**CHAPTER 1**

**INTRODUCTION**

* 1. **Background**

“Corporate” is a company or group of people authorized to act as a single entity organization to deliver on its mission, Webster (2012). KTDA as an example is a company that manages several tea factory companies in Kenya. These factories are given mandate to manage tea cultivation, develop and maintain tea husbandry, collect, weigh, handle and pay farmers for green leaf delivered, manufacture green leaf into tea, market the manufactured tea, develop and provide technical, financial and managerial infrastructure, provide services in procurement, ICT, human Resources and other support services KTDA Laws, (2012).

According to KTDA by laws (2012) the company is managed by a board of directors elected by and from among the growers of the specific factory catchment. These Factory Company Boards are responsible for policies, which govern; contracting management agents, management decisions with respect to procurement of goods and services for their respective factory, recruitment of employees, formulation of annual budgets and monitoring of financial expenditures, leaf collection and payments to farmers and governance and policy making.

According Thompson (2011) “Corporate voting system” is technique in which shareholder holders of a company vote for director without going to the polling stations. The advantage of this system is, it reduces time wastage going to voting center since election time may take the whole day(you can vote at own time), Reduced congestion, it minimize voting counting errors. For these case, there will be a database in which maintained and contain shareholder personal data stored. Each shareholder is required to create account by providing user name and password.

Online Voting ensure that shareholder participate in the process conveniently and reduce overall cost as well as time wastage. This system will also fasten the process of computing the results by minimizing human counting errors.

Voting over the internet is appealing in that with the availability of cheap smartphone, computers, tablets and IPad, people are getting more and more used to these devices in carrying out day to day operations such mobile banking, digital financial services, shopping, social media hence will enable to vote at free time anywhere, everywhere conveniently.

* 1. **Problem Statement**

It is worth noting that dominated (and insincere) behavior is quite frequent, especially when the voting system allows voters to cast more than a single vote or to rank the alternatives. **Bassi article (2014)**

The voting process in corporate sections is a cumbersome process, it is conducted manually that is shareholders (voters) are supposes to converge in one place, and the queue for voter list verification, Internet society ISOC by-Laws (2012). Tallying is manually counted and the results are announced by the presiding officer. This process has faced some shortcomings such as missing of voters details in the master file or case of unqualified voters participate in the voting process. Even after voting, cases of polling clerk manipulate the figures in favor of certain candidate has been reported. The release of these incredible results leads to incompetence, mismanagement in most organizations. Such case can be gap through the use of Corporate Voting Systems. The voters will be able to vote conveniently and securely.

**1.3 Objectives**

The following are the objectives that lead to studying of this project;

* + 1. **General Objective**

The objective of this system is to develop a computerized voting system that will manage and tally votes and to ensure convenience and accountability of election process.

**1.3.2 Specific Objectives**

The following are specific objectives which lead to studying of this project;

1. To review the current voting methods or approach in a corporate section.
2. To develop a online voting system which will monitor and manage voting process
3. To validate the system to ensure that it is in line with company’s stated objectives.

**1.4 Research Questions**

1. Which are the current methods of voting in corporate sector?
2. Can the development of online voting system efficiently monitor voting process and increase participation?
3. What will be the performance of the new system in relation to the current practices at corporate sector?

**1.5 Hypothesis**

The use of mobile application system for corporate voting will efficiently monitor and limit all case of voting irregularities.

**1.6 Project Justification**

Corporate voting system (CVS) will reduce the time to travel to polling station, time spent in long queue. It will enable voters to vote anywhere, anytime since the application will be available on the web. Case of incorrect tallying of votes will be solving because of right functionality implemented and strong database to store and retrieve data as requested. It will also reduce the voter’s coercion since voters will not converge in one place.

**1.7Significant of Study**

The main purpose of Corporate Voting systems is to provide an improved voting process through fast, timely and convenient voting, to reduce overall costing of conducting election through employee of clerks, transport expense and procurement of paper work materials, to ensure that qualified voters are allowed to vote and Vote Only Once.

**1.8Scope of the study**

The study will focus on the existing system of voting in a corporate sector and to make sure that voters participate in the process conveniently for fairness and transparency of election. This will reduce time waste and labor intensive which are the primary cost, to manage and run secure web voting process.

**1.9 Limitation of study**

Demographic factor is one of the barriers; this project will focus on KTDA though it can be implemented in other organizations that have the same practice. Time factor also play a key role since the project had to be done within the short time.

