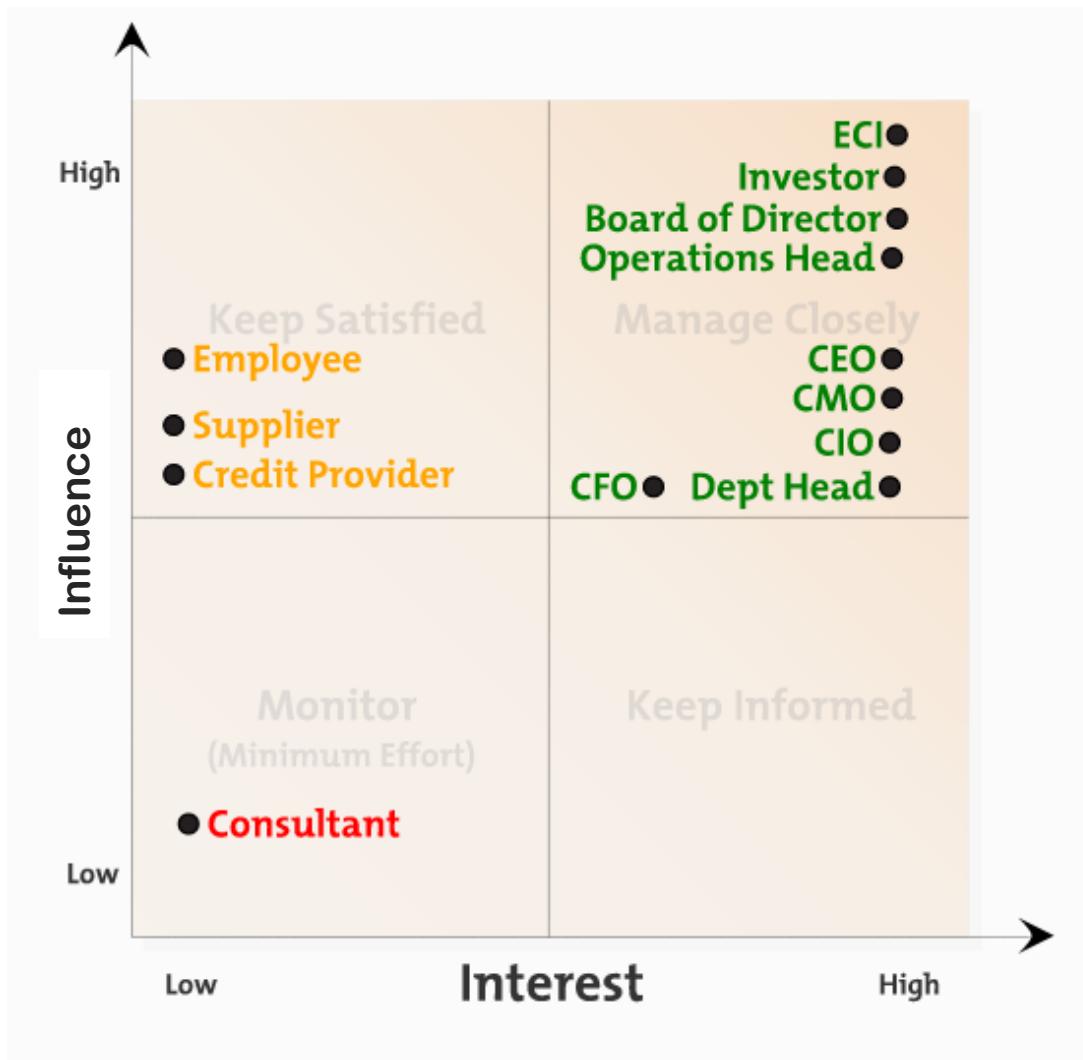
Stakeholders are categorized in the following three ways:

1. Internal or external
 - a. Internal stakeholders are stakeholders that exist inside a business. They are stakeholders who are directly affected by a project.
 - b. External stakeholders are those who have an interest in the success of a business but do not have a direct affiliation with the projects at an organization.
2. Primary or secondary
 - a. Primary stakeholders have the highest level of interest in the outcome of a project because they are directly affected by the outcome. They actively contribute to a project.
 - b. Secondary stakeholders help to complete projects, but on a lower, general level. These types of stakeholders help with administrative processes, financial, and legal matters.
3. Direct or indirect
 - a. Direct stakeholders are involved with the day-to-day activities with a project.
 - b. Indirect stakeholders pay attention to the finished project outcome rather than the process of completing it. Indirect stakeholders concern themselves with things like pricing, packaging, and availability.

Name	Type	Designation	Role in Project
Priyanka Srinivas	Internal Primary Direct	Investor	Providing capital
B99 Bank	External Secondary Indirect	Credit Provider	Providing credit
Amy Jones	Internal Primary Direct	Board of Director	Evaluation and approval of framework designed for the project.
Shankar Sharan	Internal Primary Direct	Chief Executive Officer (CEO)	Execution of project development
Sarthak Gupta	Internal Primary Direct	Chief Marketing Officer (CMO)	Marketing the software
Sara S	Internal Primary Direct	Chief Information Officer (CIO)	Monitoring software development
Arpita Muleva	Internal Primary Direct	Chief Financial Officer (CFO)	Cost Approver and raising and managing the capital
Sweta Supriti	Internal Primary Direct	Head of Operations/Legal Compliance	Operation related regulatory issues
Prachet Balaji Karthik Menon Shravya Sharan	Internal Primary Direct	Department Head(s)	Coordinating the various verticals
Alina S Matt J Inej G	Internal Primary Direct	Employees(s)	Executing the designated work
Athena Suppliers	External Secondary Indirect	Supplier(s)	Provision of requirements
Rahul Sharma	External Secondary Indirect	Consultant	Guidance for optimum utilization of resources.
Sunil Arora	External Primary Indirect	Election Commission of India	Defining framework and provision of data
SAPS Co. Ltd Pas Company	External Secondary Indirect	Business User(s)	Validate the functionalities

3.2. Interest and Influence matrix

Interest	Influence		
High	High	Low Interest, High Influence Keep them satisfied as they can be 'defenders'	High Interest, High Influence Engage them closely as they are key 'drivers'
Low	Low		
Low	High		
High	Low	Low Interest, Low Influence Low Priority as they are 'spectators'	High Interest, Low Influence Keep them informed as they can be 'blockers'



Stakeholder Name	Activity / Area / Phase	Interest	Influence	Priority (High / Medium/Low)
Investor	Providing Capital	High	High	High
Credit Provider	Providing credit	Low	High	Medium
Board of Director	Evaluation and approval of framework designed for the project.	High	High	High
Chief Executive Officer	Execution of project development	High	High	High
Chief Marketing Officer	Marketing the software	High	High	High
Chief Information Officer	Monitoring software development	High	High	High
Chief Financial Officer	Cost approver, raising and managing the capital	High	High	High
Head of Operations	Operation related regulatory issues	High	High	High
Department Head	Coordinating the various verticals	High	High	Medium
Consultant	Executing the designated work	Low	Low	Low
Employee	Provision of requirements	Low	High	Medium
Supplier	Guidance for optimum utilization of resources.	Low	High	High
Election Commission of India	Defining framework and provision of data	High	High	High
Business Users	Validate the functionalities	Low	Low	Low

3.3. Communication Plan for Stakeholders

The communication plan for stakeholders' details: -

1. Content: - The information to be shared
2. Medium: - The medium via which the information is shared.
3. Periodicity: - The frequency at which the information is shared.

The communication plan is subject to change in accordance with the interest and influence allotted to every stakeholder. Based on the interest and influence matrix detailed earlier (Section 3.2), the communication plan for the stakeholders is as follows-

1. High Interest High influence
 - a. Content – Status of project development and associated details, executive summary and description of process involved in the next stage.
 - b. Medium – Meeting, presentations, personal emails containing detailed reports.
 - c. Periodicity – Status report on fortnightly basis and meeting on monthly basis.
2. High Interest Low influence
 - a. Content – Development process summary, major milestones, recognition and appreciation for support.
 - b. Medium – Emails containing summary report, project blog/website updates.
 - c. Periodicity – Emails sent out on a bi-monthly basis, blog/website updates according to the milestone timeline.
3. Low Interest High influence
 - a. Content – Major milestones, overall summary of goals achieved along with their timeline, courtesy mail.
 - b. Medium – Emails, mail delivery system.
 - c. Periodicity – Once every four months.
4. Low Interest Low influence
 - a. Content – Major milestones.
 - b. Medium – Email.
 - c. Periodicity – Upon request or during final stages of development.

Result:

Thus, the Project Methodology was identified stakeholders were described.



DEPT. Of Computer Science Engineering

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	3
Title of Experiment	Identify/collect the Requirements and document them as Infrastructure Requirements, Functional Requirements and Non-Functional Requirements
Name of the candidate	Shravya Sharan
Team Members	Prachet Balaji, Karthik Menon
Register Number	RA1911026010055
Date of Experiment	22-02-2020

Mark Split Up

Sr. No.	Description	Maximum Mark	Mark Obtained
1	Presentation	5	
2	Requirements document	5	
Total		10	

Staff Signature with date

Aim:

To Identify and document the Requirements of a Software system.

Team Members:

Sr. No.	Register No	Name	Role
1	RA1911026010055	Shravya Sharan	Lead
2	RA1911026010054	Karthik Menon	Member
3	RA1911026010053	Prachet Balaji	Member

Requirements:

Project Scope and Requirements Management

Lab Session #3

18CSC206J – Software Engineering & Project Management

School of Computing

SRM Institute of Science and Technology

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1. Executive Summary

Online voting is often seen as a tool for advancing democracy, building trust in electoral management, adding credibility to election results and increasing the overall efficiency of the electoral process.

This document is provided in order to ensure that the software that the development team produces will be consistent with the needs of all customers. It is a description and elaboration of the project requirements that the development team has been provided with. Stating these requirements explicitly helps ensure that any potential miscommunications are dealt with at an early stage.

This report identifies and discusses the need for systematically producing a complete set of requirements specification for Online Voting Management Systems that unifies the requirements imposed by the existing legal framework, the functionality reflected by the conventional voting procedures, and the required security attributes that the system should exhibit.

Software engineering methodology has been applied for elucidating user requirements specification in a widely accepted format. This has been accomplished through a set of user stories, along with supplementary specifications. Thus, online voting management system has been conceptualised in a way that confines the number of possible subsequent designs, yet does not dictate a particular one.

This report elucidates the requirements and its process while also validating and enhancing these requirements focusing, also, on non-functional ones with the expectation to incorporate the outcome of these activities in the system design and development phases.

2. Project Scope

Sr. No	Activities In Scope	Activities Out of Scope
1.	Development of Election Server	Expansion
2.	Designing Election Editor	Increased efficiency
3.	Setting up Voters' Database	
4.	Developing Voting Client	
5.	Development of Prototype	
6.	Maintaining Accessibility	
7.	Verification of Data Input	
8.	Securing Data	

2.1. In Scope

- 1. Development of Election Server -**
 - a. The Server will be responsible for storing the settings of each election, generating passwords for authorized Voters, receiving and authenticating votes, storing votes on the Voting Database, generating statistics at the end of each election and maintaining and verifying security and voter privacy.
 - b. The Server will also potentially contact all authorized voters by e-mail to give them their username information, passwords, Server address, election code, instructions to obtain the Voting Client and contact information of the Elections Officer
- 2. Designing Election Editor – Graphical User Interface application.**
 - a. The Election Editor enables Elections Officers to design custom ballots and define configuration settings for each election. It will also allow the Elections Officer to suspend an election.
 - b. The Elections Officer will also use the Election editor to enter the enumeration list. The enumeration will be a list of all voters that are authorized to vote in an election. This list could include the usernames and e-mail addresses of each authorized voter.
- 3. Setting up Voting Database-**
 - a. The Voting Database will hold the enumeration list for each election as well as all votes registered for each election. It will be encrypted and will not be directly accessible by anyone.
 - b. The votes stored from each election will be deleted from the database at a pre-set time after the termination of each election.
- 4. Development of Voting Client-**
 - a. The Voting Client will be a simple piece of software that voters with only a minimal background in computers will be able to use on their own computers
 - b. They will use it to vote by establishing a network connection to the Server and sending their encrypted votes.
 - c. Once they have connected, the Server will send them the ballot which they will then fill out using the Client and send back to the Server.
 - d. Voters will also use the Client to change their votes if this option has been enabled in a particular election

5. Development of Prototype –
 - a. Developing a prototype to present to the election commission to gain interest and traction.
 - b. The prototype will be used to gain customer feedback to incorporate any suggestions or improvements as per the customer's requirements.
6. Maintaining Accessibility –
 - a. Developing an application which is easy to interact with by majority of the population.
7. Verification of Data Input –
 - a. Collecting Voters Data and verifying the given data.
 - b. Ensuring any duplicate or false data is removed.
 - c. Data will be linked with unique ID (or Aadhar number) for confirmation.
8. Securing Data –
 - a. Since user data in no case can be compromised, devolving a strong data secure is a primary scope.
 - b. Incorporating features of encryption, OTP and biometric confirmation.
 - c. Setting up rate limiting to limit the number of users accessing the system.
 - d. Establishing a web firewall system to prevent DDoS attack.
 - e. Using Anycast network for further security.

2.2. Out of Scope

1. Expansion –
 - a. Expanding this software to cater the elections of the entire country is something to look forward to.
2. Efficiency of the process/Setting up centres –
 - a. Make the entire process more efficient and set up different centres for people who still cannot access the software due to infrastructural reasons.

3. Epics

Epic (#)	Epic Description
E1	Registration and Login Module
E2	Administration Module
E3	Election Officer Module
E4	Voting Conduction Module
E5	Election Conduction Module
E6	Reports Module

1. Registration and Login Module –

- a. In this module the users have to enter requisite data and register with the software to be able to access the software and its applications. The system will generate ID and password for the users using which they can login into the system.
- b. Admin Login – The Admin is responsible for verifying candidates and approving voters. They must enter their assigned credentials to be able to avail the functions.
- c. Voters Login – The voters have to enter documents for verification to be able to cast their vote.
- d. Candidate Login – The candidate must enter their details and get it approved from the admin to contest elections.

2. Administration Module –

- a. A System Administrator will be granted functionalities within this module.
- b. It has authority to store the user information, providing registration and performing the adding, deleting, updating the user and election candidate information.
- c. The System Administrator will not have control over or access to any particular elections once they are activated on the server, but he or she will be the only one able to authorize Elections Officers to start new elections.
- d. A System Administrator will be required to oversee the installation and operation of each Elections Server is necessary to ensure that the overall system is working and that its security integrity is not breached.
- e. The Admin dashboard has overall functional rights.

3. Election Officer Module – This module deals with assigning necessary functions to the Election Officer.
 - a. The Elections Officer is given the responsibility for overseeing individual elections by the organization holding each election.
 - b. Each election housed on a Server may have one or more Elections Officers and it is possible for an Elections Officer to be responsible for more than one election.
 - c. This module monitors each election in a way that is independent of the general overall maintenance provided by the Systems Administrator.
 - d. Once an Elections Officer is authorized to set up an election by the System Administrator, he or she is the only one with the ability to design ballots, configure election options, enter an enumeration list and suspend the election He or she is also responsible for answering questions over e-mail that voters or others may have during the election
4. Voting Conduction Module –
 - a. Voters have the provision to view the list of candidates who are contesting for the election and cast their vote.
 - b. While voting, verification code is generated and sent to the voter mail id. The voter has to enter a verification code to complete the voting process.
5. Election Conduction Module –
 - a. In this module the voting process and counting is performed. The election is created by the organiser.
 - b. The vote acquired by each candidate will be displayed.
 - c. Total number of votes for each candidate is calculated and displayed. It helps to avoid duplication.
 - d. The candidate with maximum vote is awarded as winning candidate. All these processes are done in a fast and effective manner.
6. Reports Module –
 - a. This is the last module in this project. By this module the Admin gets the final report of the voting.
 - b. The candidate with higher votes is displayed as winning candidate. The details regarding the voting process will be stored in the database for future reference.

4. Requirements

4.1. Functional Requirements

Requirement (#)	Requirement Specification	Department	Business User	Priority
E1FR1	As a voter, I should receive a message declaring the success/failure of the vote casted.	IT Department (Developer)	Voters	Secondary
E1FR2	As a voter, I should receive appropriate error message in case of system malfunction.	IT Department (Developer)	Voters	Secondary
E2FR1	As an election organiser, I can create, view and modify election procedure.	IT Department (Developer)	Election Commission of India, Others	Primary
E2FR2	As an election organiser, I can authorize voters using their unique ID.	IT Department (Developer, Security)	Election Commission of India, Others	Primary
E3FR1	As system administrator, I can transfer information of system functions over public network while maintaining their privacy.	IT Department (Developer, Security)	Organization	Primary
E2FR3	As an election organiser, I can import, insert, view and modify electors for one or more election procedures.	IT Department (Developer)	Election Commission of India, Others	Primary
E2FR4	As an election organiser, I can create and distribute authentication means to electors.	IT Department (Developer)	Election Commission of India, Others	Primary
E2FR5	As an election organiser, I can notify the system about candidate parties for an election.	IT Department (Developer)	Election Commission of India, Others	Primary
E4FR1	As candidates or election organisers, I can insert, modify and delete candidate's data for a specific election region.	IT Department (Developer)	Candidates, Others	Primary
E2FR6	As election organiser, I can create sample ballots for the election.	IT Department (Developer)	Election Commission of India, Others	Primary
E4FR2	As candidate, I can provide information about candidate parties.	IT Department (Developer)	Candidates	Secondary
E1FR3	As voter, I can view all available candidates and cast my vote.	IT Department (Developer)	Voters	Primary
E2FR7	As election organiser, I can augment the election result.	IT Department (Developer)	Election Commission of India, Others	Primary
E3FR2	As system administrator or election organiser, I can verify the result integrity.	IT Department (Developer, Security)	Organization	Primary
E3FR3	As system administrator, I can view all internal system operation without sacrificing voter confidentiality.	IT Department (Security)	Organization	Primary

4.2. Non-Functional Requirements

Requirement (#)	Category of NFR	Requirement Specification	Department
NFRP1	Performance	Reasonably short response time (3 seconds)	IT Department- (Network and Developer)
NFRP2	Performance	E-vote should not have any visible deterioration.	IT Department
NFRP3	Performance	Capability of recovering from system crashes and continuing the voting process.	IT Department (Support)
NFRA1	Availability	Application should be available for the entire duration of the voting process.	IT Department
NFRS1	Scalability	Registration Service should scale to serve 1000 request per second over 5 minutes timespan	IT Department (Developer, Hardware)
NFRS2	Scalability	Capability of processing over 20 transactions each second.	IT Department (Developer, Hardware)
NFRC1	Confidentiality	Security features (OTP) for voter anonymity.	IT Department (Security)
NFRE1	Compliance	Process supported by the system should adhere to the laws specified by the government.	Department of Compliance
NFRE2	Compliance	Voting application should cease accepting votes after the specified time duration.	Department of Compliance and IT department
NFRU1	Usability	The system should provide an easy-to-use interface which is easily navigable.	IT Department (Developer)
NFRY1	Security	Availability of password authentication and encrypted transactions.	IT Department (Security)
NFRY2	Security	Passwords generated and communicated to the users to be stored in servers in encrypted form.	IT Department (Security)
NFRY3	Security	The system should possess strategies to counter attempts of hacking or unauthorised access.	IT Department (Security)
NFRY4	Security	Minimum time gap between successive invalid log-in attempts.	IT Department (Security)
NFRY5	Security	Access to administrator to shut down the server and close all connections immediately in case of any security lapse.	IT Department (Developer and Security)
NFRT1	Traceability	Storage of votes being polled in a backup server at rapid frequency	IT Department (Hardware)
NFRT2	Traceability	All changes occurring within the system should be tracked in the auditor backlog.	Department of Audit and IT Department (IT Admin)

NFRF1	Flexibility	The user interface should be customizable to suit the users' needs.	IT Department (Developer)
NFRF2	Flexibility	Features for addition or subtraction of required data.	IT Department (Developer)
NFRE1	Extensibility	Application should successfully execute election services at all levels of government.	IT Department (Developer)
NFRIN1	Interoperability	The system should be able to work with other existing systems and ensure backward and forward compatibility.	IT Department (Developer)
NFRR1	Reliability	The system should be robust and have a high degree of fault tolerance.	IT Department (Developer)
NFRR2	Reliability	The system should impose a successful strategy to avoid multi voting.	IT Department (Developer)
NFRR3	Reliability	Application should be able to accurately count the polled votes and display the result.	IT Department (Developer)
NFRI1	Integrity	The administrators must be authenticated before being granted access to the system.	IT Department (Developer and Security)
NFRI2	Integrity	The system should be logically and physically secure to protect the database.	IT Department (Developer and Security)

4.3. Infrastructure Requirements

Requirement (#)	Requirement Specification	Department	Business User	Status
IR1	MYSQL DBMNS	IT Department	Organization	Pending
IR2	NetBeans IDE 7.1.2	IT Department	Organization	Pending
IR3	Biometric Setup	IT Department	Organization	Pending
IR4	JAVA Coding and XML	IT Department	Organization	Progress
IR5	Cloudflare DDoS Mitigation Equipment	IT Department	Organization	Pending
IR6	Microsoft Windows	IT Department	User and Organization	Completed
IR7	Ubuntu 9.10	IT Department	Organization	Completed
IR8	Web Browser	IT Department	User and Organization	Completed
IR9	Reporting Tool	IT Department	User and Organization	Progress

1. MYSQL DBMS - It allows combination, extraction, manipulation and organization of data in the voters' database. It is platform independent and therefore can be implemented and used across several such as Windows, Linux server and is compatible with various hardware mainframes. It is fast in performance, stable and provides business value at a low cost.
2. NetBeans IDE 7.1.2- The NetBeans IDE is an integrated development environment available for Windows, Mac, Linux, and Solaris. The NetBeans project consists of an open-source IDE and an application platform that enable developers to rapidly create web, enterprise, desktop, and mobile applications using the Java platform, as well as PHP, JavaScript and Ajax, Groovy and Grails, and C/C++.
3. Biometric Setup – For additional security during voting procedures, an option of verification via biometrics is used wherein voter can verify their identity with their finger print and other allotted credentials.
4. JAVA coding- The voting client and election server will be written in JAVA with any configuration files written in XML. The description language for the ballot is also written in XML
5. Cloudflare DDoS Mitigation Equipment - The DDoS protection in Cloudflare is multifaceted in order to mitigate the many possible attack vectors. Cloudflare's network is capable of handling DDoS attacks 10X larger than have ever occurred. Cloudflare's network runs 10% of the Internet, creating an advantage in analysing data from attack traffic around the globe.
6. Web browsers: Mozilla Firefox, Google Chrome, Opera, Internet Explorer are required to run the application.
7. Reporting Tool – All configuration files must be in XML and the statistical reports must be generated in HTML.
8. Microsoft Windows
 - a. Processor: 800MHz Intel Pentium III or equivalent
 - b. Memory: 512 MB
 - c. Disk space: 750 MB of free disk space
9. Ubuntu 9.10:
 - a. Processor: 800MHz Intel Pentium III or equivalent
 - b. Memory: 512 MB

c. Disk space: 650 MB of free disk space

4.4. Requirement definition in Agile

User Story	Acceptance Criteria	Size of User Story
As Election Organiser, I want a voting system with different scales and flexibility so that I can carry out elections at national, state and local levels in different regions.	Scalability of system. Conduct elections at different levels.	Medium
As Election Organiser, I want an identity authentication system to prohibit unauthorised voting.	Identity authentication system. Prohibition of unauthorised voting.	Small
As Election Organiser, I want a statistical calculator so that I can view the results every day in every region for every party or individual.	Statistical Calculator View compiled results and their statistics.	Medium
As Voter, I want an information board so that I can easily view candidate statements or final results.	Information Board for Voters View Candidate details, statements and final results.	Small
As Voter, I want a re-vote function so I can change my vote within the given time range.	Re-vote function. Ability to change the vote within time restrictions.	Small
As Voter, I want a profile management section so I can check and modify personal data.	Profile management section. Updating and modifying voter data.	Small
As Voter, I want information reminders for any updates in candidate data or voting deadline so I can stay up to date with the process.	Information reminders Keeping users up to date with election processes.	Medium
As Viewer, I want a function to get general voting information (candidates, deadline, results etc.) without having to log in to the system.	Information dashboard Display of general voting information.	Medium
As Auditor, I want an independent module so that I can audit, administrate and review the voting process.	Independent module Administratate the voting process.	Medium
As Reporter or Analyst, I want access to statistical information gathered from the voting procedure.	Statistical information. Display of information.	Small

Result:

Thus, the requirements are identified, collected and documented.