* + 1. **Important Terms**
* CVS- Corporate Voting system
* KTDA- Kenya Tea Development Agency

**CHAPTER 2**

**LITERATURE REVIEW**

**2.1 Introduction**

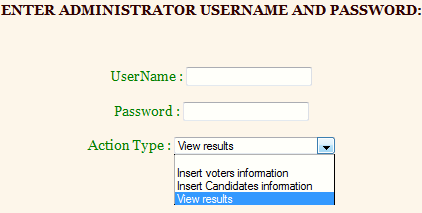
Some studies have been carried out in this field of voting methods. Similarly, many systems have been developed in the efforts to cope with the current level of technology and to satisfy the increasing demand better way of managing and analyzing the results. The purpose of this document is to provide the reader with up to date account and discussions of the research findings in this field of Online voting system.

**2.1.1 System Review**

Online voting system by Tabra **(2013)** was implemented using including: HTML, JavaScript, and CSS to create the registration forms and to build the website layouts. The other languages used are PHP and MYSQL, which create the system databases and store, edit and retrieve data from databases. The voting system designed based on open list voting; where voters can choose to give their votes to a specific political group or to a specific candidate.



**Figure 2.1Voting System Home Page**

The administrator is responsible for entering the voters and candidates information to the database. Also the administrator can view the voting results. All system databases are protected by password which is only known by system administrator.

**Figure 2.2Administrative Login**

All voters should be registered in the database before the election date. On the Election Day, voters will enter their information and password on the voters’ registration form as show in figure 2.3, if the information is correct; the voters enter the form where they can select a specific political group or candidate to vote for as in else if any incorrect information were added, the user will not be allowed to vote.

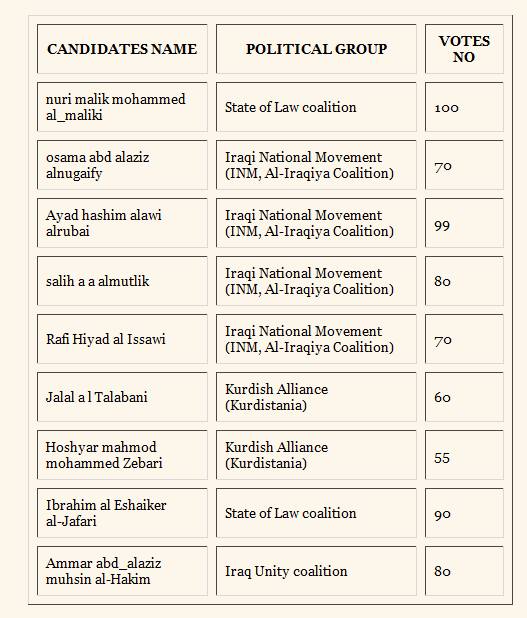


**Figure 2.3 Registration form**



**Figure 2.4 Candidate list form**

The system will count the total number of votes for each candidate and display automatically. Below sample of the voting results of all the candidates participate in the elections.



**Figure 2.5 Candidate results display**

**2.1.2 An efficient and secure mobile voting system**

Ulla (2013) describe voting system using mobile phone device which is small in size, low power, low-priced as compared to computers and Direct Recording Electronic voting system (DRE’s), Electronic Voting Machine’s (EVM’s), as they provide mobility feature (can be used ubiquitously) and security (can be access in a temper resistant environment making it less vulnerable to external attacks). Proposed system uses Global System for Mobile. Communication (GSM) technology which is a secure and global used mobile technology in the current situation. Mobile phone also uses Subscriber Identity Module (SIM) technology which provides user identity privacy, user identity verification and subscriber data secrecy and security.

**2.1.3 Real World Electronic system for Mobile Phone**

Real electronic system for mobile phone Yi (2011) is a real-world electronic voting system for mobile phone the Idea is to merge mix network and blind signature protocols and blindly authorizing each vote twice. Voter verification is achieved by collaboration of SIM card and identity card (IC) fixed in mobile phone with dual SIM card holder. The good thing about the framework it consist of servers which are reliable and tampered proof. During polling period voters reminded by SMS to cast their votes to election commission. When voting ended, election commission shows all votes in lexicographic order. Mix server collects all votes and confirms their signs. If signs are real then decrypt votes by their private key.

**2.1.4 Lakhotia Mobile phone voting uses global system for mobile**

As per Lakhotia (2012) this mobile phone voting uses global system for mobile (GSM) communication technology where GSM verification system used to provide voter confirmation, enhanced security, and voter mobility and reduce public-key overhead. It use protocol that has three stages: Pre voting stage, voting stage and post voting stage. In pre voting stage when user wishes to vote, presses “Vote” button assumes to be exist on the set. Base station instructs user through SMS to switch off their mobile phone. Switching on again by pressing “vote” button, mobile phone will reserved only for voting purposes and no outgoing and incoming call can be received on that mobile phone. When authentic voter cast their vote will get SMS from EC having list of candidates, their parties name and symbols. User has to simply reply to this SMS.

**2.1.5 Voting system using Public Key encryption Algorithm**

Hayam (2011) suggested mobile phone voting system using public key encryption algorithm RSA. Protocol involves three phases: access control phase; voting phase and election administrator server phase. First phase holds validation and identification for the applied voters. Voting phase accomplished by ciphering voter data using RSA algorithm while the election administrator server phase classifies ending result by decrypting received encrypted data using RSA private key. However, such System has shortcomings like no online registration and high computational cost and communication overhead due to RSA algorithm.

**2.1.6 Voting systems and strategic manipulation: An experimental study**

Bassi article (2014) presents experiments that analyze the strategic behavior of voters under three voting systems: plurality rule, approval voting, and the Borda count. Applying a level-*k* reasoning model approach, strategic behavior is found to be significantly different under each treatment (voting system). Plurality rule leads voters to play in the most sophisticated (i.e. best response), but not necessarily insincere, manner. Thus, this voting system displays at the same time the highest incidence of best responses and of sincere votes. The opposite holds for the Borda count games, where voters depart from their sincere strategy the most, without playing the best response strategy. The experimental findings suggest that subjects systematically engage in strategic reasoning, and that ‘simple’ voting mechanism, like plurality voting, allow them to successfully select the best response strategy in one or two levels of strategic reasoning. It is worth noting that dominated (and insincere) behavior is quite frequent, especially when the voting system allows voters to cast more than a single vote or to rank the alternatives.

**2.1.7 Implementation of Authenticated and Secure Online Voting System**

Srivatsan (2013) propose a voting system which provide a cost effective solution to the government along with ensuring non-traceability and integrity of the votes cast while providing great convenience to voters. The systems ensure that all eligible voters having a Universal Identification Number of their country (For Example the Smart Card in USA) is allowed to cast their respective vote. The voters, who wish to cast multiple will be. Also to ensure the maintenance of authenticity, any biometric identification of the voters could be used for accessing the terminal to cast their vote and restricting them to cast again.

**2.1.8 Mercuri method**

Mercuri **(2010)** invented the “Mercuri method” for electronic voting. A Voting machine must produce human-readable hardcopy paper results, which can be verified by the voter before the vote is cast, and manually recounted later if necessary.

**2.1.9 Voter verification using encrypted paper receipts**

A popular author Chaum (2005) presents a very interesting scheme whereby voters could get receipts for their votes. This receipt would allow them to know if their votes were included in the final tally or not, and to prove that they voted without revealing any information about how they voted. The security of this scheme depends on visual cryptography developed by Naor and Shamir, and on voters randomly choosing one of the two pieces of paper.

**2.2 Assessment of voting process**

The NSF Internet Voting Report **(2015)** analyze the feasibility of different forms of Internet voting from both the technical and social science perspectives, and defines a research agenda to pursue if Internet voting is to be viable in the future. It group internet voting into three general forms as follows.

1. **Poll-site Internet voting**: It offers the promise of greater convenience and efficiency in that voters could cast their ballots from any poll site, and the tallying process would be both fast and certain. More importantly, since election officials would control both the voting platform and the physical environment, managing the security risks of such systems is feasible.
2. **Kiosk voting:** Voting machines would be located away from traditional polling places, in such convenient locations as public parks malls, libraries, or schools. The voting platforms would still be under the control of election officials, and the physical environment could be modified as needed and monitored (e.g.by election officials, volunteers, or even cameras) to address security and privacy concerns, and prevent coercion or other forms of intervention
3. **Remote Internet voting:** It seeks to maximize the convenience and access of the voters by enabling them to cast ballots from virtually any location that is Internet accessible. While this concept is attractive and offers significant benefits, it also poses substantial security risks and other concerns relative to civic culture. Current and near-term technologies are inadequate to address these risks.

The report presents some findings on the feasibility of each of these categories and provides research recommendations for the long-term future. It then identifies criteria for election systems. Finally, it addresses the technological issues (including voting system vulnerabilities, reliability, testing, certification and standards, specifications of source code, platform compatibility, secrecy and non-forcibility, etc.) and social science issues (such as voter participation, voter access, the election process, voter information, deliberative and representative democracy, community and character of elections, distribution of roles, legal concerns, voter registration, etc.)

**2.3 Evaluation of Voting Equipment Widely Adopted**

In the recent years, different voting equipment has been adopted and these are divided into the following forms**.** Ballotpedia (**2016**).