DEPT. Of Computer Science Engineering

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, Find Job roles and responsibilities, Calculate Project effort based on resources
Name of the candidate	Shravya Sharan
Team Members	Prachet Balaji, Karthik Menon
Register Number	RA1911026010055
Date of Experiment	01-03-2020

Mark Split Up

Sr. No.	Description	Maximum Mark	Mark Obtained
1	Presentation	5	
2	Requirements document	5	
Total		10	

Staff Signature with date

Aim:

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

Team Members:

Sr. No.	Register No	Name	Role
1	RA1911026010055	Shravya Sharan	Lead
2	RA1911026010054	Karthik Menon	Member
3	RA1911026010053	Prachet Balaji	Member

Requirements:

Project Management Plan, Effort and Cost Estimation and Team Formation

Lab Session #4

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1. Executive Summary

Online voting is often seen as a tool for advancing democracy, building trust in electoral management, adding credibility to election results and increasing the overall efficiency of the electoral process.

This report identifies and discusses the project plan for Online Voting Management System. Project planning as a process is output oriented. It is concerned with deciding in advance what, when, how, and who will take the necessary actions to accomplish established objectives. In this context planning is a pervasive management function which is accomplished by all levels in the project hierarchy, the difference being scope, detail, and the magnitude of the effort.

Planning forms the foundation for future actions, using the past as a guide. The purpose of this paper is to examine the project environment for planning, to consider the purpose of planning, to focus on the stages of project planning, to evaluate the elements of planning for the project, and to discuss the role of decision-making in project planning.

Software engineering methodology has been applied for elucidating the standard process for estimation which starts with a high-level project vision finalization. This document is then further transformed into the Work Breakdown Structure. The proposed solution is broken down into smaller modules and features, to make sure that all members are on the same page with the client regarding the scope and functionality of the software product. Every feature within a module is analysed and estimated separately, using one or a combination of the following methods: Analogy-based estimation, Statistical method, Expert judgment.

As a result, we get an elaborated document with the detailed breakdown of the scope of work and estimated duration of each task. This report elucidates the estimation and its process while including project team description and responsibility matrix to incorporate the outcome of these activities in the system design and development phases.

2. Project Management Plan

Focus Area	Details
Integration Management	<ul style="list-style-type: none"> 1. Direct and manage project team – Hierarchical Setup based on Scrum Methodology 2. Monitoring and controlling project- Through Sprint Review by Sprint Master 3. Perform integrated change control and issue managements. 4. Generate work breakdown structure
Scope Management	<ul style="list-style-type: none"> 1. Assess and manage requirements 2. Translate WBS into discrete tasks 3. Identify project requirements – Functional and Non-Functional 4. Develop a scope statement
Schedule Management	<ul style="list-style-type: none"> 1. Define Sprints 2. Define iterations 3. Define project schedule 4. Document milestones 5. Maintain schedule control
Cost Management	<ul style="list-style-type: none"> 1. Estimate budget and effort 2. Implement budget control
Quality Management	<ul style="list-style-type: none"> 1. Quality standards 2. Quality control activities 3. Quality assurance activities - Repeated feedback from users
Resource Management	<ul style="list-style-type: none"> 1. Identification of feasible resources 2. Managing of human, physical and financial resources
Stakeholder	<ul style="list-style-type: none"> 1. Identifying project stakeholders – interest and influence level 2. Categorising stakeholders – Internal/ External, Primary/Secondary, Direct/Indirect 3. Communication plan
Communication Management	<ul style="list-style-type: none"> 1. Type of Communication – Verbal /Non verbal 2. Periodicity – weekly, monthly, bi-monthly, upon request 3. Content – daily report, status update, milestones documentation 4. Tools – meeting, blog, emails
Risk Management	<ul style="list-style-type: none"> 1. Identifying risk 2. Analysing, prioritizing and managing risk 3. Planning the risk response – accept, mitigate, transfer
Procurement Management	<ul style="list-style-type: none"> 1. Planning, Selection and Administering Procurement.

3. Estimation

3.1. Effort and Cost Estimation

WBS	Activity	Activity Description	Sub-Task	Sub-Task Description	Effort (in hours)	Cost in INR
E1FR1	E1R1A1	Creating an Efficient System	E1R1A1T1	Reasonable short response time	5	2500
			E1R1A1T2	Capability of recovering from system crashes and continuing voting process	7	3500
			E1R1A1T3	Appropriate notification display for steps in voting process.	4	2000
E2FR2	E1R2A2	Securing the System	E2R1A2T1	Encryption of data within the system	9	4500
			E2R1A2T2	DDoS Cloudflare setup	10	5000
			E2R2A2T3	Firewall setup to prevent unauthorised access	8	4000
			E2R2A2T4	Administrator access to shut down system in case of security lapse	6	3000
			E2R2A2T5	Biometric and unique ID setup to verify voter	10	5000
E3FR3	E3R3A3	Maintaining software reliability	E3R3A3T1	Successful functions to avoid multi-voting	10	5000
			E3R3A3T2	Accurate counting of votes to display result	8	4000
			E3R3A3T3	High fault tolerance	5	2500
E4FR4	E4R2A4	Making the system flexible	E4R4A4T1	The user interface should be customizable to suit the users' needs	2	1000
			E4R4A4T2	Features for addition or subtraction of data	1	500

Effort (hr)	Cost (INR)
1	500

3.2. Infrastructure/Resource Cost [CapEx]

Infrastructure Requirement	Qty	Cost per qty	Cost per item
Storage Equipment	20	10,00,000	5,00,000
Technical Equipment	20	20,00,000	50,000
Server Equipment	50	50,00,000	1,00,000

4. Maintenance and Support Cost [OpEx]

Category	Details	Qty	Cost per qty per annum	Cost per item
People	1. Organization Employees 2. External Testers 3. Voting Centre Setup Employee 4. Consultant	20 10 20 2	20,00,000	10,40,00,000
License	1. NetBeans IDE 2. XML 3. Cloudflare 4. Ubuntu 5. Microsoft	5	1,00,000	5,00,000
Infrastructures	1. System Equipment 2. Server Equipment 3. Biometric Equipment 4. Storage and Network Equipment	5 5 5 5	20,000	4,00,000
Marketing and Awareness	1. Awareness Campaigns 2. Advertisement 3. Publicity	50	1,000	5,00,000

5. Project Team Formation

5.1. Identification of Team Members

Team	Role	Responsibilities
Project Steering Committee	Board of Director	Evaluation and approval of framework designed for the project.
	Chief Executive Officer	Execution of project development
	Chief Marketing Officer	Marketing the software
	Chief Information Officer	Monitoring software development
	Chief Financial Officer	Cost approver, raising and managing the capital
Project Sponsor	Investor	Providing Capital
	Credit Provider	Providing credit
Project Team	Head of Operations	Operation related regulatory issues
	Project Manager	Manage the project
	Business Analyst	Discuss and Document Requirements
	Technical Lead	Design the end-to-end architecture
	Compliance Head	Manage legalities associated.
	Frontend Developer	Develop user interface
	Backend Developer	Design, Develop and Unit Test Server
	Tester	Define Test Cases and Perform Testing
External	Election Commission of India	Defining framework and provision of data
	Business Users	Validate the functionalities
	Supplier	Guidance for optimum utilization of resources.

5.2. Responsibility Assignment Matrix

A	Accountable
R	Responsible
C	Consult
I	Inform

	Board of Director	CEO	CMO	CIO	CFO	Investor	Credit Provider	Head of Operations	Project Manager	Business Analyst	Technical Lead	Compliance Head	Developer	Tester	Election Commission of India	Business Users	Suppliers
Deliverable or Task	Project Steering Committee					Sponsor	Project Team							External Resources			
Initial Phase Activities																	
Business Case	I	I	I	I	I	I	I	C	R	C					I		
Feasibility Study		I	I	I	I	I	I	C	R	R					I		
Project Charter	I	I	I	I	I	I	I	C	R	C					I		
Identify Team		I	I	I	I	I		C	R	I	I	I	I	I			
Review	I	I	I	I	I	I		A	R	A	A	A	A	A			
Plan Phase Activities																	
Work Breakdown Structure	I	I	I	C	C			C	R	C	I	I	I	I			
Sprint Planning		I	I	I	I	I	I		R		I	I	I	I			
User Requirements									R		I	I	I		C	C	A
Iteration Routines	I	I	I	I	I			R	R		I	I	I	A	C	C	
Estimate Resources		I	I	C	C	I	I		R	C						C	
Risk Assessment	I	I	I	I	I	I	I	A	R				C				
Detail Communication Methodology	I	A	A	A	A	I	I	R	R	C					I	I	I
Execution Phase Activities																	
Build Deliverables		I	I	I	I	I		A	A	C	R	C	R	I			
Technical and Operational Support		I	I	A	A			C	C	C	R	C	R			A	
Design Software Architecture								C	A	I	R	C	R	I	C	C	
Status Report	I	I	I	I	I	I	I	A	R	A	R	A	R	A			
Control Phase Activities																	
Prototype Testing	I	I	I	I	I	I	I	A	A	C	A	C	A	R			
Quality Check		I	I	I	I			A	A		A		A	R			
Effort and Cost Tracking					C			A	R	R						A	
Perform Change Management	I	I	I	I	I			R	R	C	C		C	I			
Close Phase Activities																	
Evaluate project	R	R	C	C	C	C	C	A	A	A	A	A	A	A	R	R	
Create Project Closure Report	I	I	I	I	I	I	I	R	R	C	C	C	C	C			

Result:

Thus, the Project Plan was documented successfully.



DEPT. Of Computer Science Engineering

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	5
Title of Experiment	Prepare the Work, Breakdown Structure based on timelines, Risk Identification and Plan
Name of the candidate	Shravya Sharan
Team Members	Prachet Balaji, Karthik Menon
Register Number	RA1911026010055
Date of Experiment	08-03-2020

Mark Split Up

Sr. No.	Description	Maximum Mark	Mark Obtained
1	Presentation	5	
2	WBS, Risk Identification and Plan	5	
Total		10	

Staff Signature with date

Aim:

To Prepare the Work, Breakdown Structure based on timelines, Risk Identification and Plan.

Team Members:

Sr. No.	Register No	Name	Role
1	RA1911026010055	Shravya Sharan	Lead
2	RA1911026010054	Karthik Menon	Member
3	RA1911026010053	Prachet Balaji	Member

Requirements:

WBS and Risk Management Plan

Lab Session #5

Table of Contents

1. Executive Summary	4
2. WBS with Project Schedule	5
3. Risk Identification	7
3.1. List (describe) Register	7
3.2. Managing Risk	8

1. Executive Summary

Online voting is often seen as a tool for advancing democracy, building trust in electoral management, adding credibility to election results and increasing the overall efficiency of the electoral process. The Online Voting Management Systems Project is an unprecedented project premised on a collaborative approach that ensures greater citizen input through partnerships within the academic community, public interest organizations, and with policy makers, in the pursuit of establishing a voting systems development model that is collaborative and transparent -- and which is founded on sound data.

This report identifies and discusses the need for systematically producing a complete set of risk specification for Online Voting Management Systems that unifies the requirements imposed by the existing legal framework, the functionality reflected by the conventional voting procedures, and the required security attributes that the system should exhibit.

Constraints and Assumptions are identified at high-level during project initiation. They are refined and documented in detail in project planning. They act as inputs to several forthcoming project management processes. Assumption analysis is a part of the risk management process. The project management plan needs to change if constraints change or assumptions are proven wrong. Constraints and assumptions need to be identified, tracked and effectively controlled during the project life cycle.

Software engineering methodology has been applied for elucidating the standard process for estimation which starts with a high-level project vision finalization. This document is then further transformed into the Work Breakdown Structure. The proposed solution is broken down into smaller modules and features, to make sure that all members are on the same page with the client regarding the scope and functionality of the software product. Every feature within a module is analysed and estimated separately.

Within this, we shall address some of the recurring challenges and concerns that surround this technology and should be taken into account in an implementation strategy. This business charter provides the background and discusses typical features provided by online voting solutions and the various technical options associated with it, and also provides an overview of the strengths and weaknesses of this technology.

2. WBS With Project Schedule

Module	Activity	Subtask	Assignee	Planned Start Date	Planned End Date
E1FR1	E1R1A1- Creating a registration and login module	E1R1A1T1- Creating a registration module	Prachet Balaji (Technical Lead) Karthik Menon (Developer)	10 th July 2021	20 th July 2021
		E1R1A1T2- Creating a login module	Karthik Menon (Developer) Prachet Balaji (Technical Lead)	20 th July 2021	30 th July 2021
		E1R1A1T3- Creating a user database	Sarthak Gupta (Project Manager) Karthik Menon (Developer)	1 st August 2021	20 th August 2021
E2FR1	E2R1A1- Creating a Administrative Module	E2R1A1T1- Creating an administrative module	Prachet Balaji (Technical Lead) Karthik Menon (Developer)	25 th August 2021	31 st August 2021
E3FR1	E3R1A1- Election Officer Module	E3R1A1T1- Creating Election Officer Module	Prachet Balaji (Technical Lead) Karthik Menon (Developer) ECI (User)	1 st September 2021	6 th September 2021
		E3R1A1T2- Giving backdoor access to the election officer	Sarthak Gupta (Project Manager) Karthik Menon (Developer)	6 th September 2021	7 th September 2021
E4FR1	E4R1A1- Voting Conduction Module	E4R1A1T1- Creating a voting conduction module	Prachet Balaji (Technical Lead) Karthik Menon (Developer) Shravya Sharan (Business Analyst)	8 th September 2021	15 th September 2021
E5FR1	E5R1A1- Election Conduction Module	E5R1A1T1- Creating an election conduction module	Prachet Balaji (Technical Lead) Karthik Menon (Developer)	15 th September 2021	23 rd September 2021
		E5R1A1T2- Testing to see accuracy	Arpita Muleva (Tester) Users	24 th September 2021	25 th September 2021
E6FR1	E6R1A1- Reports Module	E6R1A1T1- Creating a detailed report of the software for further development	Arpita Muleva (Tester) Sarthak Gupta (Project Manager) Prachet Balaji (Technical Lead) Shravya Sharan (Business Analyst)	26 th September 2021	29 th September 2021

E7FR1	E7R1A1-Creating an efficient system	E7R1A1T1-Short response time	Prachet Balaji (Technical Lead) Karthik Menon (Developer)	1 st October 2021	3 rd October 2021
		E7R1A1T2- Capability of recovering from system crashes and continuing the voting process	Prachet Balaji (Technical Lead) Karthik Menon (Developer)	4 th October 2021	7 th October 2021
E8FR1	E7R1A2-Making a flexible system	E7R1A2T1- The user interface should be customizable to suit user needs	Arpita Muleva (Tester) ECI (User)	3 rd October 2021	4 th October 2021
		E7R1A2T2-Features for addition or subtraction of data	Prachet Balaji (Technical Lead) Karthik Menon (Developer)	8 th October 2021	11 th October 2021
E9FR1	E7R1A3- Making a reliable software	E7R1A3T1- System should impose a successful strategy to avoid multi-voting	Arpita Muleva (Tester) Karthik Menon (Developer)	4 th October 2021	8 th October 2021
		E7R1A3T3- Application should accurately count the number of votes and display result	Prachet Balaji (Technical lead) Karthik Menon (Developer)	12 th October 2021	12 th October 2021
E10FR1	E7R1A4-Security Development	E7R1A4T1- Availability of password authentication and encrypted transactions	Prachet Balaji (Technical lead) Karthik Menon (Developer)	14 th October 2021	20 th October 2021
		E7R1A4T2- The system should possess strategies to counter attempts of hacking or unauthorized access	Prachet Balaji (Technical Lead) Karthik Menon (Developer)	17 th October 2021	24 th October 2021
		E7R1A4T3- Access to administrator to shut down the server and close all communication immediately in case of any security lapse	Prachet Balaji (Technical) Karthik Menon (Developer)	20 th October 2021	24 th October 2021
		E7R1A4T4- Passwords generated and communicated to the users to be stored in servers in encrypted form	Prachet Balaji (Technical Lead) Karthik Menon (Developer)	25 th October 2021	27 th October 2021
		E7R1A4T5- System should possess strategy to counter DDoS attack	Prachet Balaji (Technical Lead) Karthik Menon (Developer)	28 th October 2021	3 rd November 2021

3. Risk Identification

1. Risk identification is an integral process that is executed in a structured, hierarchical manner within the organization to ensure integrity of data flow and keep the employee and users up-to-date with the current framework of the software.
2. The risk identification occurs using assumption and constraint analysis.
3. Assumptions: -
 - a. Complete support and cooperation from the government in terms of sharing eligible voters' data.
 - b. Availability of genuine and updated data with maximum accuracy.
 - c. User possess requisite skillset to run the software.
 - d. Availability of basic network connections within a small radius.
4. Constraints: -
 - a. Financial – Dynamic Budget
 - b. Regulatory – Change in Government policies
 - c. Manpower – Specific skillset requirement.
 - d. Security – Protection of user and voters' data.
 - e. Demographic – Diverse population.
5. Based on the assumptions and constraints, the risks are identified and classified. The risks and their impact are discussed in the given section below.

3.1. List (Describe) Register

Risk ID (#)	Risk Description	Impact Description
R01L	Privacy of the voters' identity during the voting process.	The voting procedure will be compromised leading to rise in legal issues due to violation of primary rule of voting.
R02S	Protection of users' data.	Any leakage of data or data breach will compromise the system and create opportunities for malpractice during the voting process.
R03C	Change in voting rules and policies	The system would have to revamp itself to match up with the current policies which will cause additional expense and drop in market.
R04Op	Glitch in software system	This will cause hindrance to the users and the process, resulting in poor experience for the user.
R05F	Floating loan interest rates	The software requires a dynamic budget and fluctuations in interest rate will cause the budget allocation to increase.
R06T	Unavailability of requisite technical conditions	The software execution will be halted and its reach will be limited.

3.2. Managing Risk

Risk ID (#)	Status [Open/Closed]	Risk Appetite [Accept/Mitigate/Transfer/Avoid]	Action	Action Owner	Target Date
R01L	Open	Mitigate	<ul style="list-style-type: none"> 1. Introduction of biometrics. 2. Setup of Aadhar Verification and OTP. 3. Transfer of data in encrypted format. 	Developer (Security)	1-6 months
R02S	Open	Mitigate	<ul style="list-style-type: none"> 1. Cloudflare DDoS Server security setup. 2. Multiple backup servers. 3. Firewall setup. 	Developer (Security)	1-6 months
R03C	Closed	Accept	<ul style="list-style-type: none"> 1. Update the user interface. 2. Update the system processes to suit the new policies. 	Developer	TBA
R04Op	Open	Mitigate	<ul style="list-style-type: none"> 1. Rectification of the system error 	IT Department	1-2 days
R05F	Closed	Transfer	<ul style="list-style-type: none"> 1. Re-allotment of budget. 2. Updating investors and creditors. 	Finance Department	1 week
R06T	Open	Accept	<ul style="list-style-type: none"> 1. Set-up of centres within close proximity of the area. 	Operations Management	2 months

Result:

Thus, the WBS and Risk Plan was documented successfully.