1. **Punch card**: the voter uses metallic hole-punch to punch a hole on the blank ballot .it can count votes automatically, but if the voter’s perforation is incomplete, the results are probably determined wrongfully.
2. **Optical voting machine:** After each voter fills a circle corresponding to their favorite candidate on the blank ballot, this machine selects the mark on each ballot for the vote then computes the total results. This kind of machine counts up ballot rapidly. However, if the voter fills over the circle, it will lead to the error results of optical-scan.
3. **Paper-based voting**: The voter gets a blank ballot and use a pen or a marker to indicate he want to vote for which candidate. Hand-counted ballot is time and labor consuming process, but it is easy to manufacture paper ballots and the ballots can be retained for verifying, this type is still the most common want to vote.
4. **Lever voting machine:** Lever machine is peculiar equipment, and each lever is assigned for a corresponding candidate. The kind of voting machine can count up the ballot automatically. Because its interface is not user-friendly enough giving some training to voters is necessary.
5. **Direct recording electronic voting machine**: this type is integrate with the keyboard, touchscreen, or buttons for the voter press to poll. Some of the lay in voting records and counting votes is very quickly. However, keeping voting records are doubted about accuracy.

**2.4 Security Threat of Corporate Voting System**

Foreign experiences revealed that they are often confronted by security issues while the online voting system is running. The origin of security issues happened was due to not only outsider (such as voters and attackers) but also insider (such as system developers and administrators) and, even just because the inheritance of some objects in the source code is unsuitable. These errors caused the voting system crashed.

The proposed solutions were correspondingly outlined to hold back these attacks **.**For example avoid hacker making incursion into the voting system via network, we can design our system to transmit data without network. Another example is to limit voter to input particular data, so that preventing the commands injections from running.

**2.5 Summary**

Different voting system gives desirable results though it might face some minor challenges. However, corporate voting system is seen to be more convenient and appropriate since it require less man power and tempered proof. The effective of this E-Voting has been officially used for elections and it has been witness in some counties like, America, Japan, Belgium, Brazil.

**CHAPTER 3**

**SYSTEM DESIGN AND ANALYSIS**

* 1. **Introduction**

Software requirement specification (SRS) is a designers understanding in writing of a potential client’s system requirements and dependencies at a particular point in time prior to any actual design or development work. This assures that both the client and the software designer understand the other’s requirements from that perspective at a given point in time.

This document clearly puts down the requirements of this system giving clear picture of what is expected at the end of the project. It is intended to give a guideline to the developer of the tasks.

To the user it is what the user wants out of the project. Users can consider this project as a success on meeting the requirements. The implementation requirements as well as product functionality that is desired is also highlighted in this document. The SRS document contains software requirements for KTDA corporate voting system and describes the design decisions, architectural design. More specifically the purpose of this chapter is to;

1. Identify some of the system development methodology & data collection that will be used.
2. Establish the major requirements necessary to develop the system so as to be able to do any necessary estimates concerning the budget and time limits.
3. Identify the tools to be used during the requirements elicitation process
4. Identify some of technology framework, interaction styles and interaction devices to be used to come up with a standard system which suits all the users.

**3.2 System Development Methodology**

**3.2.1 Rational Unified Process**

The Rational Unified Process (RUP) attempts to capture many of modern software development's best practices in a form suitable for a wide range of projects and organizations. RUP takes advantage of the following six best software deployment practices. In each phase these best practices are considered.

1. Develop software iteratively
2. Manage requirements
3. Use component-based architectures
4. Visually model software
5. Verify software quality
6. Control changes to software

The rational unified process has four phases namely:***Inception*, *Elaboration*, *Construction and Transition*.**

1. **Inception phase**

At this phase identifying of the initial scope of the project, a potential architecture for the system, and obtain initial project funding and stakeholder acceptance is done. The outcome of this phase include **project plan**, **business model** and coming up with prototype. It is the stage where the identification of the project idea is done, presentation of the idea to the supervisor and approval of the project idea, definition of the scope of the project and defined the objectives of the system.

1. This stage is also examine economic feasibility to determine whether it can be developed with the available resources,
2. Also schedule feasibility to know if the time available will be enough to develop the system.
3. Operational feasibility to ascertain if the project which solve the current problems and lead to its adoption in the running of the corporate activities.
4. **Elaboration**

This is the phase where the problem at hand is analyzed, identified the major functionalities of the system and how they will work together.

It is at this phase also that review of the new system to be developed is evaluated against the current methods being used as stated in objective in chapter 1.

Some of the functional and non-functional activities of the system to be implemented system is evaluation will be elaborated in details.

F**unctional and non-functional of the propose system**

* + 1. **User Validation and Authentication.**

The system should be able to accept users’ inputs, register and validate every user login process to check if it’s authorized, then allow access to the database. In this system the users are categorized into users, authorized and the administrator. This ensures security of the data stored in the database

* + 1. **Data selection and Storage.**

The system should enable the users to select data and information from the list of choice. The data can then be stored in the respective tables in the database. This system is able to accept and store data as per the user executions.

* + 1. **Data Retrieval.**

All records should be stored in the database. Admin can query the system for database based on the information required. The user shall be able to view the results instantly as exercise continues.

* + 1. **Data Manipulation**

Administrator is only authorized to add, update and modified the information in the system, information includes, authenticating the votes IDs, registering and updating Candidate information.

* + 1. **Error Reporting and Recovery**

The system is supposed produce an error message on the URL incase inappropriate data is being entered by user e.g. unmatched usernames and passwords. The system should also be able to handle errors after they occur. Administrator is authorized to back up the data and recovery the data in case the system crush.

* + 1. **Report Generation and projection**

The system is supposed to generate reports requested by user, analysis of the information requested and prediction of the future requirements report.

1. **Construction phase**

During the construction phase, all remaining components and application features are developed and integrated into the product, and all features are thoroughly tested.

This is the phase where development of the different modules of the system, interface design, testing of the different modules separately, integration of the modules and performing of the tests after the integration. The unit testing, and System testing will be done at this phase.

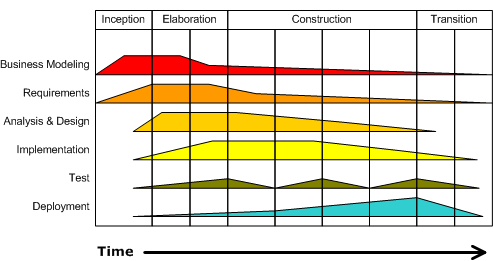
1. **Transition phase**

Validate and deploy the system into a live server. This is the phase where perform acceptance testing, create a setup of the system, documentation of the project and install the setup in a device.

The tools necessary at this stage are

1. Server/Desktop – This is where application will be hosted. And should have RAM: 2GB, Database Space:10GB, CPU: Intel core 2
2. Smartphone, Desktop, Tablet, IPad – For testing responsiveness of the system.
3. Printer – for printing of the reports.
4. Flash disk (4 GB) –for set up transfer

This is the stage of which evaluation of the system will be done against the objectives as specified in chapter 1. The ability of the system to monitor and project the requirements of the institution will be considered a success of the project.



**Figure 3.6- Rational Unified Process**

* + 1. **Justification of Methodology**

The RUP process recognizes that the traditional waterfall approach can be inefficient because it idle key team members for extended periods of time. The developer feels that the waterfall approach also introduces a lot of risk because it defers testing and integration until the end of the project lifecycle. Due to various systems review on online voting system it will be is easy for developer to make changes conveniently to the system develop to be in line with company objectives which RUP process is adequately supported.

* 1. **Experimental Research design**

An attempt by the researcher to maintain control over factors that may affect the results of an experiment. In doing so, they need to have a blueprint procedure of conceptual framework within which the experiment is conducted. The following are steps involved in conducting this test.

1. Select target population
2. Group or pair selected population
3. Identify and control non experimental factors
4. Construct and validate instruments to measure the outcome
5. Conduct pilot study
6. Determine the place and duration of the test

**3.3.1 Requirement elicitation**

The researcher will be using questionnaire to collect the data. In this case online questionnaire is the best method for data collections. This is because it is easy to take and collect practical large amounts of information in a short period of time. It will reduce cost as one form can be manipulated to be used by many respondents.

#### 3.3.2 Online questionnaires

The researcher will use both closed and open ended questions. The open-ended questions mean capture respondents’ general opinion in relation to the area of study while closed-ended ones will capture the views of respondents concerning a specific area in the study which can be quantified.

* + 1. **Advantage of Online questionnaire**

1. **Low cost**: One form can be manipulated to be used by many respondents.
2. **Less time:** Rapid deployment and return are possible with online surveys that cannot be attained by traditional methods.
3. **Convenience of respondent:** They can answer question at their own free time and even start a question at one time, stop and complete later.

**3.3.4 Limitation of online questionnaire**

1. **Limited sampling and respondent availability**: Certain populations are likely to face internet access problem to respond to online questionnaires.