DEPT. Of Computer Science Engineering

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 Case Diagram, ER Diagram (Database), DFD Diagram (process) (Up to Level 1), Class Diagram (Applied for OOPS based Project), Sequence Diagram (Applied for OOPS based Project) (Software – Rational Rose)
Name of the candidate	Shravya Sharan
Team Members	Prachet Balaji, Karthik Menon
Register Number	RA1911026010055
Date of Experiment	15-03-2021

Mark Split Up

Sr. No	Description	Maximum Mark	Mark Obtained
1	System Architecture with Presentation	5	
2	Use Case Diagram ER Diagram (Database), DFD Diagram (process) Class Diagram (Applied for OOPS based Project), Sequence Diagram (Applied for OOPS based Project)	5	
	Total	10	

Staff Signature with date

Aim:

To prepare architecture and design of the system.

Team Members:

Sr No	Register No	Name	Role
1	RA1911026010055	Shravya Sharan	Lead
2	RA1911026010054	Karthik Menon	Member
3	RA1911026010053	Prachet Balaji	Member

Software Used:

Star UML, Creatly

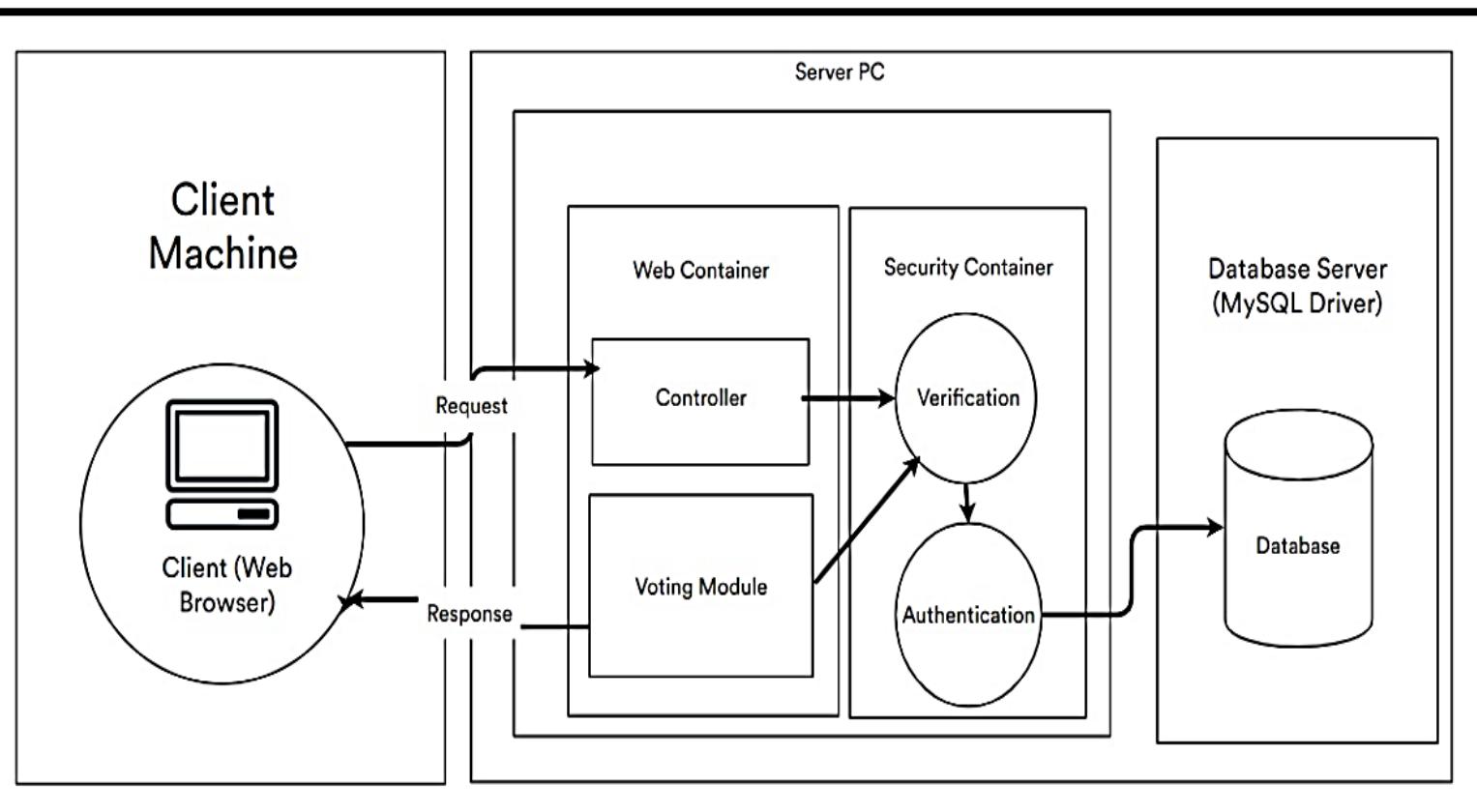
Architecture and Design of the System

Lab Session #6

1. Architecture Diagram

An architectural diagram is a diagram of a system that is used to abstract the overall outline of the software system. The given diagram is a basic representation of the system.

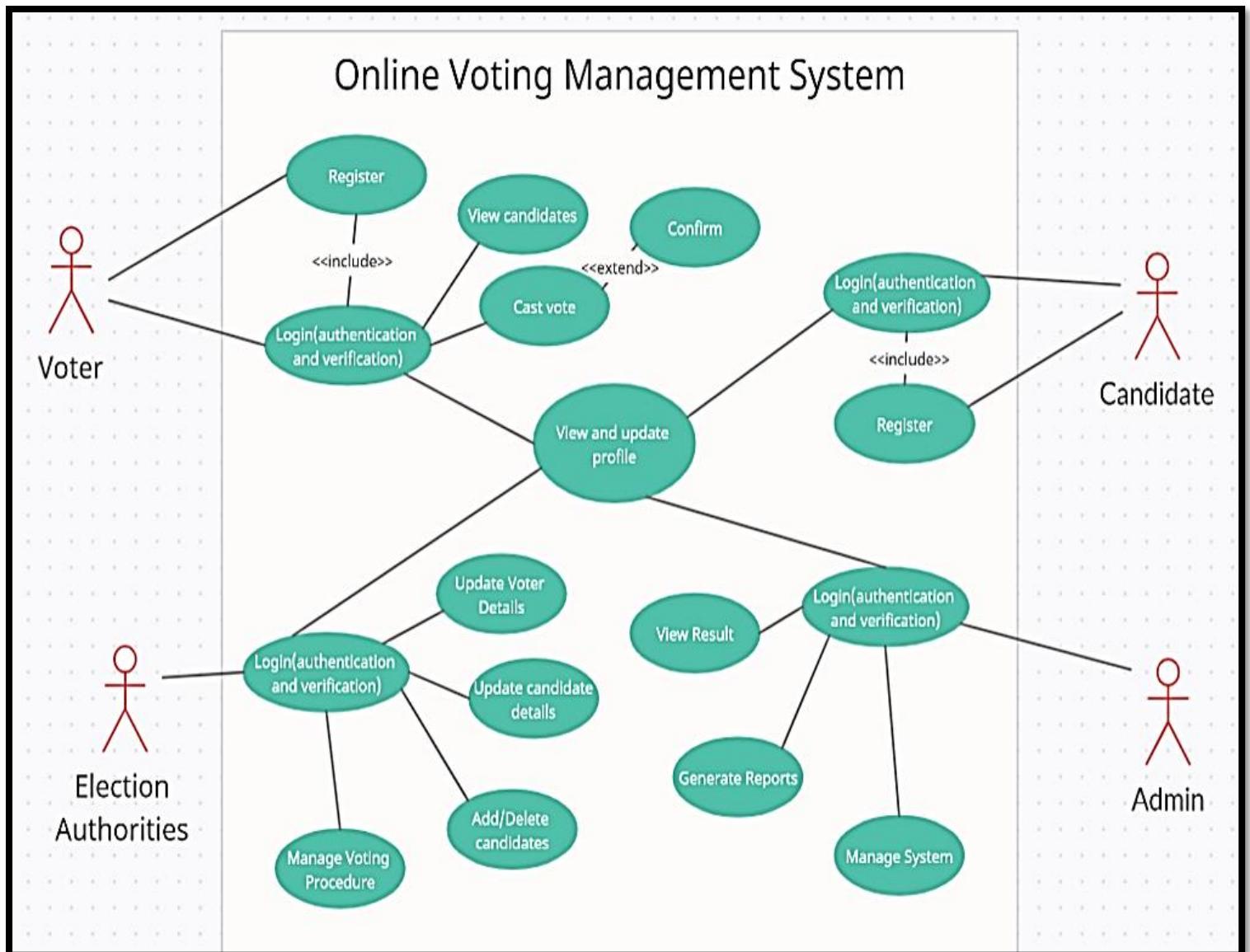
1. The client machine interacts with the user and based on their role allocates system functionalities to them. The user can access the system after successful registration and login.
2. The server PC contains web container, security container and database server which are key aspect of the online voting management system.
3. The web container holds processing data for user functionalities and is responsible for executing the processes involved within the system.
4. The security container prevents unauthorised access of database and only allows execution of process after successful authentication and verification.
5. The controller has access to the back-end functions and can modify system database after successful authentication.
6. The voting module incorporates all processes involved in the voting process and access the database for exchange of information.
7. The database stores all the requisite data.



2. Use Case Diagram

The Use Case Diagram is a graphic depiction of the interaction among the elements of Online Voting Management System. It represents the methodology used in system analysis to identify and organize system requirements of Online Voting Management System. In the use case diagram, the modules are represented as actions.

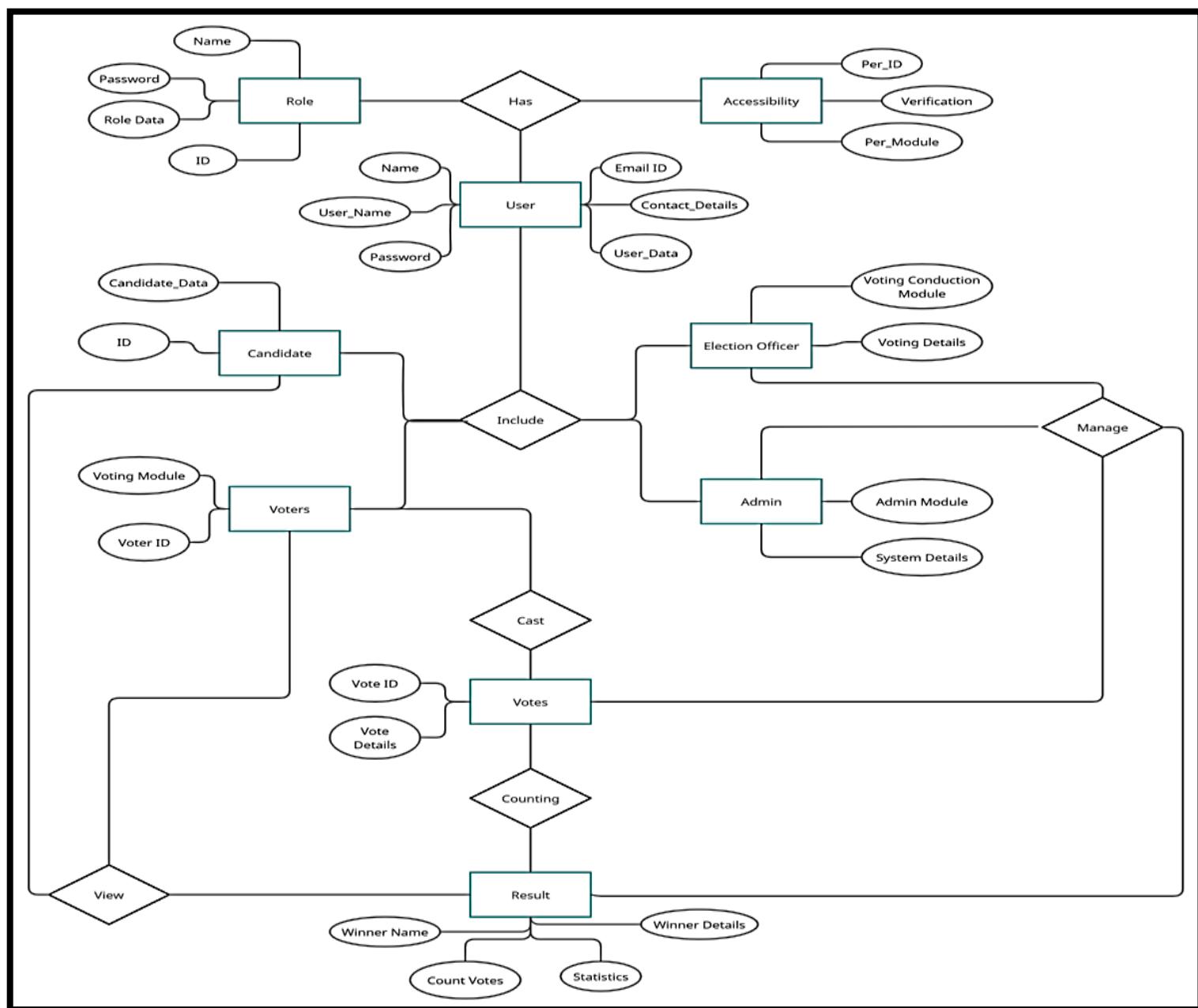
1. The Voter can cast their vote for the desired candidate after successful registration and login. Their vote is accepted if they pass the verification process.
2. The Candidate can contest for elections after successful login and registration. They can view and update their profile upon verification.
3. The Election Authorities can add and update voter and candidate details and manage the entire voting process including duration and mode of voting.
4. The Admin is mainly concerned with the system and can view its functionalities.



3. ER Diagram

An entity relationship diagram (ERD) shows the relationships of entity sets stored in a database. An entity in this context is a component of data.

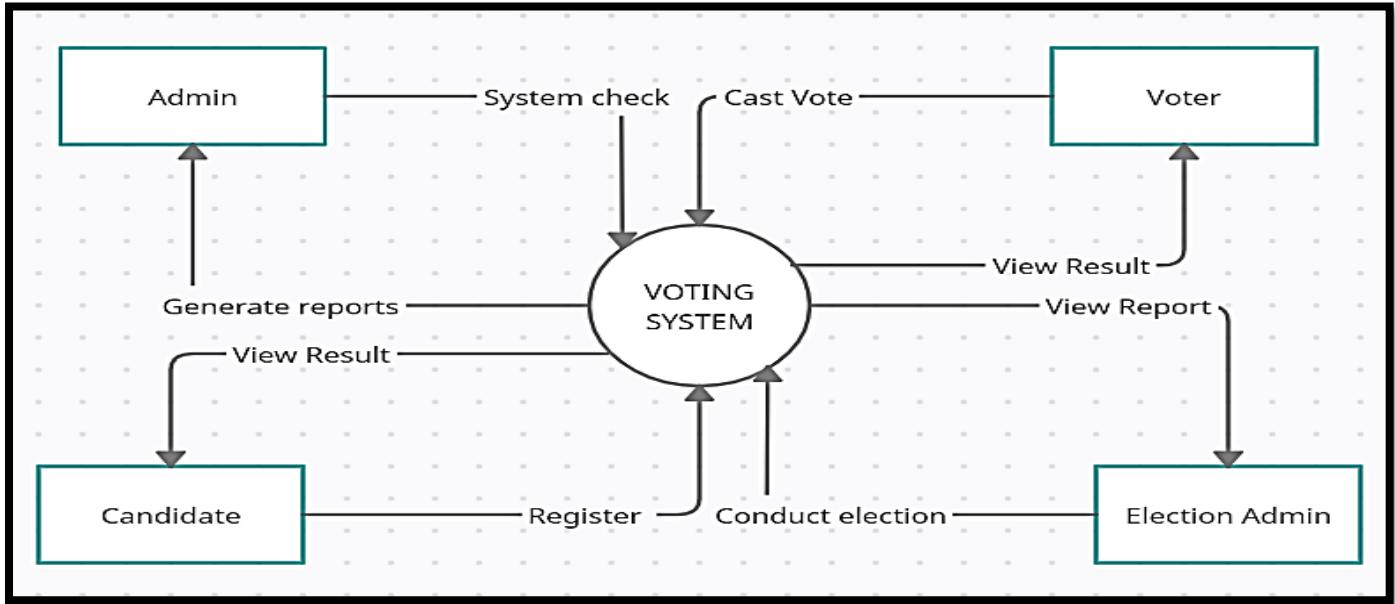
1. The User database is comprised of role and accessibility based on which the user can access the system.
2. The User database is further split into Candidate, Voters, Election Officer and Admin and each have their own data and functionalities.
3. The Votes database manages the voting process and stores the votes cast by voters and can be managed by Election Officer and Admin.
4. The Result database computes the result and displays the result along with reports and statistics.



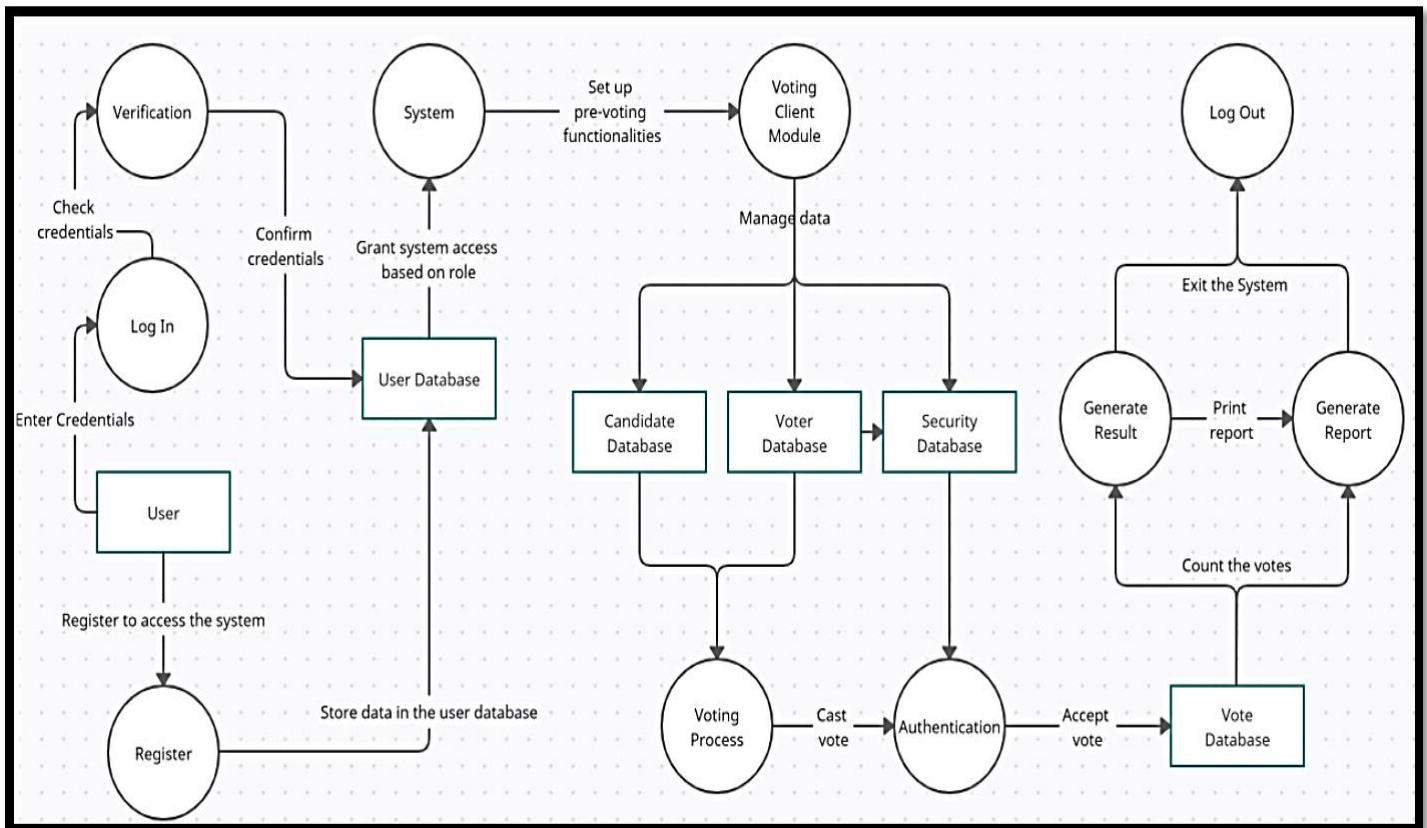
4. Data Flow Diagram

Data flow shows how the system is divided into sub-systems, each of which deals with one or more of the data flows to or from an external agent, and which together provide all of the functionality of the Online Voting Management System as a whole.

4.1. DFD Level 0



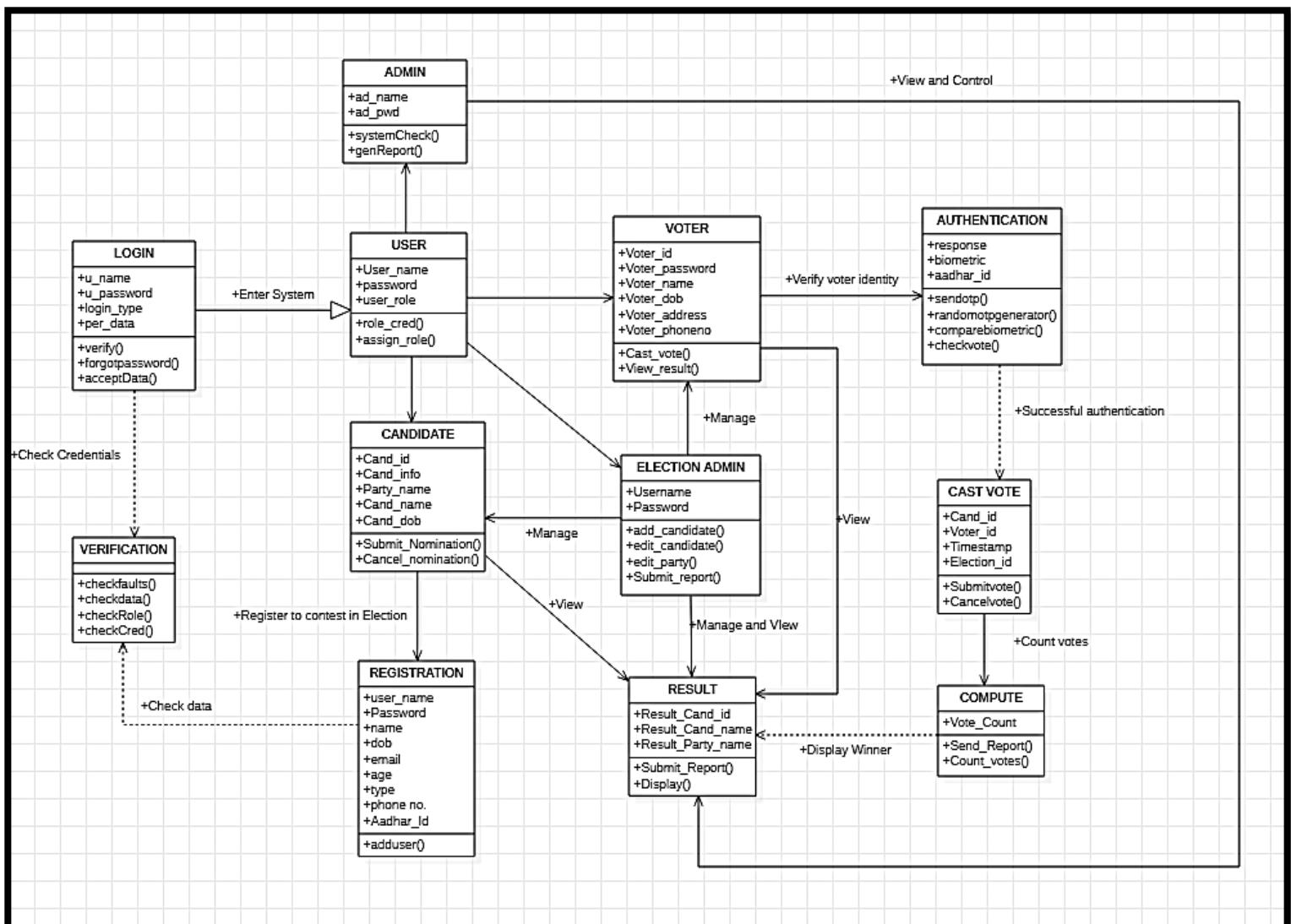
4.2. DFD Level 1



5. Class Diagram

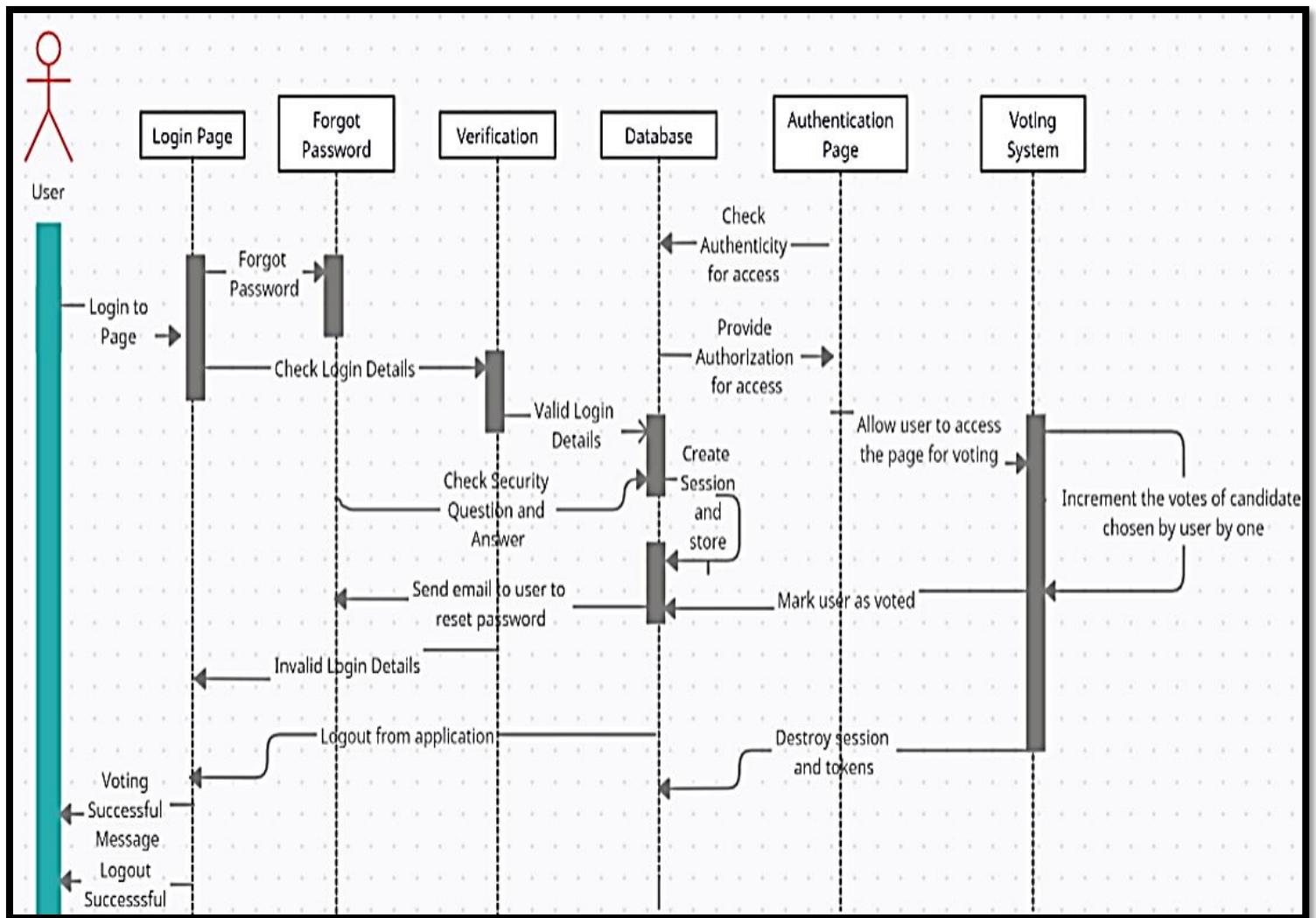
In software engineering, a class diagram in the Unified Modelling Language is a type of static structure diagram that describes the structure of a system by showing the system's classes, their attributes, operations, and the relationships among objects.

1. The Login Class allows user to login to the system after entering correct credentials.
2. The Verification Class verifies all data being entered into the system.
3. The User Class assigns role and directs user based on their role.
4. The Admin, Election Admin, Voter and Candidate Classes consist requisite data associated with the user and the operations they perform in the system.
5. The Registration Class allows Candidates to register for election.
6. The Authentication Class checks the voter identity using biometrics and approves them for voting.
7. The Cast Vote, Compute and Result Class collect, count and display the votes received and declare the winner.



6. Sequence Diagram

A sequence diagram simply depicts interaction between objects in a sequential order i.e. the order in which these interactions take place. The User enters their credentials which are checked with the database. If the credentials match, the user can enter the system and is directed to the voting process where their authenticity is checked. If the User is successfully authenticated, then they can process to casting their vote. The user is marked as voted within the database to prevent multi-voting and the candidate receiving the vote is incremented. Once the user has voted they can exit the voting system and log out.



Result:

Thus, architecture and design of the system was documented successfully.



DEPT. Of Computer Science Engineering

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	7
Title of Experiment	Design State, Collaboration, Deployment Diagram, Sample Frontend Design (UI/UX)
Name of the candidate	Shravya Sharan
Team Members	Prachet Balaji, Karthik Menon
Register Number	RA1911026010055
Date of Experiment	22-03-2021

Mark Split Up

Sr. No	Description	Maximum Mark	Mark Obtained
1	State, Collaboration diagrams	5	
2	Deployment Diagram, Sample Frontend Design (UI/UX)	5	
Total		10	

Staff Signature with date

Aim:

To design State, Collaboration, Deployment Diagram, Sample Frontend Design (UI/UX) for the project.

Team Members:

Sr No	Register No	Name	Role
1	RA1911026010055	Shravya Sharan	Lead
2	RA1911026010054	Karthik Menon	Member
3	RA1911026010053	Prachet Balaji	Member

Software Used:

Star UML, Thunkable

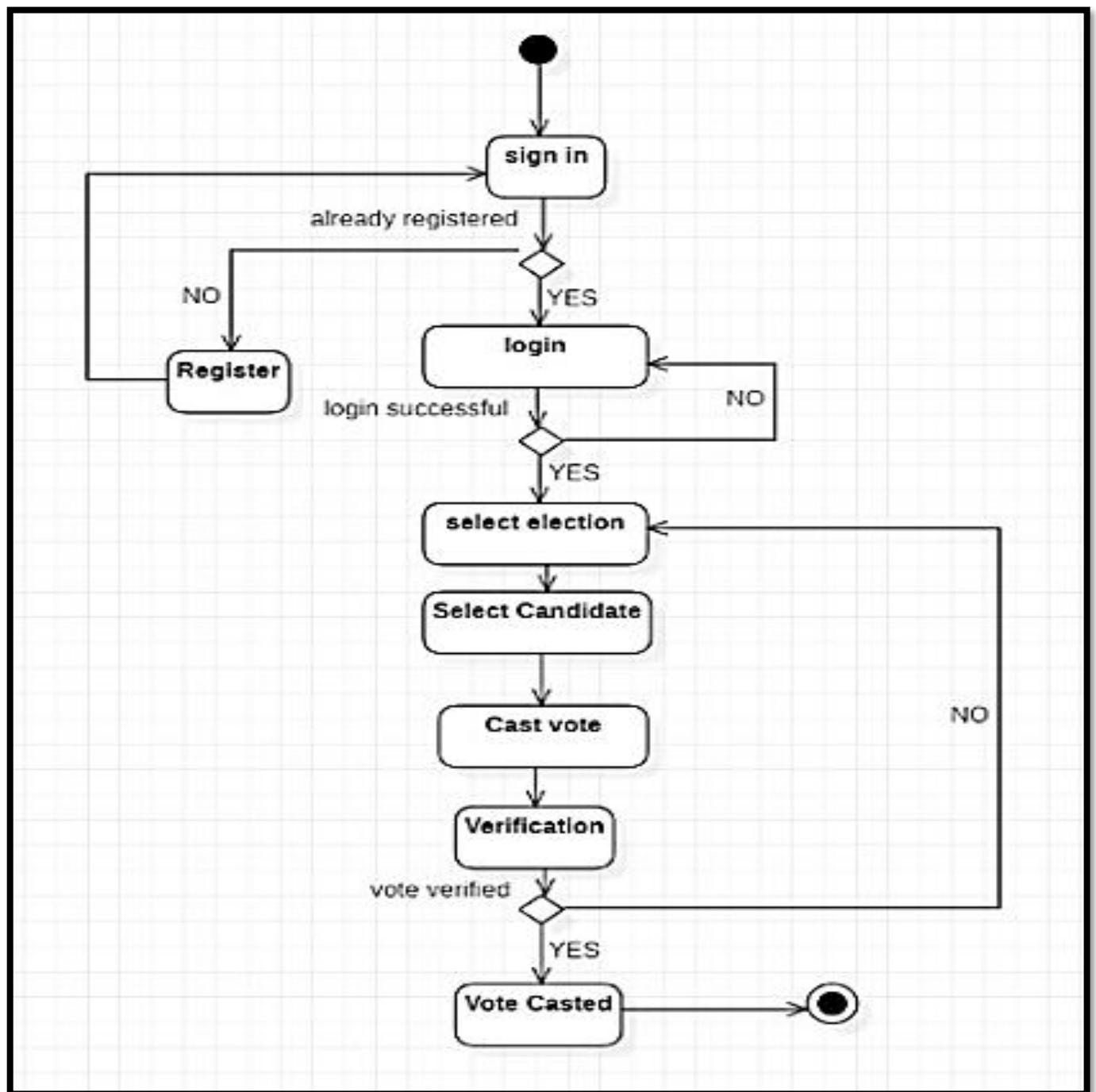
*Design State,
Collaboration,
Deployment Diagram
and Sample Frontend
Design*

Lab Session #7

1. State Diagram

State chart diagram is used to model the dynamic nature of a system. They define different states of an object during its lifetime and these states are changed by events. State chart diagram describes the flow of control from one state to another state.

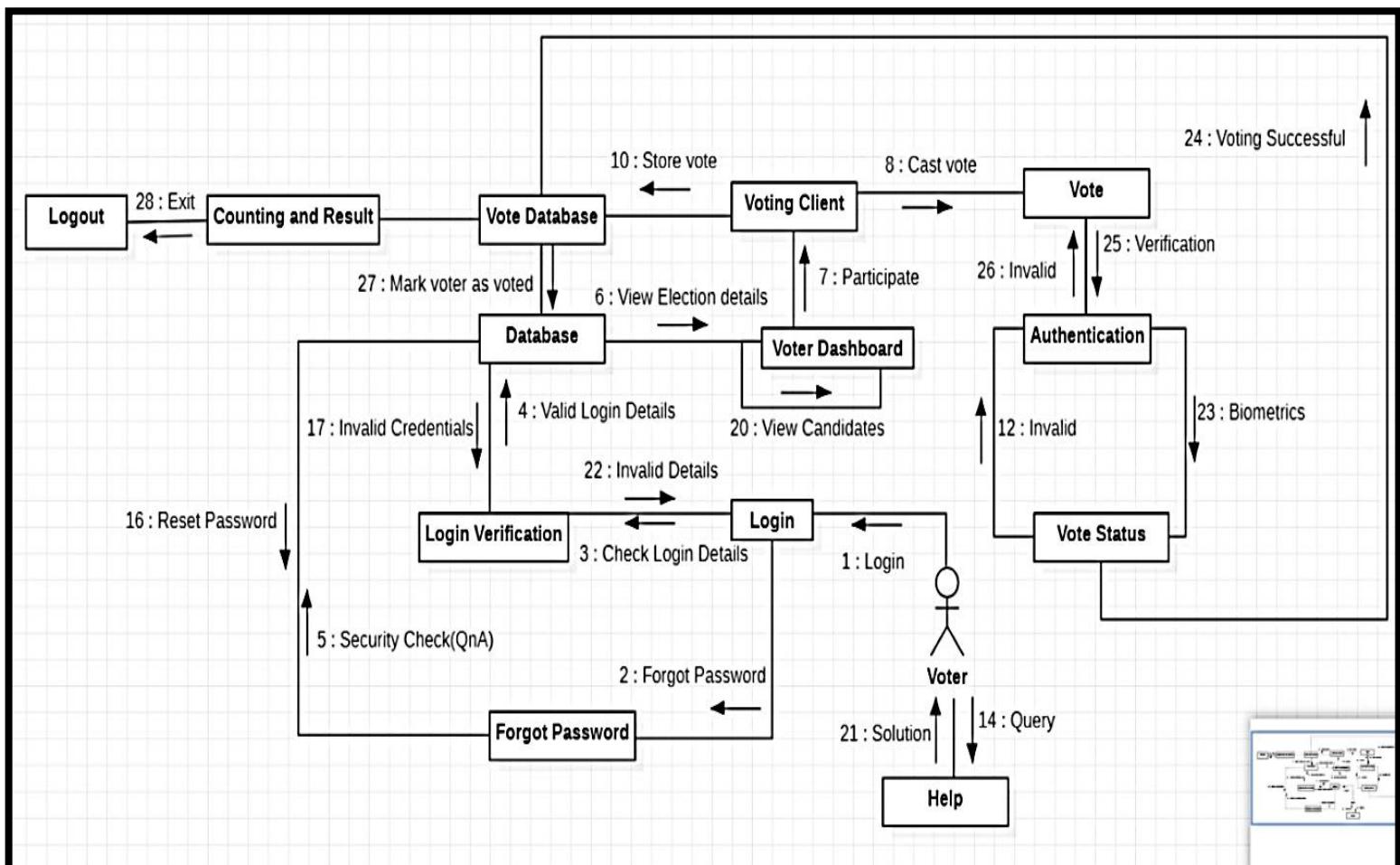
1. The user can access the system via sign in where they enter their credentials to login. In case they haven't registered, they can complete the registration process to generate credentials.
2. The voter selects the election they want to participate in and cast their vote for the desired candidate.
3. If their identity and vote casted is verified then they can exit the system else they are redirected to election module.



2. Collaboration Diagram

The collaboration diagram, also known as a communication diagram, is an illustration of the relationships and interactions among software objects in the Unified Modelling Language (UML). These diagrams can be used to portray the dynamic behaviour of a particular use case and define the role of each object.

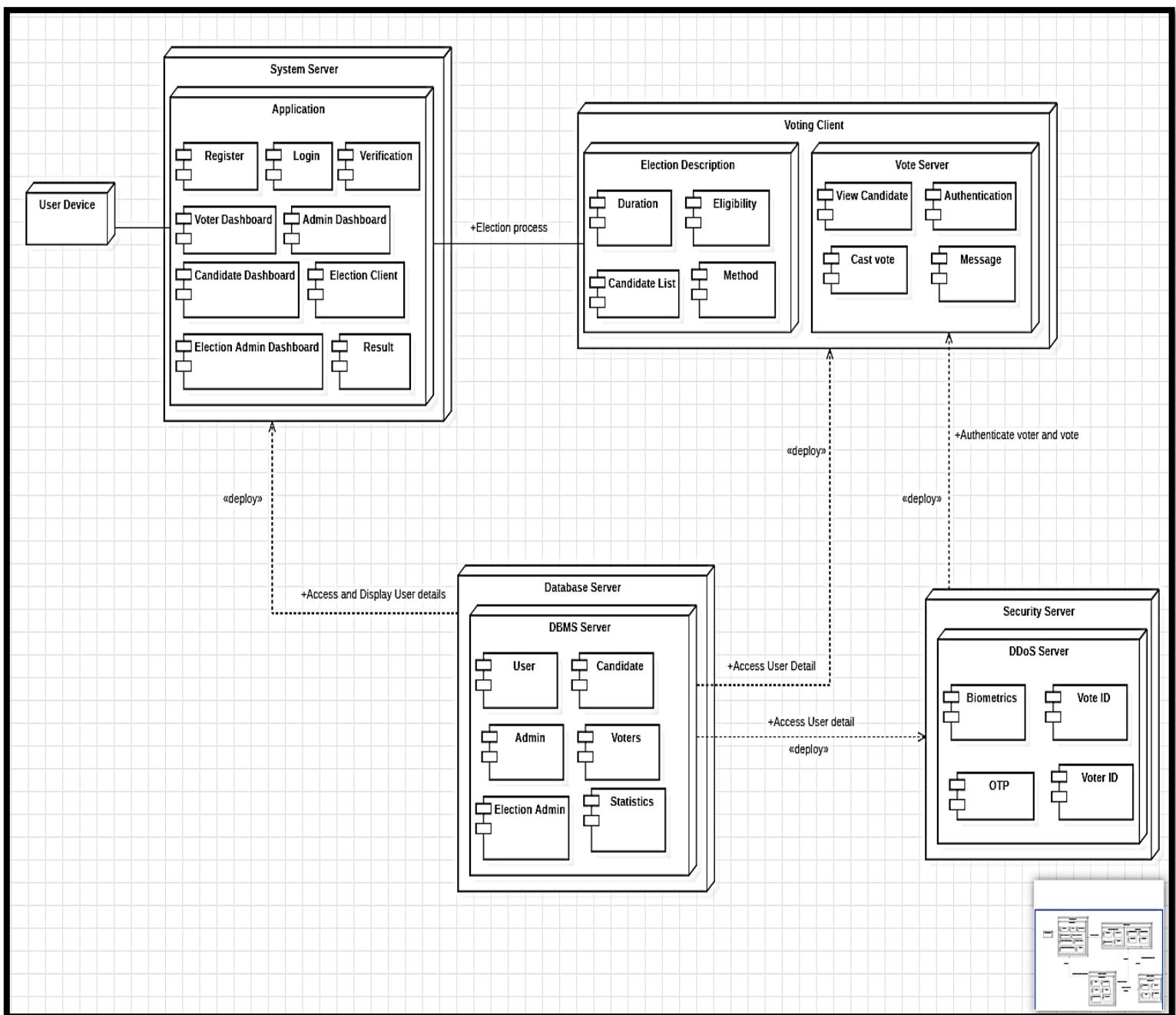
1. The Voter enters their credentials to access the system. The entered credentials are verified with the database and if they are valid then the voter is directed to the dashboard.
2. The Voter has option of forgot password in case they are unable to recall their credentials, after which they are directed to answer pre-determined security questions to generate new credentials.
3. Within voting dashboard, the voter can view election details and candidates and based on this choose which voting process to participate in.
4. The voting client displays the candidates and allows voter to cast their vote. The voter and their vote are authenticated using security measures and if successful the vote is stored in the database and the voter is marked as voted while the candidate receives the vote.
5. The stored votes are tallied and result is displayed. The voter can logout from the system.