**3.3.5 Sample populations**

Kenya Tea Development Agency Company (KTDA) comprises of 6 managers of different department, over 50 employees and 10 subordinate stuff. Out of this composition the researcher will focus on 3 managers, 15 employees and 5 subordinate staff to make up a sample size. This represent 34.8 % of the total target population.

## 3.3.6 Stratified sampling

To gain clear access to the sample population and ensure that results are proportional and representative of the whole process. Stratified sampling will be employed. This sampling involves dividing the entire populations into different subgroups or strata, and then randomly selects the final subject from different strata. This technique enables correlation and comparison among the sub groups. Their outcome is considered to be much closer to what a whole population will be.

### **3.3.7 Data and system analysis**

Once the data has been collected, SPSS tool will be used to analysis data in order to come up with useful information to justify the development of the system and also assist in coming up with an appropriate system. Later represent the finding using analytical tool such as pie chart, bar graphs.

**3.3.8 Importance of analytical tools**

1. It is more visual simpler than other form of graphic as it represents data visually as a fractional part of whole.
2. Require minimal additional explanations.
3. Estimate can be made quickly and accurately.
4. SPSS provide wide range of options.
   1. **System Specification**
      1. **Software requirement**
5. Window (7&8) -The operating use to develop the system.
6. JQuery for Mobile, HTML, CSS, JAVASCRIPT- These are computer programming language that will be used to develop the system
7. XAMPP/WAMP- This is a local server which will be used for creation of the MySQL database
8. PHP- This is a connector which acts as an interface between MySQL database and users interface
9. Web browser- This system will be access through several browsers, Firefox, Chrome, Opera, Internet Explorer, safari etc.

**3.4.2 Hardware Requirement**

1. Computer/laptop - 320 GB hard disk or above and RAM 2GB or above where the system will be installed.
2. Smartphone, Desktop, Tablet, IPad – For testing responsiveness of the system.
3. Printer – for printing of the reports
   1. **Design**

In this section various system designs will be explore, technology use, human computer interface, interaction style and task analysis.

* + 1. **Menu Driven Technology**

The proposed system will use menu driven interface whereby users will have list of choice and can make a selection by highlighting them.

**3.5.1.1 Advantages of menu driven interface**

1. They are easy to use as the user does not have to remember the set of commands or what kind of symbol use.
2. They are user Friendly-One can guess the way around the options.

**3.5.1.2 Challenges of Menu driven interface**

They can be irritating if there are too many levels of menus to move around.

* + 1. **Interaction style**

To ensure easy navigation and usability proposed system will be using menu selection style where a set of options is displayed on the screen and executing of one of the option results in a state change of the interface.

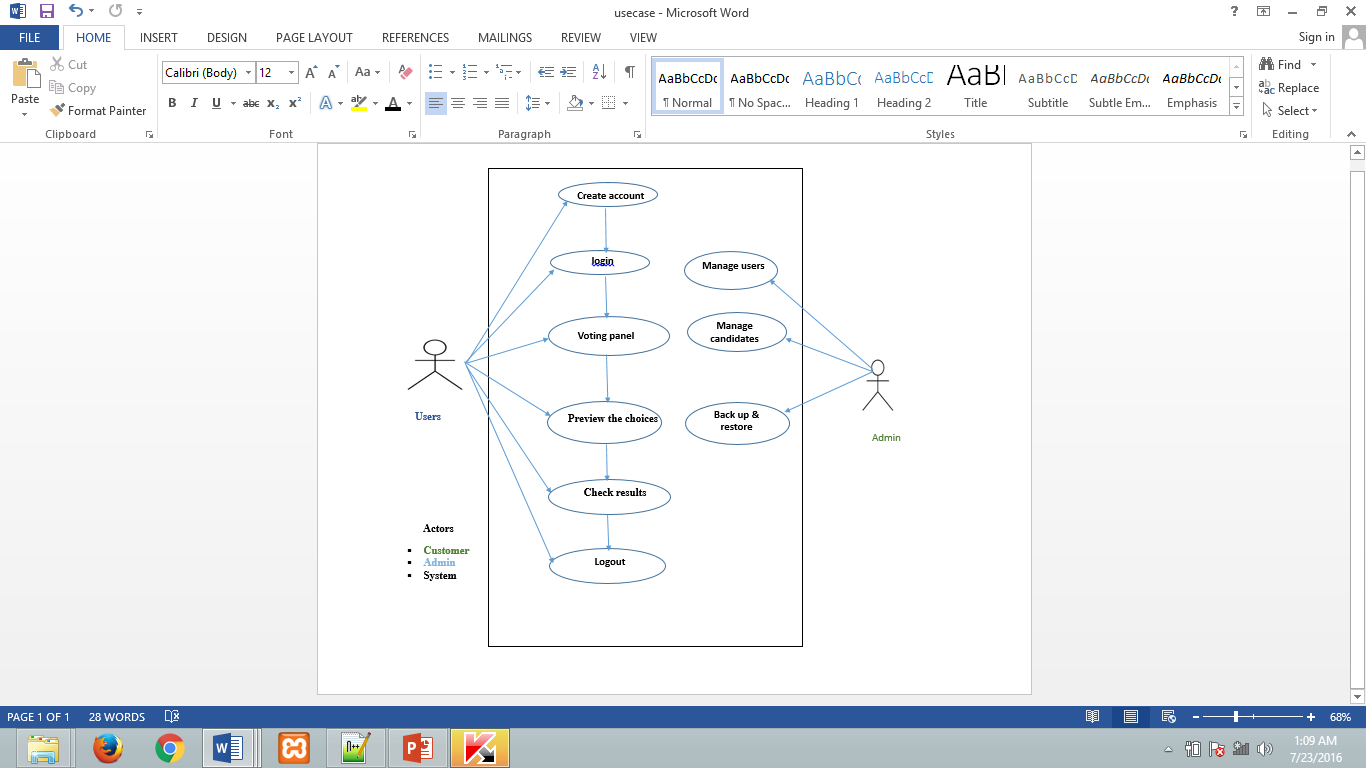
**3.5.2.1 Advantages of Menu interaction style**