3. Deployment Diagram

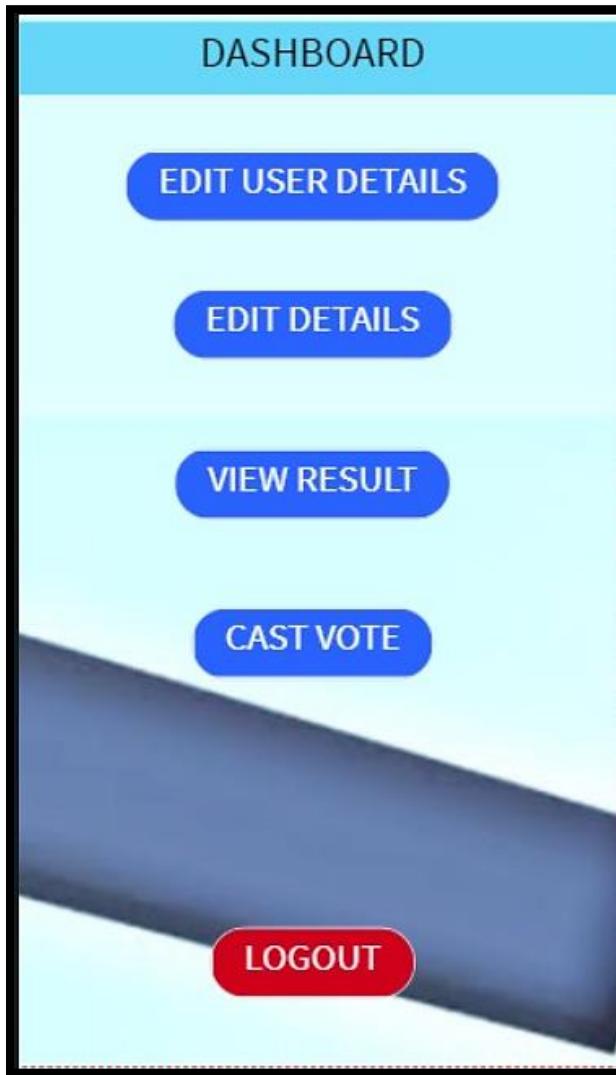
A UML deployment diagram is a diagram that shows the configuration of run time processing nodes and the components that live on them. Deployment diagrams is a kind of structure diagram used in modelling the physical aspects of an object-oriented system. They are often be used to model the static deployment view of a system (topology of the hardware).

1. The User device access the system server and can register, login, view their dashboard based on their role and view result.
2. The voting client executes the voting process by accepting data from database and verifying vote and voter identity using security server.



4. Sample Frontend Design





Result:

Thus, above mentioned designs of the system were documented successfully.



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DEPT. Of Computer Science Engineering

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	8
Title of Experiment	Module Description, Module Implementation
Name of the candidate	Shravya Sharan
Team Members	Prachet Balaji, Karthik Menon
Register Number	RA1911026010055
Date of Experiment	29-03-2021

Mark Split Up

Sr. No	Description	Maximum Mark	Mark Obtained
1	Implementation of Module 1	5	
2	Output	5	
Total		10	

Staff Signature with date

Aim:

To describe modules and implement Module 1.

Team Members:

Sr No	Register No	Name	Role
1	RA1911026010055	Shravya Sharan	Lead
2	RA1911026010054	Karthik Menon	Member
3	RA1911026010053	Prachet Balaji	Member

Software Used:

Pyhton, php, MySQL

Software Description and Implementation- Module 1

Lab Session #8

1. Code of Module 1

1.1. Registration

```
<?php include('server.php');?>
<!DOCTYPE html>
<html>
<head>
    <title>ONLINE VOTING SYSTEM</title>
    <link rel="stylesheet" type="text/css" href="style.css">
</head>
<body>
<div class="header">
    <h2>Register</h2>
</div>
<form method="post" action="reg.php">
    <!--display val errors -->
    <?php include('errors.php'); ?>
    <div class ="input-group">
        <label>Username</label>
        <input type="text" name="username">
    </div>
    <div class ="input-group">
        <label>Email</label>
        <input type="email" name="email">
    </div>
    <div class ="input-group">
        <label>Aadhar number</label>
        <input type="text" name="aadhar">
    </div>
    <div class ="input-group">
        <label>Password</label>
        <input type="password" name="password_1">
    </div>
    <div class ="input-group">
        <label>Confirm Password</label>
        <input type="password" name="password_2">
    </div>
    <div class ="input-group">
        <button type="submit" name="register" class="btn">Register</button>
    </div>
    <p>
        Already a member ? <a href="login.php">Sign in</a>
    </p>
</form>
</body>
</html>
```

1.2. Server

```
<?php
session_start();
$username="";
$email="";
$errors=array();
$db =mysqli_connect("localhost","root","","registration");
if(isset($_POST['register'])){
    $username= mysqli_real_escape_string($db,$_POST['username']);
    $email= mysqli_real_escape_string($db,$_POST['email']);
    $aadhar= mysqli_real_escape_string($db,$_POST['aadhar']);
    $password_1= mysqli_real_escape_string($db,$_POST['password_1']);
    $password_2= mysqli_real_escape_string($db, $_POST['password_2']);
    if(empty($username)) {
        array_push($errors, "Username is required");
    }
    if(empty($email)) {
        array_push($errors,"Email is required");
    }
    if(empty($aadhar)) {
        array_push($errors, "Aadhar Card number is required");
    }
    if(empty($password_1)) {
        array_push($errors, "Password is required");
    }
    #if(empty($password_1 != $password_2)) {
    #    array_push($errors, "Two Passwords do not match");
    #}
    if(count($errors)==0){
        $password=md5($password_1); //for security
        $sql ="INSERT INTO users(username,email,password)
VALUES ('$username','$email','$aadhar','#password')";
        mysqli_query($db,$sql);
        $_SESSION['username'] = $username;
        $_SESSION['success'] = "You are now logged in";
        header('location: index.php');
    }

    //log user in
    if (isset($_POST['login'])) {
        $username= mysqli_real_escape_string($db,$_POST['username']);

        $password= mysqli_real_escape_string($db, $_POST['password_1']);
        if(empty($username)) {
            array_push($errors, "Username is required");
        }
        if(empty($password)) {
            array_push($errors,"Password is required");
        }
    }
}
```

```

        }
        if(count($errors)==0) {
            $password=md5($password);
            $query ="SELECT * FROM users WHERE username ='$username' AND
password='$password'";
            $result=mysqli_query($db,$query);

            if (mysqli_num_rows($result)) {
                //log user in.
                $_SESSION['username'] = $username;
                $_SESSION['success'] = "You are now logged in";
                header('location: index.php');
            }else {
                array_push($errors, "Wrong username/password combination");
            }
        }

        //}
    }

//logout
if (isset($_GET['logout'])){
    session_destroy();
    unset($_SESSION['username']);
    header('location: login.php');
}
}

?>

```

1.3. Style

```

* {
    margin: 0px;
    padding: 0px;
}
body {
    font-size:120%;
    background: #F8F8FF;
}
.header {
    width:30%
    margin:50px auto 0px;
    color:white;
    background: #5F9EA0;
    text-align: center;
    border: 1px solid #B0C4DE;
    border-bottom: none;
    border-radius: 10px 10px 0px 0px;
    padding: 20px;
}

```

```

form , .content {
    width: 30%;
    margin: 0px auto;
    padding: 20px;
    border: 1px solid #B0C4DE;
    background: white;
    border-radius: 0px 0px 10px 10px;
}
.input-group{
    margin:10px 0px 10px 0px;
}
.input-group label {
    display: block;
    text-align: center;
    margin:3px;
}
.input-group input {
    height:30px;
    width:93%;
    padding: 5px 10px;
    font-size: 16px;
    border-radius: 5px;
    border: 1px solid grey;
}
.btn {
    padding: 10px;
    font-size: 15px;
    color: white;
    background: #5F9EA0;
    border: none;
    border-radius: 5px;
}

.error {
    width: 92%;
    margin: 0px auto;
    padding: 10px;
    border: 1px solid #a94442;
    color: #a94442;
    background: #f2dede;
    border-radius: 5px;
    text-align:left;
}
.success {
    color : #3c763d;
    background: #dff0d8;
    border: 1px solid #3c763d;
    margin-bottom : 20px;
}

```

1.4. Errors

```
<?php if (count($errors)>0): ?>
    <div class="error">
        <?php foreach ($errors as $error): ?>
            <p><?php echo $error?></p>
        <?php endforeach ?>
    </div>
<?php endif ?>
```

1.5. Index

```
<?php include('server.php');
if(empty($_SESSION['username'])) {
    header("location:login.php");
}

?>
<!DOCTYPE html>
<html>
<head>
    <title>User registration using php</title>
    <link rel="stylesheet" type="text/css" href="style.css">
</head>
<body>
<div class="header">
    <h2>DASHBOARD</h2>
</div>
<div class = "content">
    <?php if (isset($_SESSION['success'])): ?>
    <div class="success">
        <h3>
            <?php
                echo $_SESSION['success'];
                unset($_SESSION['success']);
            ?>
        </h3>
    </div>

    <?php endif ?>
    <?php if (isset($_SESSION['username'])): ?>
        <h3>Welcome <strong><?php echo $_SESSION['username']; ?></strong></h3>
        <button><a href="login.php?logout='1'" style="color:red;">Logout</a></button>
    <?php endif ; ?>
</div>
</body>
</html>
```

1.6. Login

```
<?php include('server.php'); ?>
<!DOCTYPE html>
<html>
<head>
    <title>User registration using php</title>
    <link rel="stylesheet" type="text/css" href="style.css">
</head>
<body>
<div class="header">
    <h2>Login</h2>
</div>
<form method="post" action="login.php">
    <!--display val errors -->
    <?php include('errors.php'); ?>
    <div class ="input-group">
        <label>Username</label>
        <input type="text" name="username">
    </div>

    <div class ="input-group">
        <label>Password</label>
        <input type="password" name="password_1">
    </div>

    <div class ="input-group">
        <button type="submit" name="login" class="btn">Login</button>
    </div>
    <p>
        Not a member ? <a href="reg.php">Sign up</a>
    </p>
</form>

</body>
</html>
```

2. Result of Module 1

Register

Username

Email

Aadhar number

Password

Confirm Password

Register

Already a member ? [Sign in](#)

Register

Username is required
Email is required
Aadhar Card number is required
Password is required

Username

Prakart

Email

Aadhar number

Password

.....

Confirm Password

Register

Already a member ? [Sign in](#)

Login

Username

Password

Login

Not a member ? [Sign up](#)

phpMyAdmin

Server: 127.0.0.1 > Database: registration > Table: users

Browse Structure SQL Search Insert Export Import Privileges Operations Tracking Triggers

Table structure Relation view

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	UserName	varchar(200)	utf8mb4_general_ci		No	None			Change Drop More
2	Email	varchar(200)	utf8mb4_general_ci		No	None			Change Drop More
3	Aadhar Card	int(12)			No	None			Change Drop More
4	Pass1	varchar(20)	utf8mb4_general_ci		No	None			Change Drop More

New Information_schema mysql performance_schema phpmyadmin registration New users test

Add to central columns Remove from central columns

Print Propose table structure Track table Move columns Normalize

Add 1 column(s) after Pass1 Go

Indexes

Action	Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
Edit Rename Drop	PRIMARY	BTREE	Yes	No	UserName	0	A	No	

Create an index on 1 columns Go

Partitions

Result:

Thus, modules are described, Module 1 was implemented and documented successfully.



DEPT. Of Computer Science Engineering

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	9
Title of Experiment	Module 2 Implementation
Name of the candidate	Shravya Sharan
Team Members	Prachet Balaji, Karthik Menon
Register Number	RA1911026010055
Date of Experiment	07-04-2021

Mark Split Up

Sr. No	Description	Maximum Mark	Mark Obtained
1	Module 2	5	
2	Output	5	
Total		10	

Staff Signature with date

Aim:

To implement Module 2 of the project and display the output of the module with new requirements may assimilate.

Team Members:

Sr No	Register No	Name	Role
1	RA1911026010055	Shravya Sharan	Lead
2	RA1911026010054	Karthik Menon	Member
3	RA1911026010053	Prachet Balaji	Member

Software Used:

Python, php, MySQL

Software Description and Implementation- Module 2

Lab Session #9

1. Code of Module 2

1.1. Registration

```
<?php include('server.php'); ?>
<!DOCTYPE html>
<html>
<head>
    <meta charset="utf-8">

    <title>Register</title>
    <link rel="stylesheet" type="text/css" href="style.css">
</head>
<body>
    <form class="box" action="RegV.php" method="post">
        <?php include('errors.php'); ?>
        <h1>Register</h1>
        <input type="text" name="user" placeholder="Username">
        <input type="text" name="email" placeholder="Email">
        <input type="text" name="phone" placeholder="Phone Number">
        <input type="text" name="aadhar" placeholder="Aadhar Number">
        <input type="password" name="pass1" placeholder="Password">
        <input type="password" name="pass2" placeholder="Confirm Password">
        <input type="submit" name="register" value="Register">

        <p style="color:white">
            Already a member ? <a href="LoginV.php" type="submit">Sign in</a>
        </p>
    </form>

</body>
</html>
```

1.2. Server

```
<?php
    session_start();

    #$username="";
    #$email="";
    #$aadhar="";
    $errors=array();
    $db =mysqli_connect("localhost","root","","ovs");
    mysqli_select_db($db,'ovs');
    if(isset($_POST['register'])){
        $username= $_POST['user'];
        $email= $_POST['email'];
```

```

$pnum= $_POST['phone'];
$aadhar= $_POST['aadhar'];
$password_1= $_POST['pass1'];
$password_2= mysqli_real_escape_string($db, $_POST['pass2']);
if(empty($username)) {
    array_push($errors, "Username is required");

}
if(empty($email)) {
    array_push($errors,"Email is required");
}
if(empty($pnum)) {
    array_push($errors,"Phone number is required");
}
if(empty($aadhar)) {
    array_push($errors, "Aadhar Card number is required");
}
if(empty($password_1)) {
    array_push($errors, "Password is required");
}
if($password_1 != $password_2 ) {
    array_push($errors, "Two Passwords do not match");
}
if(count($errors)==0){
    $password=md5($password_1); //for security
    $sql ="INSERT INTO user(name,email,phone,aadhar,pass)
VALUES ('$username','$email','$pnum','$aadhar','$password_1')";
    mysqli_query($db,$sql);
    $_SESSION['user'] = $username;
    $_SESSION['success'] = "You are now logged in";
    header('location: index.php');
}

//log user in
if (isset($_POST['login'])) {
    $username= mysqli_real_escape_string($db,$_POST['user']);

    $password=mysqli_real_escape_string($db,$_POST['pass']);
    if(empty($username)) {
        array_push($errors, "Username is required");

    }
    if(empty($password1)) {
        array_push($errors,"Password is required");
    }
    if(count($errors==0)) {
        $password=md5($password1);
        $query=
        $query ="SELECT * FROM user WHERE username ='$username' AND
password='$password'";

```

```

$result=mysqli_query($db,$query);

if (mysqli_num_rows($result)) {
    //log user in.
    $_SESSION['user'] = $username;
    $_SESSION['success'] = "You are now logged in";
    header('location: index.php');
} else {
    array_push($errors, "Wrong username/password combination");
}

}

}

//logout
if (isset($_GET['logout'])){
    session_destroy();
    unset($_SESSION['username']);
    header('location: LoginV.php');
}
}

?>

```

1.3. Style

```

body{
margin: 0;
padding: 0;
font-family: sans-serif;
background: #34495e;
}
.box{
width: 300px;
padding: 40px;
position: absolute;
top: 50%;
left: 50%;
transform: translate(-50%,-50%);
background: #191919;
text-align: center;
}
.box h1{
color: white;
text-transform: uppercase;
font-weight: 500;
}
.box input[type = "text"],.box input[type = "password"]{

```

```

border:0;
background: none;
display: block;
margin: 20px auto;
text-align: center;
border: 2px solid #3498db;
padding: 14px 10px;
width: 200px;
outline: none;
color: white;
border-radius: 24px;
transition: 0.25s;
}
.box input[type = "text"]:focus,.box input[type = "password"]:focus{
width: 280px;
border-color: #2ecc71;
}
.box input[type = "submit"]{
border:0;
background: none;
display: block;
margin: 20px auto;
text-align: center;
border: 2px solid #2ecc71;
padding: 14px 40px;
outline: none;
color: white;
border-radius: 24px;
transition: 0.25s;
cursor: pointer;
}
.box input[type = "submit"]:hover{
background: #2ecc71;
}
.error {
    width: 92%;
    margin: 0px auto;
    padding: 10px;
    border: 1px solid #a94442;
    color: #a94442;
    background: #f2dede;
    border-radius: 5px;
    text-align:left;
}
.success {
    color : #3c763d;
    background: #dff0d8;
    border: 1px solid #3c763d;
    margin-bottom : 20px;
}

```

}

1.3.1. Styleclc

```
@import
url(https://fonts.googleapis.com/css2?family=Poppins:wght@300&display=swap);
*{
    margin:0;
    padding:0;
    box-sizing: border-box;
    font-family: 'Poppins' , sans-serif;

}
body{
    display: flex;
    justify-content: center;

    min-height: 100vh;

}

.container
{
    width: 1100px;
    display: flex;
    justify-content: space-between;
    flex-wrap: wrap;
}
.container .box
{
    position: relative;
    width:320px;
    background: #ffff;
    padding: 100px 40px 60px;
    box-shadow: 0 15px 45px rgba(0,0,0,.1);
}
.container .box:before
{
    content: "";
    position: absolute;
    top:0;
    left:0;
    width: 100%;
    height: 100%;
    background: #000080;
    transform: scaleY(0);
    transform-origin: top;
    transition: transform 0.5s;
```

```

}

.container .box:hover:before
{
    transform: scaleY(1);
    transform-origin: bottom;
    transition: transform 0.5s;

}

.container .box h2
{
    position:absolute;
    left:40px;
    top: 60px;
    font-size: 4em;
    font-weight: 800;
    z-index: 1;
    opacity: 0.1;
    transition: 0.5s;

}

.container .box:hover h2
{
    opacity: 1;
    color:#fff;
    transform: translateY(-40px);
}

.container .box h3
{
    position: :relative;
    font-size: 1.5em;
    z-index: 2;
    color: #333;
    transition: 0.5s;

}

.container .box p
{
    position: :relative;
    z-index: 2;
    color: #555;
    transition: 0.5s;

}

.container .box:hover h3,
.container .box:hover p
{
    color:#ffffff;
}

```

1.3.2. Stylenav

```
@import
url('https://fonts.googleapis.com/css?family=Poppins:400,500,600,700&display=swap');
*{
  margin: 0;
  padding: 0;
  box-sizing: border-box;
  font-family: 'Poppins', sans-serif;
}
.wrapper{
  height: 100%;
  width: 300px;
  position: relative;
}
.wrapper .menu-btn{
  position: absolute;
  left: 20px;
  top: 10px;
  background: #4a4a4a;
  color: #fff;
  height: 45px;
  width: 45px;
  z-index: 9999;
  border: 1px solid #333;
  border-radius: 5px;
  cursor: pointer;
  display: flex;
  align-items: center;
  justify-content: center;
  transition: all 0.3s ease;
}
#btn:checked ~ .menu-btn{
  left: 247px;
}
.wrapper .menu-btn i{
  position: absolute;
  transform: ;
  font-size: 23px;
  transition: all 0.3s ease;
}
.wrapper .menu-btn i.fa-times{
  opacity: 0;
}
#btn:checked ~ .menu-btn i.fa-times{
  opacity: 1;
  transform: rotate(-180deg);
}
#btn:checked ~ .menu-btn i.fa-bars{
```

```

    opacity: 0;
    transform: rotate(180deg);
}
#sidebar{
    position: fixed;
    background: #404040;
    height: 100%;
    width: 270px;
    overflow: hidden;
    left: -270px;
    transition: all 0.3s ease;
}
#btn:checked ~ #sidebar{
    left: 0;
}
#sidebar .title{
    line-height: 65px;
    text-align: center;
    background: #333;
    font-size: 25px;
    font-weight: 600;
    color: #f2f2f2;
    border-bottom: 1px solid #222;
}
#sidebar .list-items{
    position: relative;
    background: #404040;
    width: 100%;
    height: 100%;
    list-style: none;
}
#sidebar .list-items li{
    padding-left: 40px;
    line-height: 50px;
    border-top: 1px solid rgba(255,255,255,0.1);
    border-bottom: 1px solid #333;
    transition: all 0.3s ease;
}
#sidebar .list-items li:hover{
    border-top: 1px solid transparent;
    border-bottom: 1px solid transparent;
    box-shadow: 0 0px 10px 3px #222;
}
#sidebar .list-items li:first-child{
    border-top: none;
}
#sidebar .list-items li a{
    color: #f2f2f2;
    text-decoration: none;
    font-size: 18px;
}

```

```

font-weight: 500;
height: 100%;
width: 100%;
display: block;
}
#sidebar .list-items li a i{
margin-right: 20px;
}
#sidebar .list-items .icons{
width: 100%;
height: 40px;
text-align: center;
position: absolute;
bottom: 100px;
line-height: 40px;
display: flex;
align-items: center;
justify-content: center;
}
#sidebar .list-items .icons a{
height: 100%;
width: 40px;
display: block;
margin: 0 5px;
font-size: 18px;
color: #f2f2f2;
background: #4a4a4a;
border-radius: 5px;
border: 1px solid #383838;
transition: all 0.3s ease;
}
#sidebar .list-items .icons a:hover{
background: #404040;
}
.list-items .icons a:first-child{
margin-left: 0px;
}
.content{
position: absolute;
top: 50%;
left: 50%;
transform: translate(-50%,-50%);
color: #202020;
z-index: -1;
width: 100%;
text-align: center;
}
.content .header{
font-size: 45px;
font-weight: 700;

```

```

}
.content p{
    font-size: 40px;
    font-weight: 700;
}

```

1.4. Errors

```

<?php if (count($errors)>0): ?>
    <link rel="stylesheet" type="text/css" href="style.css">
    <div class="error">
        <?php foreach ($errors as $error): ?>
            <p><?php echo $error?></p>
        <?php endforeach ?>
    </div>
<?php endif ?>

```

1.5. Vote

```

<?php include('navbar.php') ?>
<!DOCTYPE html>
<html>
    <head>
        <title>Live Poll System in PHP Mysql using Ajax</title>
        <link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.6/css/bootstrap.min.css" />
        <script src="https://ajax.googleapis.com/ajax/libs/jquery/2.2.0/jquery.min.js"></script>
        <script
src="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.6/js/bootstrap.min.js"></script>
    </head>
    <body>
        <div class="container">
            <br />
            <br />
        <br />
        <h2 align="center">State Elections</h2><br />
        <div class="row">
            <div class="col-md-6">
                <form method="post" id="poll_form">
                    <h3>Select the party you want to vote for and press submit.</h3>
                    <br />
                    <div class="radio">
                        <label><h4><input type="radio" name="poll_option" class="poll_option" value="BJP" />Bharatiya Jantha Party</h4></label>
                    </div>
                    <div class="radio">
                        <label><h4><input type="radio" name="poll_option" class="poll_option" value="INC" />Indian National Congress</h4></label>
                    </div>
                    <div class="radio">

```

```

<label><h4><input type="radio" name="poll_option" class="poll_option" value="AAP" /> Aam Aadmi Part</h4></label>
</div>
<div class="radio">
<label><h4><input type="radio" name="poll_option" class="poll_option" value="ICP" /> Indian Communist Party</h4></label>
</div>
<div class="radio">
<label><h4><input type="radio" name="poll_option" class="poll_option" value="ICPM" /> Indian Communist Party-Marxism</h4></label>
</div>
<br />
<input type="submit" name="poll_button" id="poll_button" class="btn btn-primary" />
</form>
<br />
</div>
<div class="col-md-6">
<br />
<br />
<br />
<h4>Live Poll Result</h4><br />
<div id="poll_result"></div>
</div>
</div>

<br />
<br />
<br />
</div>
</body>
</html>
<script>
$(document).ready(function(){

$('#poll_form').on('submit', function(event){
event.preventDefault();
var poll_option = '';
$('.poll_option').each(function(){
if($(this).prop("checked")){
{
poll_option = $(this).val();
}
});
if(poll_option != ""){
$('#poll_button').attr("disabled", "disabled");
var form_data = $(this).serialize();

```

```

$.ajax({
    url:"poll.php",
    method:"POST",
    data:form_data,
    success:function(data)
    {
        $('#poll_form')[0].reset();
        $('#poll_button').attr('disabled', false);
        fetch_poll_data();
        alert("Poll Submitted Successfully");
    }
});
}
else
{
    alert("Please Select Option");
}
});
});

});
</script>

```

1.6. Click box

```

<!DOCTYPE html>
<html>
<head>
    <title>Select Process</title>
    <meta charset="utf-8">
    <link rel="stylesheet" href="styleclc.css">
    <link rel="stylesheet" href="https://stackpath.bootstrapcdn.com/font-awesome/4.7.0/css/font-awesome.min.css" >
</head>
<body>
    <div class="container">
        <div class="box">
            <h2>01</h2>
            <h3>Candidate List</h3>
            <p>CLick to see Candidate list</p>
        </div>
        <div class="box">
            <h2>02</h2>
            <h3>Elections Occurring Now</h3>
            <p>List of all elections occurring now</p>
        </div>
        <div class="box">
            <h2>03</h2>
            <h3>Results of the past elections</h3>
            <p>REsults of all the past held elections</p>
        </div>
    </div>

```

```
</div>
```

```
</body>  
</html>
```

1.7. Database Connection

```
<?php  
$connect = new PDO("mysql:host=localhost;dbname=ovs","ovs","");
?>
```

1.8. Fetch Poll

```
<?php  
  
//fetch_poll_data.php  
  
include('database_connection.php');  
  
$php_framework = array("BJP", "INC", "AAP", "ICP", "ICPM");  
  
$total_poll_row = get_total_rows($connect);  
  
$output = '';  
if($total_poll_row > 0)  
{  
    foreach($php_framework as $row)  
    {  
        $query = "  
SELECT * FROM tbl_poll WHERE php_framework = '".$row."  
";  
        $statement = $connect->prepare($query);  
        $statement->execute();  
        $total_row = $statement->rowCount();  
  
        $percentage_vote = round((($total_row/$total_poll_row)*100));  
        $progress_bar_class = '';  
        if($percentage_vote >= 40)  
        {  
            $progress_bar_class = 'progress-bar-success';  
        }  
        else if($percentage_vote >= 25 && $percentage_vote < 40)  
        {  
            $progress_bar_class = 'progress-bar-info';  
        }  
        else if($percentage_vote >= 10 && $percentage_vote < 25)  
        {  
            $progress_bar_class = 'progress-bar-warning';  
        }
```

```

    }
    else
    {
        $progress_bar_class = 'progress-bar-danger';
    }
    $output .= '
<div class="row">
    <div class="col-md-2" align="right">
        <label>'.$row.'</label>
    </div>
    <div class="col-md-10">
        <div class="progress">
            <div class="progress-bar '.$progress_bar_class.'" role="progressbar" aria-valuenow="'.$percentage_vote.'" aria-valuemin="0" aria-valuemax="100"
style="width:'.$percentage_vote.'%">
                '.$percentage_vote.' % programmer like <b>'.$row.'</b> PHP Framework
            </div>
        </div>
    </div>
</div>
';

    }

}

echo $output;

function get_total_rows($connect)
{
    $query = "SELECT * FROM tbl_poll";
    $statement = $connect->prepare($query);
    $statement->execute();
    return $statement->rowCount();
}

?>

```

1.9. Home

```

<?php include('navbar.php') ?>
<?php include('clickbox.php') ?>
<!DOCTYPE html>
<html>
<head>
    <title>Home</title>
</head>
<body>

</body>
</html>

```

1.10. Index

```
<?php include('navbar.php') ?>

<?php include('server.php');
    if(empty($_SESSION['user'])) {
        header("Location:LoginV.php");
    }

?>
<!DOCTYPE html>
<html>
<head>
    <title>User registration using php</title>
    <link rel="stylesheet" >
</head>
<body>

<div class = "content">
    <?php if (isset($_SESSION['success'])): ?>
    <div class="success">
        <h3>
            <?php
            echo $_SESSION['success'];
            unset($_SESSION['success']);

        ?>
        </h3>
    </div>

    <?php endif ?>
    <?php if (isset($_SESSION['user'])): ?>
        <h3 class="box">Welcome <strong><?php echo $_SESSION['user'];
?></strong></h3>
        <button><a href="LoginV.php?logout='1"
style="color:red;">Logout</a></button>
    <?php endif ; ?>
</div>

</body>
</html>
```

1.11. Login

```
<?php include('server.php'); ?>
<!DOCTYPE html>
<html>
```

```

<head>
    <meta charset="utf-8">

        <title>Login</title>
        <link rel="stylesheet" type="text/css" href="style.css">
</head>
<body>

    <form class="box" action="LoginV.php" method="post">
        <?php include('errors.php'); ?>
        <h1>Login</h1>
        <input type="text" name="user" placeholder="Username" required>
        <input type="password" name="pass" placeholder="Password" required>
        <input type="submit" name="login" value="Login">

        <p style="color:white">
            Not a member ? <a href="RegV.php" type="submit">Sign up</a>
        </p>
    </form>

</body>
</html>

```

1.12. Navigation

```

<!DOCTYPE html>
<!-- Created By CodingNepal -->
<html lang="en" dir="ltr">
    <head>
        <meta charset="utf-8">

        <link rel="stylesheet" href="stylenav.css">
        <link rel="stylesheet" href="https://cdnjs.cloudflare.com/ajax/libs/font-awesome/5.15.3/css/all.min.css"/>
    </head>
    <body>
        <div class="wrapper">
            <input type="checkbox" id="btn" hidden>
            <label for="btn" class="menu-btn">
                <i class="fas fa-bars"></i>
                <i class="fas fa-times"></i>
            </label>
            <nav id="sidebar">
                <div class="title">
                    Voting System</div>
                <ul class="list-items">
                    <li><a href="home.php"><i class="fas fa-home"></i>Home</a></li>
                    <li><a href="#"><i class="fas fa-id-card "></i>User Details</a></li>
                
```

```

<li><a href="vote.php"><i class="fas fa-address-book"></i>VOTE NOW!</a></li>
<li><a href="#"><i class="fas fa-globe-asia"></i>Languages</a></li>
<li><a href="#"><i class="fas fa-envelope"></i>Contact us</a></li>
<li><a href="#"><i class="fas fa-envelope"></i>Results</a></li>
<div class="icons">
    <a href="#"><i class="fab fa-facebook-f"></i></a>
    <a href="#"><i class="fab fa-twitter"></i></a>
    <a href="#"><i class="fab fa-github"></i></a>
    <a href="#"><i class="fab fa-youtube"></i></a>
</div>
</ul>
</nav>
</div>

</body>
</html>

```

1.13. Poll

```

<?php

//poll.php

include('database_connection.php');

if(isset($_POST["poll_option"]))
{
    $query = "
INSERT INTO tbl_poll
(phi_framework) VALUES (:phi_framework)
";
    $data = array(
        ':phi_framework' => $_POST["poll_option"]
    );
    $statement = $connect->prepare($query);
    $statement->execute($data);
}

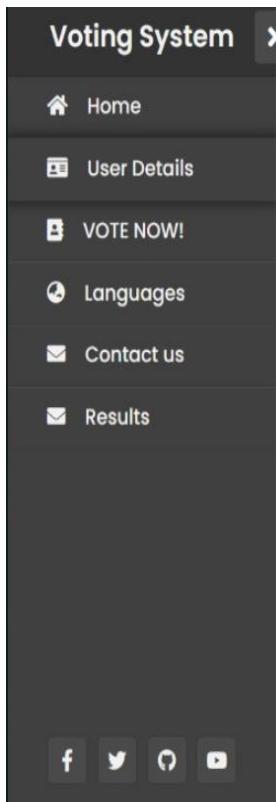
?>

```

2. Result of Module 2

A screenshot of a web browser showing a registration form. The title of the page is "REGISTER". The form consists of six input fields: "Username", "Email", "Phone Number", "Aadhar Number", "Password", and "Confirm Password". Below the "Confirm Password" field is a green "Register" button. At the bottom of the form, there is a link "Already a member ? [Sign in](#)". The browser's address bar shows "localhost/V/RegV.php".

A screenshot of a web browser showing a login form. The title of the page is "LOGIN". The form consists of two input fields: "Username" and "Password". Below the "Password" field is a green "Login" button. At the bottom of the form, there is a link "Not a member ? [Sign up](#)". The browser's address bar shows "localhost/V/LoginV.php".



The main content area of the application is divided into three vertical sections. On the far left, there is a small icon of three horizontal lines inside a square. The first section, located on the left, has a dark blue background and contains a large white number "01". The second section, in the center, has a light gray background and contains a large white number "02". It also features a title "Elections Occurring Now" and a subtitle "List of all elections occurring now". The third section, on the right, has a light gray background and contains a large white number "03". It features a title "Results of the past elections" and a subtitle "Results of all the past held elections".



State Elections

Select the party you want to vote for and press submit.

Live Poll Result

- Bharatiya Jantha Party
- Indian National Congress
- Aam Aadmi Part
- Indian Communist Party
- Indian Communist Party-Marxism

Submit

The screenshot shows the MySQL Workbench interface for managing a database table named 'poll'. The 'Structure' tab is active. The table structure is defined as follows:

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	poll_id	int(11)	latin1_spanish_ci		No	None		AUTO_INCREMENT	Change Drop More
2	php_framework	varchar(100)	latin1_spanish_ci		No	None			Change Drop More

Below the table structure, there are various management options: Print, Propose table structure, Track table, Move columns, Normalize, Add (with a dropdown for 1 column(s) after php_framework), and Go. The 'Indexes' section shows a single primary index on the 'poll_id' column. There is also a section to Create an index on 1 columns with a Go button. The 'Partitions' section is also visible.

Result:

Thus, Module 2 was implemented and documented successfully.



DEPT. Of Computer Science Engineering

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	10
Title of Experiment	Module 3 Implementation
Name of the candidate	Shravya Sharan
Team Members	Prachet Balaji, Karthik Menon
Register Number	RA1911026010055
Date of Experiment	15-04-2021

Mark Split Up

Sr. No	Description	Maximum Mark	Mark Obtained
1	Module 3	5	
2	Output	5	
Total		10	

Staff Signature with date

Aim:

To implement Module 3 of the project and display the output of the module with solving new issues.

Team Members:

Sr No	Register No	Name	Role
1	RA1911026010055	Shravya Sharan	Lead
2	RA1911026010054	Karthik Menon	Member
3	RA1911026010053	Prachet Balaji	Member

Software Used:

Python, php, MySQL

Software Description and Implementation- Module 3

Lab Session #10

1. Code of Module 3

1.1. Registration

```
<?php include('server.php'); ?>
<!DOCTYPE html>
<html>
<head>
    <meta charset="utf-8">

    <title>Register</title>
    <link rel="stylesheet" type="text/css" href="style.css">
</head>
<body>
    <form class="box" action="RegV.php" method="post">
        <?php include('errors.php'); ?>
        <h1>Register</h1>
        <input type="text" name="user" placeholder="Username" required>
        <input type="email" name="email" placeholder="Email" required>
        <input type="text" name="phone" placeholder="Phone Number">
        <input type="text" name="aadhar" placeholder="Aadhar Number">
        <input type="password" name="pass1" placeholder="Password">
        <input type="password" name="pass2" placeholder="Confirm Password">
        <input type="submit" name="register" value="Register">

        <p style="color:white">
            Already a member ? <a href="LoginV.php" type="submit">Sign in</a>
        </p>
    </form>

</body>
</html>
```

1.2. Server

```
<?php
    session_start();

    #$username="";
    #$email="";
    #$aadhar="";
    $errors=array();
    $db =mysqli_connect("localhost","root","","ovs");
    mysqli_select_db($db,'ovs');

    if (Isset($_POST['login'])) {
        $username= $_POST['user1'];
```

```

$password=$_POST['pass1'];

$query ="SELECT pass FROM user WHERE name ='$username' ";
$result=mysqli_query($db,$query);

if (mysqli_num_rows($result)) {
    //log user in.
    $_SESSION['user'] = $username;
    $_SESSION['success'] = "You are now logged in";header('location: index.php');
} else {
    array_push($errors, "Wrong username/password combination");
}
}

if(isset($_POST['register'])){
    $username= $_POST['user'];
    $email= $_POST['email'];
    $pnum= $_POST['phone'];
    $aadhar= $_POST['aadhar'];
    $password_1= $_POST['pass1'];
    $password_2= mysqli_real_escape_string($db, $_POST['pass2']);
    if(empty($username)) {
        array_push($errors, "Username is required");
    }
    if(empty($email)) {
        array_push($errors,"Email is required");
    }
    if(empty($pnum)) {
        array_push($errors,"Phone number is required");
    }
    if(empty($aadhar)) {
        array_push($errors, "Aadhar Card number is required");
    }
    if(empty($password_1)) {
        array_push($errors, "Password is required");
    }
    if($password_1 != $password_2 ) {
        array_push($errors, "Two Passwords do not match");
    }
}

if(count($errors)==0){
    $password=md5($password_1); //for security
    $sql ="INSERT INTO user(name,email,phone,aadhar,pass)
VALUES ('$username','$email','$pnum','$aadhar','$password_1')";
    mysqli_query($db,$sql);
    $_SESSION['user'] = $username;
    $_SESSION['success'] = "You are now logged in";
}

```

```

        header('location: LoginV.php');
    }
}

if(isset($_POST['poll_button'])){
{
$username=$_SESSION['user'];
$query1="SELECT flag FROM user WHERE name='$username'";
$f=mysqli_query($db,$query1);
$g = mysqli_fetch_array($f);
if($g["flag"]==0)
{
$opt=$_POST["poll_option"];
$query="SELECT votecount FROM count WHERE id='$opt'";
$result=mysqli_query($db,$query);

$query=" UPDATE count SET votecount=votecount+1 WHERE id='$opt'";
mysqli_query($db,$query);
//header("location:index.php");
$query1=" UPDATE user SET flag=1 WHERE name='$username'";
mysqli_query($db,$query1);
}
else
{
array_push($errors,"ALREADY VOTED");
}
}

//logout
if (isset($_GET['logout'])){
session_destroy();
unset($_SESSION['username']);
header('location: LoginV.php');
}
?>

```

1.3. Style

```

body{
margin: 0;
padding: 0;
font-family: sans-serif;
background: #34495e;
}
.box{
width: 300px;

```

```

padding: 40px;
position: absolute;
top: 50%;
left: 50%;
transform: translate(-50%,-50%);
background: #191919;
text-align: center;
}
.box h1{
color: white;
text-transform: uppercase;
font-weight: 500;
}
.box input[type = "text"],.box input[type = "password"]{
border:0;
background: none;
display: block;
margin: 20px auto;
text-align: center;
border: 2px solid #3498db;
padding: 14px 10px;
width: 200px;
outline: none;
color: white;
border-radius: 24px;
transition: 0.25s;
}
.box input[type = "text"]:focus,.box input[type = "password"]:focus{
width: 280px;
border-color: #2ecc71;
}
.box input[type = "submit"]{
border:0;
background: none;
display: block;
margin: 20px auto;
text-align: center;
border: 2px solid #2ecc71;
padding: 14px 40px;
outline: none;
color: white;
border-radius: 24px;
transition: 0.25s;
cursor: pointer;
}
.box input[type = "submit"]:hover{
background: #2ecc71;
}
.error {

```

```

        width: 92%;
        margin: 0px auto;
        padding: 10px;
        border: 1px solid #a94442;
        color: #a94442;
        background: #f2dede;
        border-radius: 5px;
        text-align:left;
    }
.success {
    color : #3c763d;
    background: #dff0d8;
    border: 1px solid #3c763d;
    margin-bottom : 20px;
}
.red{
    background-color:#a94442 ;
}

}

```

1.3.1. Styleclc

```

@import
url(https://fonts.googleapis.com/css2?family=Poppins:wght@300&display=swap);
*{
    margin:0;
    padding:0;
    box-sizing: border-box;
    font-family: 'Poppins' , sans-serif;

}
body{
    display: flex;
    justify-content: center;

    min-height: 100vh;

}
.container
{
    width: 1100px;
    display: flex;
    justify-content: space-between;
    flex-wrap: wrap;
}
.container .box
{

```

```

        position: relative;
        width: 320px;
        background: #fff;
        padding: 100px 40px 60px;
        box-shadow: 0 15px 45px rgba(0,0,0,.1);
    }
    .container .box:before
    {
        content: "";
        position: absolute;
        top: 0;
        left: 0;
        width: 100%;
        height: 100%;
        background: #000080;
        transform: scaleY(0);
        transform-origin: top;
        transition: transform 0.5s;
    }
    .container .box:hover:before
    {
        transform: scaleY(1);
        transform-origin: bottom;
        transition: transform 0.5s;
    }
    .container .box h2
    {
        position: absolute;
        left: 40px;
        top: 60px;
        font-size: 4em;
        font-weight: 800;
        z-index: 1;
        opacity: 0.1;
        transition: 0.5s;
    }
    .container .box:hover h2
    {
        opacity: 1;
        color: #fff;
        transform: translateY(-40px);
    }
    .container .box h3
    {

```

```

        position: :relative;
        font-size: 1.5em;
        z-index: 2;
        color: #333;
        transition: 0.5s;

    }
.container .box p
{
    position: :relative;
    z-index: 2;
    color: #555;
    transition: 0.5s;

}
.container .box:hover h3{
    opacity: 1;
    color:#fff;
    transform: translateY(0px);

}
.container .box:hover p
{
    opacity: 1;
    color:#fff;
    transform: translateY(0px);
}

```

1.3.2. Stylenav

```

@import
url('https://fonts.googleapis.com/css?family=Poppins:400,500,600,700&display=swap');

*{
    margin: 0;
    padding: 0;
    box-sizing: border-box;
    font-family: 'Poppins', sans-serif;
}

.wrapper{
    height: 100%;
    width: 300px;
    position: relative;
}

.wrapper .menu-btn{
    position: absolute;
    left: 20px;
    top: 10px;
}