1. Afford exploration-user can look around in the menus for the appropriate command unlike having to remember the name of a command.
2. Can be appealing to users-if the display and selection mechanism are implemented using shortcuts.
3. Ideal for novice-you do not have to remember the set of commands or the image.
4. Best suited for mobile applications

**3.5.2.2 Disadvantages Menu interaction style**

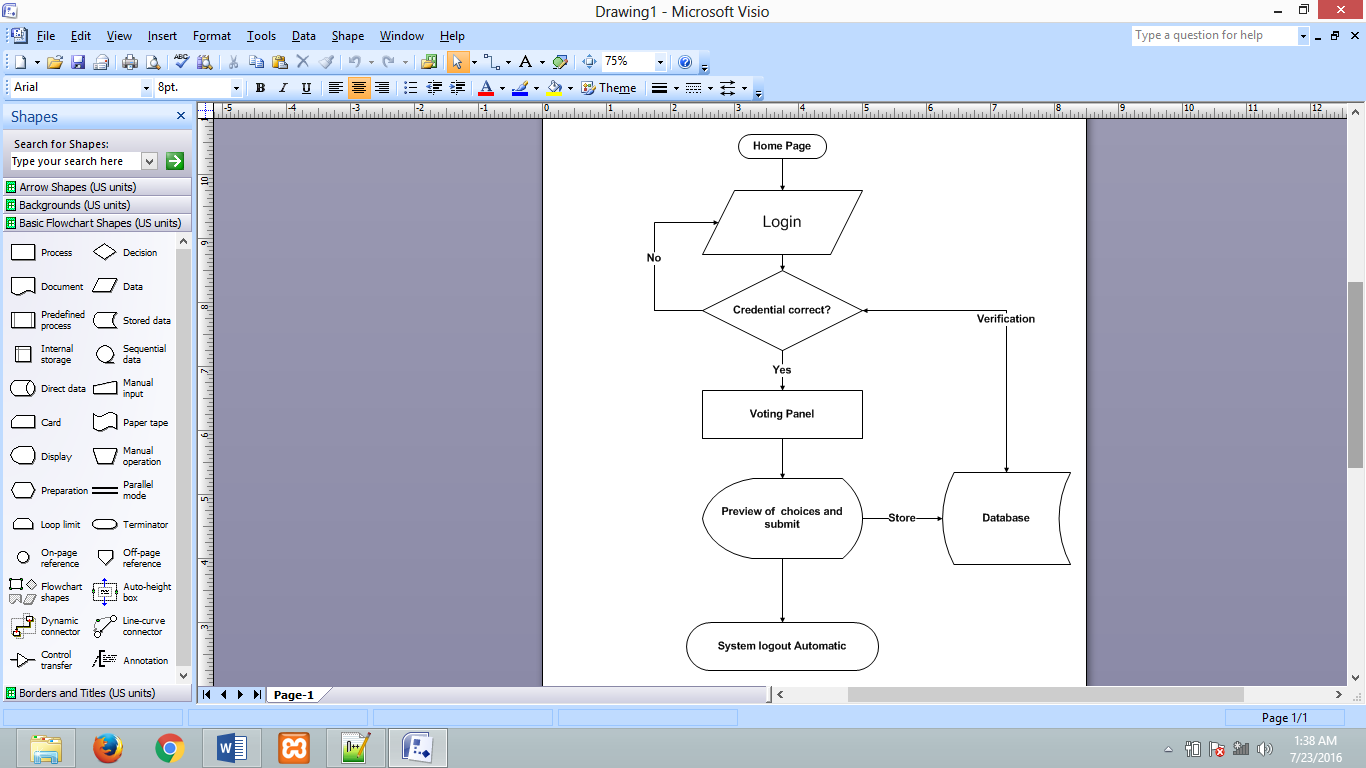
1. Too many menus may lead to information overload or complexity of discouraging proportions
2. May not be suited for small graphic displays
   1. **Task Analysis design**