```

```

background: #4a4a4a;
color: #fff;
height: 45px;
width: 45px;
z-index: 9999;
border: 1px solid #333;
border-radius: 5px;
cursor: pointer;
display: flex;
align-items: center;
justify-content: center;
transition: all 0.3s ease;
}
#btn:checked ~ .menu-btn{
left: 247px;
}
.wrapper .menu-btn i{
position: absolute;
transform: ;
font-size: 23px;
transition: all 0.3s ease;
}
.wrapper .menu-btn i.fa-times{
opacity: 0;
}
#btn:checked ~ .menu-btn i.fa-times{
opacity: 1;
transform: rotate(-180deg);
}
#btn:checked ~ .menu-btn i.fa-bars{
opacity: 0;
transform: rotate(180deg);
}
#sidebar{
position: fixed;
background: #404040;
height: 100%;
width: 270px;
overflow: hidden;
left: -270px;
transition: all 0.3s ease;
}
#btn:checked ~ #sidebar{
left: 0;
}
#sidebar .title{
line-height: 65px;
text-align: center;
background: #333;
font-size: 25px;
}

```

```

font-weight: 600;
color: #f2f2f2;
border-bottom: 1px solid #222;
}
#sidebar .list-items{
position: relative;
background: #404040;
width: 100%;
height: 100%;
list-style: none;
}
#sidebar .list-items li{
padding-left: 40px;
line-height: 50px;
border-top: 1px solid rgba(255,255,255,0.1);
border-bottom: 1px solid #333;
transition: all 0.3s ease;
}
#sidebar .list-items li:hover{
border-top: 1px solid transparent;
border-bottom: 1px solid transparent;
box-shadow: 0 0px 10px 3px #222;
}
#sidebar .list-items li:first-child{
border-top: none;
}
#sidebar .list-items li a{
color: #f2f2f2;
text-decoration: none;
font-size: 18px;
font-weight: 500;
height: 100%;
width: 100%;
display: block;
}
#sidebar .list-items li a i{
margin-right: 20px;
}
#sidebar .list-items .icons{
width: 100%;
height: 40px;
text-align: center;
position: absolute;
bottom: 100px;
line-height: 40px;
display: flex;
align-items: center;
justify-content: center;
}
#sidebar .list-items .icons a{

```

```

height: 100%;
width: 40px;
display: block;
margin: 0 5px;
font-size: 18px;
color: #f2f2f2;
background: #4a4a4a;
border-radius: 5px;
border: 1px solid #383838;
transition: all 0.3s ease;
}
#sidebar .list-items .icons a:hover{
background: #404040;
}
.list-items .icons a:first-child{
margin-left: 0px;
}
.content{
position: absolute;
top: 50%;
left: 50%;
transform: translate(-50%,-50%);
color: #202020;
z-index: -1;
width: 100%;
text-align: center;
}
.content .header{
font-size: 45px;
font-weight: 700;
}
.content p{
font-size: 40px;
font-weight: 700;
}

```

1.4. Vote

```

<?php include('navbar.php') ?>
<?php include('server.php'); ?>
<!DOCTYPE html>
<html>
<head>
<title>Live Poll System in PHP Mysql using Ajax</title>
<link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.6/css/bootstrap.min.css" />

```

```

</head>
<body>
    <div class="container">
        <br />
        <br />
    <br />
    <h2 align="center">State Elections</h2><br />
    <div class="row">
        <div class="col-md-6">
            <?php include('errors.php'); ?>
            <form method="post" id="poll_form" action="vote.php">
                <h3>Select the party you want to vote for and press submit.</h3>
                <br />
                <div class="radio">
                    <label><h4><input type="radio" name="poll_option" class="poll_option" value="2">
                    />Bharatiya Jantha Party</h4></label>
                </div>
                <div class="radio">
                    <label><h4><input type="radio" name="poll_option" class="poll_option" value="5">
                    />Indian National Congress</h4></label>
                </div>3
                <div class="radio">
                    <label><h4><input type="radio" name="poll_option" class="poll_option" value="1">
                    /> Aam Aadmi Part</h4></label>
                </div>
                <div class="radio">
                    <label><h4><input type="radio" name="poll_option" class="poll_option" value="3">
                    /> Indian Communist Party</h4></label>
                </div>
                <div class="radio">
                    <label><h4><input type="radio" name="poll_option" class="poll_option" value="4">
                    /> Indian Communist Party-Marxism</h4></label>
                </div>
                <br />
                <input type="submit" name="poll_button" id="poll_button" class="btn btn-primary" />
            </form>

            <br />
        </div>
        <div class="col-md-6">
            <br />
            <br />
            <br />
            <br />
            <h4></h4><br />
            <div id="poll_result"></div>
        </div>
    </div>

```

```

<br />
<br />
<br />
</div>
</body>
</html>

```

1.5. Click box

```

<!DOCTYPE html>
<html>
<head>
    <title>Select Process</title>
    <meta charset="utf-8">
    <link rel="stylesheet" href="styleclc.css">
    <link rel="stylesheet" href="https://stackpath.bootstrapcdn.com/font-awesome/4.7.0/css/font-awesome.min.css" >
</head>
<body>
    <div class="container">
        <div class="box">
            <h2>01</h2>
            <h3>Candidate List</h3>
            <p>CLick to see Candidate list</p>
        </div>
        <div class="box">
            <h2>02</h2>
            <h3>Elections Occurring Now</h3>
            <p>List of all elections occurring now</p>
        </div>
        <div class="box">
            <h2>03</h2>
            <h3>Results of the past elections</h3>
            <p>REsults of all the past held elections</p>
        </div>
    </div>
</body>
</html>

```

1.6. Errors

```

<?php if (count($errors)>0): ?>
    <link rel="stylesheet" type="text/css" href="">
    <div class="error">
        <?php foreach ($errors as $error): ?>

```

```

        <p><?php echo $error?></p>
    <?php endforeach ?>
</div>
<?php endif ?>
```

1.7. Database Connection

```
<?php
$connect = new PDO("mysql:host=localhost;dbname=ovs","ovs","");
?>
```

1.8. Fetch Poll

```

<?php
//fetch_poll_data.php

include('database_connection.php');

$php_framework = array("BJP", "INC", "AAP", "ICP", "ICPM");

$total_poll_row = get_total_rows($connect);

$output = '';
if($total_poll_row > 0)
{
    foreach($php_framework as $row)
    {
        $query =
        "SELECT * FROM tbl_poll WHERE php_framework = '".$row."'";
        ;
        $statement = $connect->prepare($query);
        $statement->execute();
        $total_row = $statement->rowCount();

        $percentage_vote = round((($total_row/$total_poll_row)*100));
        $progress_bar_class = '';
        if($percentage_vote >= 40)
        {
            $progress_bar_class = 'progress-bar-success';
        }
        else if($percentage_vote >= 25 && $percentage_vote < 40)
        {
            $progress_bar_class = 'progress-bar-info';
        }
        else if($percentage_vote >= 10 && $percentage_vote < 25)
        {
            $progress_bar_class = 'progress-bar-warning';
        }
    }
}
```

```

else
{
    $progress_bar_class = 'progress-bar-danger';
}
$output .= '
<div class="row">
<div class="col-md-2" align="right">
<label>'.$row.'</label>
</div>
<div class="col-md-10">
<div class="progress">
<div class="progress-bar '.$progress_bar_class.'" role="progressbar" aria-
valuenow="'.$percentage_vote.'" aria-valuemin="0" aria-valuemax="100"
style="width:'.$percentage_vote.'%">
'.$percentage_vote.' % programmer like <b>'.$row.'</b> PHP Framework
</div>
</div>
</div>
</div>
';
}
}

echo $output;

```

```

function get_total_rows($connect)
{
$query = "SELECT * FROM tbl_poll";
$statement = $connect->prepare($query);
$statement->execute();
return $statement->rowCount();
}

?>

```

1.9. Home

```

<?php include('navbar.php') ?>
<?php include('clickbox.php') ?>
<!DOCTYPE html>
<html>
<head>
    <title>Home</title>
</head>
<body>

</body>
</html>

```

1.10. Index

```
<?php include('navbar.php') ?>

<?php include('server.php');
    if(empty($_SESSION['user'])) {
        header("Location:LoginV.php");
    }

?>
<!DOCTYPE html>
<html>
<head>
    <title>User registration using php</title>
    <link rel="stylesheet" >
</head>
<body>

<div class = "content">
    <?php if (isset($_SESSION['success'])): ?>
    <div class="success">
        <h3>
            <?php
                echo $_SESSION['success'];
                unset($_SESSION['success']);

?>
        </h3>
    </div>

    <?php endif ?>
    <?php if (isset($_SESSION['user'])): ?>
        <h3 class="box">Welcome <strong><?php echo $_SESSION['user'];
?></strong></h3>
        <button><a href="LoginV.php?logout='1"
style="color:red;">Logout</a></button>
    <?php endif ; ?>
</div>

</body>
</html>
```

1.11. Login

```
<?php include('server.php'); ?>
<!DOCTYPE html>
<html>
```

```

<head>
    <meta charset="utf-8">

        <title>Login</title>
        <link rel="stylesheet" type="text/css" href="style.css">
</head>
<body>

    <form class="box" action="LoginV.php" method="post">

        <h1>Login</h1>
        <input type="text" name="user1" placeholder="Username" required>
        <input type="password" name="pass1" placeholder="Password" required>
        <input type="submit" name="login" value="Login">

        <p style="color:white">
            Not a member ? <a href="RegV.php" type="submit">Sign up</a>
        </p>
    </form>

</body>

</html>

```

1.12. Navigation

```

<!DOCTYPE html>

<html lang="en" dir="ltr">
    <head>
        <meta charset="utf-8">

        <link rel="stylesheet" href="stylenav.css">
        <link rel="stylesheet" href="https://cdnjs.cloudflare.com/ajax/libs/font-awesome/5.15.3/css/all.min.css"/>
    </head>
    <body>
        <div class="wrapper">
            <input type="checkbox" id="btn" hidden>
            <label for="btn" class="menu-btn">
                <i class="fas fa-bars"></i>
                <i class="fas fa-times"></i>
            </label>
            <nav id="sidebar">
                <div class="title">
                    Voting System</div>
                <ul class="list-items">

```

```

<li><a href="home.php"><i class="fas fa-home"></i>Home</a></li>
<li><a href="#"><i class="fas fa-id-card "></i>User Details</a></li>
<li><a href="vote.php"><i class="fas fa-address-book"></i>VOTE NOW!</a></li>
<li><a href="#"><i class="fas fa-globe-asia"></i>Languages</a></li>
<li><a href="#"><i class="fas fa-envelope"></i>Contact us</a></li>
<li><a href="result.php"><i class="fas fa-envelope"></i>Results</a></li>
<div class="icons">
    <a href="#"><i class="fab fa-facebook-f"></i></a>
    <a href="#"><i class="fab fa-twitter"></i></a>
    <a href="#"><i class="fab fa-github"></i></a>
    <a href="#"><i class="fab fa-youtube"></i></a>
</div>
</ul>
</nav>
</div>

</body>
</html>

```

1.13. Database

```

-- phpMyAdmin SQL Dump
-- version 5.1.0
-- https://www.phpmyadmin.net/
--
-- Host: 127.0.0.1
-- Generation Time: Apr 07, 2021 at 01:36 PM
-- Server version: 10.4.18-MariaDB
-- PHP Version: 7.4.16

SET SQL_MODE = "NO_AUTO_VALUE_ON_ZERO";
START TRANSACTION;
SET time_zone = "+00:00";

/*!40101 SET @OLD_CHARACTER_SET_CLIENT=@@CHARACTER_SET_CLIENT */;
/*!40101 SET @OLD_CHARACTER_SET_RESULTS=@@CHARACTER_SET_RESULTS */;
/*!40101 SET @OLD_COLLATION_CONNECTION=@@COLLATION_CONNECTION */;
/*!40101 SET NAMES utf8mb4 */;

--
-- Database: `ovs`
--

-----
-- Table structure for table `count`
--
```

```

CREATE TABLE `count` (
  `can` varchar(255) NOT NULL,
  `votecount` int(255) NOT NULL,
  `id` int(255) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;

-- 
-- Dumping data for table `count`
-- 

INSERT INTO `count` (`can`, `votecount`, `id`) VALUES
('AAP', 6, 1),
('BJP', 0, 2),
('ICP', 1, 3),
('ICPM', 0, 4),
('INC', 0, 5);

-----


-- 
-- Table structure for table `user`
-- 

CREATE TABLE `user` (
  `name` varchar(255) NOT NULL,
  `email` varchar(255) NOT NULL,
  `phone` int(13) NOT NULL,
  `aadhar` int(12) NOT NULL,
  `pass` varchar(255) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;

-- 
-- Dumping data for table `user`
-- 

INSERT INTO `user` (`name`, `email`, `phone`, `aadhar`, `pass`) VALUES
('Person 1', 'person1@gmail.com', 1234567890, 1234567890, '123'),
('Person 10', 'person10@gmail.com', 1234567890, 2147483647, '123'),
('Person 2', 'person2@gmail.com', 1234567890, 2147483647, '123'),
('Person 3', 'person3@gmail.com', 1234567890, 2147483647, '123'),
('Person 4', 'person4@gmail.com', 1234567890, 2147483647, '123'),
('Person 5', 'prachet.balaji@gmail.com', 2147483647, 2147483647, '123'),
('Person 6', 'person6@gmail.com', 1234567890, 2147483647, '123'),
('Person 7', 'prachet.balaji@gmail.com', 2147483647, 2147483647, '123'),
('Person 8', 'prachet.balaji@gmail.com', 2147483647, 1234567890, '123'),
('Person 9', 'prachet.balaji@gmail.com', 2147483647, 2147483647, '123');

-- 
-- Indexes for dumped tables

```

```

-- 

-- Indexes for table `count` 

-- 
ALTER TABLE `count` 
ADD PRIMARY KEY (`can`); 

-- 

-- Indexes for table `user` 

-- 
ALTER TABLE `user` 
ADD PRIMARY KEY (`name`); 
COMMIT; 

/*!40101 SET CHARACTER_SET_CLIENT=@OLD_CHARACTER_SET_CLIENT */; 
/*!40101 SET CHARACTER_SET_RESULTS=@OLD_CHARACTER_SET_RESULTS */; 
/*!40101 SET COLLATION_CONNECTION=@OLD_COLLATION_CONNECTION */;

```

1.14. Result

```

<?php include('navbar.php') ?>
<!DOCTYPE html>
<html>
<head>
    <title>
        <link rel="stylesheet" type="text/css" href="style.css">

    </title>
</head>
<body>
    <?php
        $db =mysqli_connect("localhost","root","","ovs");
        mysqli_select_db($db,'ovs');
        $query="SELECT * FROM count ";
        $v=mysqli_query($db,$query);

        $total=0;
        $i=0;
        $variable=array();

        while($vt =mysqli_fetch_array($v)){
            $variable[$i]=$vt["voteCount"];
            $total=$total+$variable[$i];
            $i=$i+1;

        }

        $v1=($variable[0]/$total)*100;
        $v2=($variable[1]/$total)*100;

```

```

$ v3=($variable[2]/$total)*100;
$ v4=($variable[3]/$total)*100;
$ v5=($variable[4]/$total)*100;

?>

<div class="red" style="width:<?php echo $v1; ?>% ; height:
100px;background:red;">

</div>
<div id="blue" style="width:<?php echo $v2; ?>% ; height:
100px;background:blue;">

</div>
<div id="green" style="width:<?php echo $v3; ?>% ; height:
100px;background:green;">

</div>
<div id="yellow" style="width:<?php echo $v4; ?>% ; height:
100px;background:yellow;">

</div>
<div id="orange" style="width:<?php echo $v5; ?>% ; height:
100px;background:orange;">

</div>

</body>
</html>

```

1.15. Poll

```

<?php

//poll.php

include('database_connection.php');

if(isset($_POST["poll_option"]))
{
$query = "
INSERT INTO tbl_poll
(phi_framework) VALUES (:phi_framework)
";
$data = array(
':phi_framework' => $_POST["poll_option"]
);

```

```

$statement = $connect->prepare($query);
$statement->execute($data);
}

?>

```

1.16. Contact PHP

```

<!DOCTYPE html>
<html>
<head>
    <meta name="viewport" content="width=device-width,initial-scale=1.0">
    <title>Contact Us</title>
    <link rel="stylesheet" type="text/css" href="cont.css">
    <link rel="stylesheet" href="https://stackpath.bootstrapcdn.com/font-awesome/4.7.0/css/font-awesome.min.css" integrity="sha384-wvfXpqZZVQGK6TAh5PVIOfQNHSoD2xbE+QkPxCAFINEevoEH3SI0sibVcOQVnN" crossorigin="anonymous">
</head>
<body>
    <section class="contact">
        <div class="content">
            <h2>Contact Us</h2>
            <p>Please send your queries/doubts so that we can help you</p>
        </div>
        <div class="container">
            <div class="contactInfo">
                <div class="box">
                    <div class="icon"><i class="fa fa-map-marker" aria-hidden="true"></i></div>
                    <div class="text">
                        <h3>Address</h3>
                        <p>SRM  
university,<br>KTR,<br>Chennai,India</p>
                    </div>
                </div>
                <div class="box">
                    <div class="icon"><i class="fa fa-phone" aria-hidden="true"></i></div>
                    <div class="text">
                        <h3>Phone</h3>
                        <p>1234567890</p>
                    </div>
                </div>
                <div class="box">
                    <div class="icon"><i class="fa fa-envelope-o" aria-hidden="true"></i></div>

```

```

        <div class="text">
            <h3>Email</h3>
            <p>srm@srmist.edu.in</p>

        </div>
    </div>
    <div class="contactForm">
        <form>
            <h2>Send Message</h2>
            <div class="inputBox">
                <input type="text" name="" required="required">
                    <span>Full Name</span>
            </div>
            <div class="inputBox">
                <input type="text" name="" required="required">
                    <span>Email</span>
            </div>
            <div class="inputBox">
                <textarea
                    required="required"></textarea>
                <span>Type your concern</span>
            </div>
            <div class="inputBox">
                <input type="submit" name="Send">
            </div>
        </form>
    </div>
</section>
</body>
</html>

```

1.17. Contact CSS

```

@import
url('https://fonts.googleapis.com/css2?family=Poppins:wght@200;300;400;500;600;700;800;900&display=swap');
*
{
    margin:0;
    padding:0;
    box-sizing:border-box;

```

```

font-family: 'Poppins',sans-serif;

}

.contact
{
    position:relative;
    min-height:100vh;
    padding:50px 100px;
    display: flex;
    justify-content:center;
    align-items: center;
    flex-direction: column;

}
.contact .content
{
    max-width: 800px;
    text-align:center;

}
.contact .content h2
{
    font-weight:300;

    /*color:#fff;*/
}
.container
{
    width:100%;
    display: flex;
    justify-content: center;
    align-items: center;
    margin-top:30px;

}
.container .contactInfo
{
    width:50%;
    display:flex;
    flex-direction: column;
}
.container .contactInfo .box
{
    position:relative;
    padding:20px 0;
    display:flex;

}

.container .contactInfo .box .icon

```

```

{
    min-width: 60px;
    height:60px;
    background: #ffff;
    display: flex;
    justify-content: center;
    align-items: center;
    border-radius: 50%;
    font-size: 22px;
}
.container .contactInfo .box .text
{
    display: flex;
    margin-left: 20px;
    font-size: 16px;
    /*color: #ffff;*/
    flex-direction: column;
    font-weight:300;
}
.container .contactInfo .box .text h3
{
    font-weight: 500;
    color: #00bcd4;
}
.contactForm
{
    width:40%;
    padding: 40px;
    /*background: #191919;*/
}

.contactForm h2
{
    font-size: 30px;
    color:#333;
    font-weight: 500;
}
.contactForm .inputBox
{
    position: relative;
    width:100%;
    margin-top: 10px;
}
.contactForm .inputBox .text
{
    color: #fff;
}
.contactForm .inputBox input,
.contactForm .inputBox textarea
{

```

```

        width:100%;
        padding:5px 0;
        font-size:16px;
        margin:10px 0;
        border:none;
        border-bottom: 2px solid #333;
        outline:none;
        resize:none;
    }
    .contactForm .inputBox span
    {
        position: absolute;
        left:0;
        padding: 5px 0;
        font-size: 16px;
        margin:10px 0;
        pointer-events: none;
        transition: 0.5s;
        color:#666;
    }
    .contactForm .inputBox input:focus ~ span,
    .contactForm .inputBox input:valid ~ span,
    .contactForm .inputBox textarea:focus ~ span,
    .contactForm .inputBox textarea:valid ~ span
    {
        color:#e91e63;
        font-size:12px;
        transform:translateY(-20px);
    }
    .contactForm .inputBox input[type="submit"]
    {
        width: 100px;
        background: #00bcd4;
        color:#fff;
        border:none;
        cursor:pointer;
        padding:10px;
        font-size: 18px;
    }
}
@media (max-width: 991px)
{
    .contact
    {
        padding:50px;
    }
    .container
    {
        flex-direction: column;
    }
}

```

```
.container .contactInfo
{
    margin-bottom: 40px;
}
.container .contactInfo,
.contactForm
{
    width:100%;
}
}
```

2. Result of Module 3

The image displays three screenshots of a Voting System application, likely built using PHP and MySQL, demonstrating the results of Module 3 development.

- Registration Screen:** A screenshot of a browser window showing the "REGISTER" form. It includes fields for Username, Email, Phone Number, Auxilary Number, Password, and Confirm Password, along with a "Register" button and a link for existing members.
- Login Screen:** A screenshot of a browser window showing the "LOGIN" form. It includes fields for Username and Password, a "Login" button, and a link for new members.
- Main Dashboard:** A screenshot of a browser window titled "Voting System". The sidebar menu includes links for Home, User Details, VOTE NOW!, Languages, Contact us, and Results. The main content area displays a welcome message: "You are now logged in Welcome Person 3" and a "Logout" button. Social media sharing icons (Facebook, Twitter, Google+, YouTube) are at the bottom.

Voting System

- Home
- User Details
- VOTE NOW!
- Languages
- Contact us
- Results

01 Candidate List
Click to see Candidate list

02 Elections Occurring Now
List of all elections occurring now

03 Results of the past elections
Results of all the past held elections



localhost/V/vote.php

ALREADY VOTED

Select the party you want to vote for and press submit.

Bharatiya Jantha Party

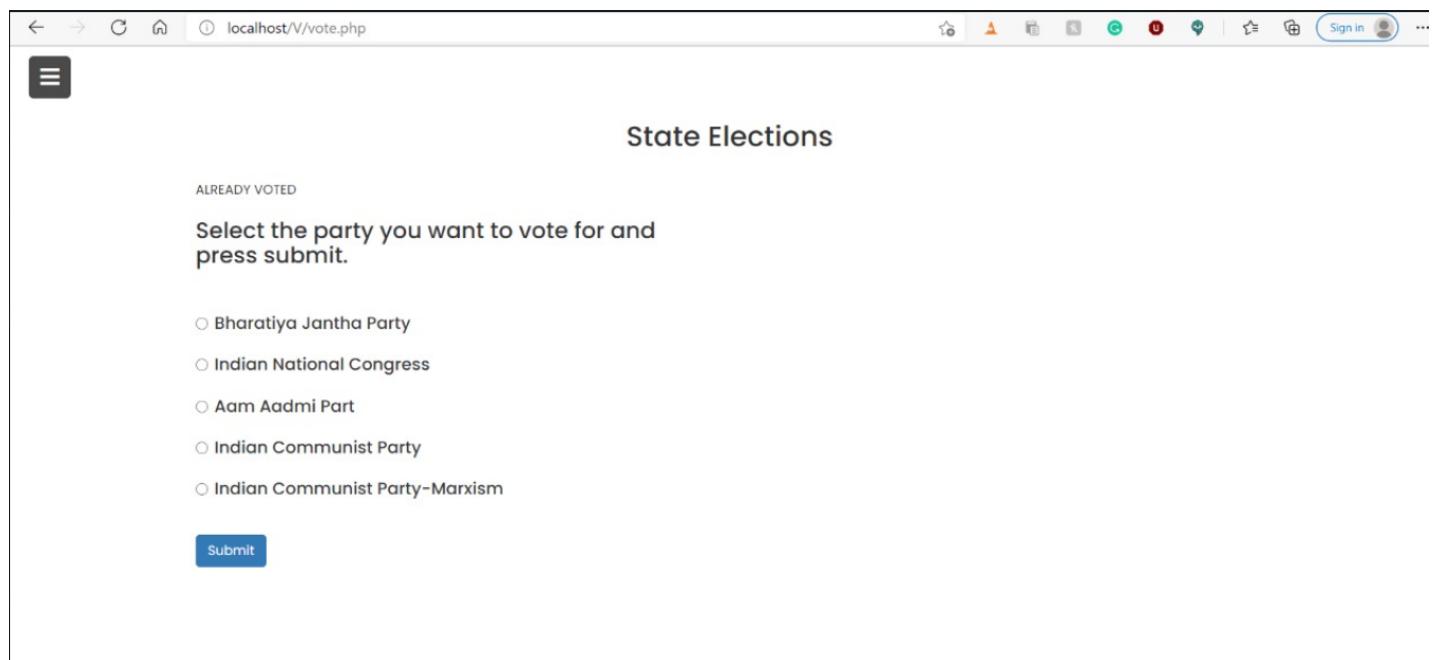
Indian National Congress

Aam Aadmi Part

Indian Communist Party

Indian Communist Party-Marxism

Submit



Contact Us

Please send your queries/doubts so that we can help you

Address  SRM university, KTR, Chennai,India	Phone  1234567890	Email  srm@srmist.edu.in
--	--	---

Send Message

Full Name

Email

Type your concern

Submit

Server: 127.0.0.1 » Database: ovs » Table: count

Table: count																																																
		Operations			Triggers																																											
		Browse	Structure	SQL	Search	Insert																																										
		Export	Import	Privileges	Operations	Tracking																																										
✓ Showing rows 0 - 4 (5 total, Query took 0.0009 seconds.)																																																
<pre>SELECT * FROM `count`;</pre>																																																
<input type="checkbox"/> Profiling Edit inline Edit Explain SQL Create PHP code Refresh																																																
<input type="checkbox"/> Show all Number of rows: 25		Filter rows: <input type="text"/> Search this table		Sort by key: <input type="text"/>																																												
+ Options																																																
<table border="1"> <thead> <tr> <th></th> <th></th> <th></th> <th>can</th> <th>votecount</th> <th></th> <th>id</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/></td> <td></td> <td></td> <td></td> <td>AAP</td> <td>3</td> <td>1</td> </tr> <tr> <td><input type="checkbox"/></td> <td></td> <td></td> <td></td> <td>BJP</td> <td>20</td> <td>2</td> </tr> <tr> <td><input type="checkbox"/></td> <td></td> <td></td> <td></td> <td>ICP</td> <td>4</td> <td>3</td> </tr> <tr> <td><input type="checkbox"/></td> <td></td> <td></td> <td></td> <td>ICPM</td> <td>2</td> <td>4</td> </tr> <tr> <td><input type="checkbox"/></td> <td></td> <td></td> <td></td> <td>INC</td> <td>0</td> <td>5</td> </tr> </tbody> </table>										can	votecount		id	<input type="checkbox"/>				AAP	3	1	<input type="checkbox"/>				BJP	20	2	<input type="checkbox"/>				ICP	4	3	<input type="checkbox"/>				ICPM	2	4	<input type="checkbox"/>				INC	0	5
			can	votecount		id																																										
<input type="checkbox"/>				AAP	3	1																																										
<input type="checkbox"/>				BJP	20	2																																										
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<input type="checkbox"/>				INC	0	5																																										
← ↑ <input type="checkbox"/> Check all With selected:																																																
<input type="checkbox"/> Show all Number of rows: 25		Filter rows: <input type="text"/> Search this table		Sort by key: <input type="text"/>																																												
Query results operations																																																
 Print Copy to clipboard Export Display chart Create view																																																
 Bookmark this SQL query																																																
Label: <input type="text"/> <input type="checkbox"/> Let every user access this bookmark																																																

The screenshot shows the MySQL Workbench interface with the following details:

- Server:** 127.0.0.1
- Database:** ovs
- Table:** user
- Query Result:** Showing rows 0 - 9 (10 total, Query took 0.0006 seconds.)
- SQL Query:** SELECT * FROM `user`;
- Table Headers:** name, email, phone, aadhar, pass, flag
- Data Rows:** 10 rows of data, each with columns: name (Person 1 to Person 10), email (person1@gmail.com to person10@gmail.com), phone (1234567890 to 2147483647), aadhar (1234567890 to 2147483647), pass (123 to 123), and flag (0 to 1).
- Operations:** Buttons for Show all, Number of rows (25), Filter rows, Search this table, Sort by key (None), and various row-level actions (Edit, Copy, Delete).
- Bottom Buttons:** Check all, With selected, Edit, Copy, Delete, Export.
- Query results operations:** Print, Copy to clipboard, Export, Display chart, Create view.

Result:

Thus, Module 3 was implemented and documented successfully.



DEPT. Of Computer Science Engineering

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	11
Title of Experiment	Master Test Plan, Test Case Design
Name of the candidate	Shravya Sharan
Team Members	Prachet Balaji, Karthik Menon
Register Number	RA1911026010055
Date of Experiment	05-05-2021

Mark Split Up

S. No	Description	Maximum Mark	Mark Obtained
1	Test Plan	5	
2	Test Case	5	
Total		10	

Staff Signature with date

Aim:

To prepare master test plan and test cases for testing the project.

Team Members:

Sr No	Register No	Name	Role
1	RA1911026010055	Shravya Sharan	Lead
2	RA1911026010054	Karthik Menon	Member
3	RA1911026010053	Prachet Balaji	Member

Project Title:

Online Voting Management System

Test Plan and Test Case

Lab Session #11

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1. Executive Summary

Online voting is often seen as a tool for advancing democracy, building trust in electoral management, adding credibility to election results and increasing the overall efficiency of the electoral process. The Online Voting Management Systems Project is an unprecedented project premised on a collaborative approach that ensures greater citizen input through partnerships within the academic community, public interest organizations, and with policy makers, in the pursuit of establishing a voting system development model that is collaborative and transparent - and which is founded on sound data.

Human errors can cause a defect or failure at any stage of the software development life cycle. The results are classified as trivial or catastrophic, depending on the consequences of the error. The requirement of rigorous testing and their associated documentation during the software development life cycle arises to identify defects and reduce flaws in the component or system thereby increasing the overall quality of the system.

There can also be a requirement to perform software testing to comply with legal requirements or industry-specific standards. These standards and rules can specify what kind of techniques should we use for product development.

This document describes the plan for testing the Online Voting Management System. This Test Plan document identifies existing project information and the software that should be tested and describe the testing strategies to be employed as well as identify the required resources and list the deliverable elements of the test activities.

This stage of software development involves execution of software and system components using manual or automated tools to evaluate one or more properties of interest. The purpose of software testing is to identify errors, gaps or missing requirements in contrast to actual requirements.

Software Testing is important because if there are any bugs or errors in the software, it can be identified early and can be solved before delivery of the software product. Properly tested software product ensures reliability, security and high performance which further results in time saving, cost effectiveness and customer satisfaction.

2. Test Plan

2.1. Scope of Testing

Online Voting Management System was put through a series of tests with the specific intent of finding any errors prior to delivery to the end user. This Test Plan describes the tests that will be conducted on the online voting management system following integration of the subsystems and components.

The purpose of assembling the prototype is to test feasibility and performance of the software. It is critical that all system and subsystem interfaces be tested as well as system performance at this stage.

2.2. Types of Testing, Methodology, Tools

1. Online Voting Management System will undergo the following testing procedures:
 - a. Unit Testing –
 - i. Concentrates on each component/function of the software as implemented in the source code.
 - ii. Methodology –
 - White Box Testing – Check individual codes against test cases.
 - Black Box Testing – Check output for given input.
 - Gray Box Testing – Check for exceptions.
 - iii. Tools – JAMPIT, EMMA, XAMP, DBMS
 - b. Integration testing –
 - i. Focuses on the design and construction of the software architecture and the linking between separate components.
 - ii. Methodology –
 - Sandwich Testing – Check linking between voting, admin and login and registration module.
 - Incremental Top-Down Testing – Check linking between all modules starting from login and registration until final voting module.
 - iii. Tools – XAMPP, DBMS
 - c. System Testing –
 - i. The software and other system elements are tested as a whole.
 - ii. Methodology –

- Usability Testing – Check if the system is user-friendly.
- Regression Testing - Check for any errors developed due to updating modules.
- Recovery Testing – Check for system failures and loss of data due to system crashes.

iii. Tools – XAMPP, DBMS, CSS

d. Validation Testing –

i. Requirements are validated against the constructed software.

ii. Methodology –

- Alpha Testing – Performed by the developer to check whether voting module is working as per customer requirements or not.
- Beta Testing – Performed by users who provide feedback on the entire software usage experience.

iii. Tools - Watir

2.3. Test Deliverables

1. Test Plan
2. Test Environment
3. Test Suite
4. Test Data Sets
5. Test Scripts
6. Test Stubs, Drivers
7. Test Defect Reports
8. Test Results
9. Test Evaluation Report

3. Test Case

3.1. Functional Test Case

1. Login and Registration Module

Test ID (#)	Test Scenario	Test Case	Execution Steps	Expected Outcome	Status
#T1	Verify User Login	Accept the user login if username and password match	1.User clicks on login. 2.He enters the username and password. 3.Clicks on the login button.	User should be redirected to the index page where his dashboard is shown	Successful
#T2	Verify User Registration	User is prompted to enter details to register. All Details must be entered and both the passwords should match.	1.User clicks on register 2.He enters all the required details 3.He clicks on register	If details are entered correctly then the data is stored in the database and user is redirected to login page	Successful

2. Voting Module

Test ID (#)	Test Scenario	Test Case	Execution Steps	Expected Outcome	Status
#T1	Voting process	User is prompted to vote for one of the options given.	1.User clicks on Vote now in the nav bar 2.He clicks on the option he wants to vote for 3.Clicks on Vote button	If Valid user, the vote is counted into the database.	Successful
#T2	Verify User	If User has already voted, he will not be allowed to vote again	1.User has already voted 2.User clicks on Vote now in the nav bar 3.He clicks on the option he wants to vote for 4.Clicks on Vote button	If the user has already voted then he is prompted with the message "Already Voted"	In progress

3. Admin Module

Test ID (#)	Test Scenario	Test Case	Execution Steps	Expected Outcome	Status
#T1	Admin Login	Admin enters his username and password and selects the admin checkbox	1.Admin clicks on login 2.Admin enters his login details. 3.Admin clicks on the admin checkbox 4.Admin clicks on login	If Valid admin, he is redirected to the admin side.	Successful
#T2	Admin view results.	Admin can view the live results of the ongoing elections	1.Admin clicks on the results tab in the navigation bar.	Admin is shown the results in different formats (tables graphs)	Successful
#T3	Admin can add or remove candidates	Admin can remove or add candidates	1.Admin clicks on the add or remove candidates 2.He is redirected to database where he can make the necessary changes	Admin can add or remove candidates from the database and make changes to the form	Successful

3.2. Non-Functional Test Case

Test Case #	Test Case	Domain	Status
#N1	Application load time should not be more than 5 secs up to 1000 users accessing it simultaneously	System Testing	Successful
#N2	Software should be installable on all versions of Windows and Mac	Acceptance Testing	In Progress
#N3	People can simultaneously login into a software.	System and Integration Testing	Successful

4. Report

1. Objective – To test feasibility and performance of the software.
2. Areas Tested – Code, Login and Register Module, Voting Module, Admin Module and System performance.
3. Areas Not Tested – Scalability
4. Testing Metrics –
 - a. Login and Registration Module = 100%
 - b. Voting Module = 95%
 - c. Admin Module = 100%
 - d. System Performance = 80%
 - e. Defect Report = In progress
5. Summary – All codes and functions of the software were individually tested (unit testing). The module and their interaction in terms of data exchange was tested successfully. (Integration and System Testing). The Users' test cases and feedback were executed and accepted successfully.

Result:

Thus, the test plan and test cases are documented successfully.



DEPT. Of Computer Science Engineering

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	12
Title of Experiment	Manual Testing with report
Name of the candidate	Shravya Sharan
Team Members	Prachet Balaji, Karthik Menon
Register Number	RA1911026010055
Date of Experiment	05-05-2021

Mark Split Up

S. No	Description	Maximum Mark	Mark Obtained
1	Manual Testing	5	
2	Report	5	
Total		10	

Staff Signature with date

Aim:

To conduct manual test using Test cases and prepare test report for the project.

Team Members:

Sr No	Register No	Name	Role
1	RA1911026010055	Shravya Sharan	Lead
2	RA1911026010054	Karthik Menon	Member
3	RA1911026010053	Prachet Balaji	Member

Project Title:

Online Voting Management System

Manual Testing with Report

Lab Session #12

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1. Executive Summary

Online voting is often seen as a tool for advancing democracy, building trust in electoral management, adding credibility to election results and increasing the overall efficiency of the electoral process. The Online Voting Management Systems Project is an unprecedented project premised on a collaborative approach that ensures greater citizen input through partnerships within the academic community, public interest organizations, and with policy makers, in the pursuit of establishing a voting system development model that is collaborative and transparent - and which is founded on sound data.

Human errors can cause a defect or failure at any stage of the software development life cycle. The results are classified as trivial or catastrophic, depending on the consequences of the error. The requirement of rigorous testing and their associated documentation during the software development life cycle arises to identify defects and reduce flaws in the component or system thereby increasing the overall quality of the system.

There can also be a requirement to perform software testing to comply with legal requirements or industry-specific standards. These standards and rules can specify what kind of techniques should we use for product development.

This document describes the plan for testing the Online Voting Management System. This Test Plan document identifies existing project information and the software that should be tested and describe the testing strategies to be employed as well as identify the required resources and list the deliverable elements of the test activities.

This stage of software development involves execution of software and system components using manual or automated tools to evaluate one or more properties of interest. The purpose of software testing is to identify errors, gaps or missing requirements in contrast to actual requirements.

Software Testing is important because if there are any bugs or errors in the software, it can be identified early and can be solved before delivery of the software product. Properly tested software product ensures reliability, security and high performance which further results in time saving, cost effectiveness and customer satisfaction.

2. Test Plan

2.1. Scope of Testing

Online Voting Management System was put through a series of tests with the specific intent of finding any errors prior to delivery to the end user. This Test Plan describes the tests that will be conducted on the online voting management system following integration of the subsystems and components.

The purpose of assembling the prototype is to test feasibility and performance of the software. It is critical that all system and subsystem interfaces be tested as well as system performance at this stage.

2.2. Types of Testing, Methodology, Tools

1. Online Voting Management System will undergo the following testing procedures:
 - a. Unit Testing –
 - i. Concentrates on each component/function of the software as implemented in the source code.
 - ii. Methodology –
 - White Box Testing – Check individual codes against test cases.
 - Black Box Testing – Check output for given input.
 - Gray Box Testing – Check for exceptions.
 - iii. Tools – JAMPIT, EMMA, XAMP, DBMS
 - b. Integration testing –
 - i. Focuses on the design and construction of the software architecture and the linking between separate components.
 - ii. Methodology –
 - Sandwich Testing – Check linking between voting, admin and login and registration module.
 - Incremental Top-Down Testing – Check linking between all modules starting from login and registration until final voting module.
 - iii. Tools – XAMPP, DBMS
 - c. System Testing –
 - i. The software and other system elements are tested as a whole.
 - ii. Methodology –

- Usability Testing – Check if the system is user-friendly.
- Regression Testing - Check for any errors developed due to updating modules.
- Recovery Testing – Check for system failures and loss of data due to system crashes.

iii. Tools – XAMPP, DBMS, CSS

d. Validation Testing –

- i. Requirements are validated against the constructed software.
- ii. Methodology –
 - Alpha Testing – Performed by the developer to check whether voting module is working as per customer requirements or not.
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#T2	Verify User Registration	User is prompted to enter details to register. All Details must be entered and both the passwords should match.	1.User clicks on register 2.He enters all the required details 3.He clicks on register	If details are entered correctly then the data is stored in the database and user is redirected to login page	Successful

2. Voting Module

Test ID (#)	Test Scenario	Test Case	Execution Steps	Expected Outcome	Status
#T1	Voting process	User is prompted to vote for one of the options given.	1.User clicks on Vote now in the nav bar 2.He clicks on the option he wants to vote for 3.Clicks on Vote button	If Valid user, the vote is counted into the database.	Successful
#T2	Verify User	If User has already voted, he will not be allowed to vote again	1.User has already voted 2.User clicks on Vote now in the nav bar 3.He clicks on the option he wants to vote for 4.Clicks on Vote button	If the user has already voted then he is prompted with the message "Already Voted"	In progress

3. Admin Module

Test ID (#)	Test Scenario	Test Case	Execution Steps	Expected Outcome	Status
#T1	Admin Login	Admin enters his username and password and selects the admin checkbox	1.Admin clicks on login 2.Admin enters his login details. 3.Admin clicks on the admin checkbox 4.Admin clicks on login	If Valid admin, he is redirected to the admin side.	Successful
#T2	Admin view results.	Admin can view the live results of the ongoing elections	1.Admin clicks on the results tab in the navigation bar.	Admin is shown the results in different formats (tables graphs)	Successful
#T3	Admin can add or remove candidates	Admin can remove or add candidates	1.Admin clicks on the add or remove candidates 2.He is redirected to database where he can make the necessary changes	Admin can add or remove candidates from the database and make changes to the form	Successful

3.2. Non-Functional Test Case

Test Case #	Test Case	Domain	Status
#N1	Application load time should not be more than 5 secs up to 1000 users accessing it simultaneously	System Testing	Successful
#N2	Software should be installable on all versions of Windows and Mac	Acceptance Testing	In Progress
#N3	People can simultaneously login into a software.	System and Integration Testing	Successful

4. Defect Log

Requirement	Defect ID #	Defect Description	Status
To Login as user or admin, has to select the checkbox admin or user	TC01	The person is logged in as user or admin	PASS
The user cannot vote multiple times	TC03	Person is prompted with a message ("Already Voted")	PASS
The user password is hidden in the database	TC03	Account of the user should be hidden.	IN PROGRESS

5. Test Report

1. Objective – To test feasibility and performance of the software.
2. Areas Tested – Code, Login and Register Module, Voting Module, Admin Module and System performance.
3. Testing Metrics –
 - a. Login and Registration Module = 100%
 - b. Voting Module = 95%
 - c. Admin Module = 100%
 - d. System Performance = 80%
 - e. Defect Report = 80%
4. Summary – All codes and functions of the software were individually tested (unit testing). The module and their interaction in terms of data exchange was tested successfully. (Integration and System Testing). The Users' test cases and feedback were executed and accepted successfully.

Category	Progress Against Plan	Status
Functional Testing		
Verify User Login	Green	Successful
Verify User Registration	Green	Successful
Voting Process	Green	Successful
Verify Voter	Amber	In progress
Admin Login	Green	Successful
View Result	Green	Successful
Add/Remove Candidates	Green	Successful
Non-Functional Testing		
Load time	Green	Successful
Installation on OS	Red	Not Started
Multi User	Green	Successful

Functional	Test Case Coverage (%)	Status
Module 1 – Login and Registration	100%	Completed
Module 2 – Voting Client	95%	In progress
Module 3 – Admin Client	100%	Completed
Module 4 – Dashboard	90%	In progress

Result:

Thus, the software test was conducted and documented the report successfully.