Analyzing and documenting the system is an important task researcher has employed, task analysis involves the use of graphical representations such as use case diagrams, Flowchart, class diagram etc.

* + 1. **Use case diagram**

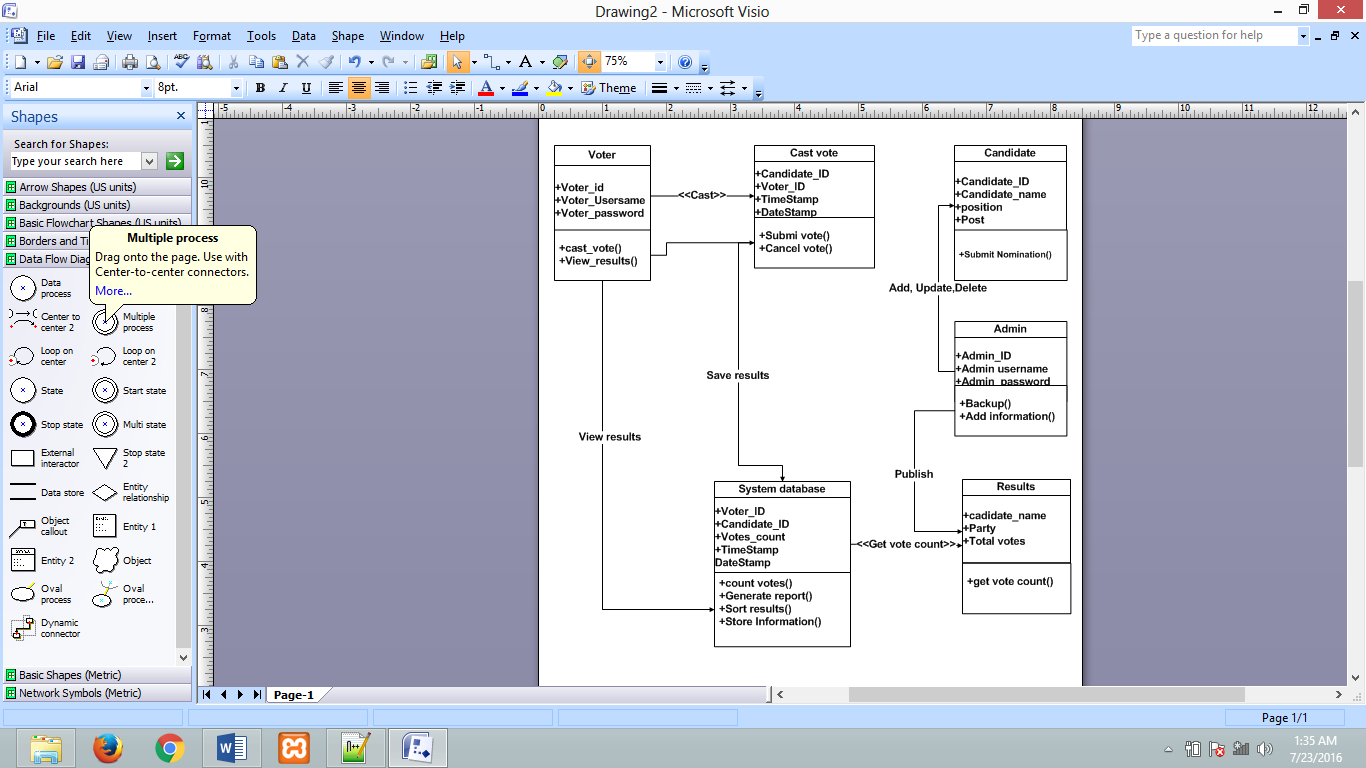
**Figure 3.7 *Use case diagram***

* + 1. **Users Login flowchart**



**Figure 3.8 *Login Flow chart diagram***

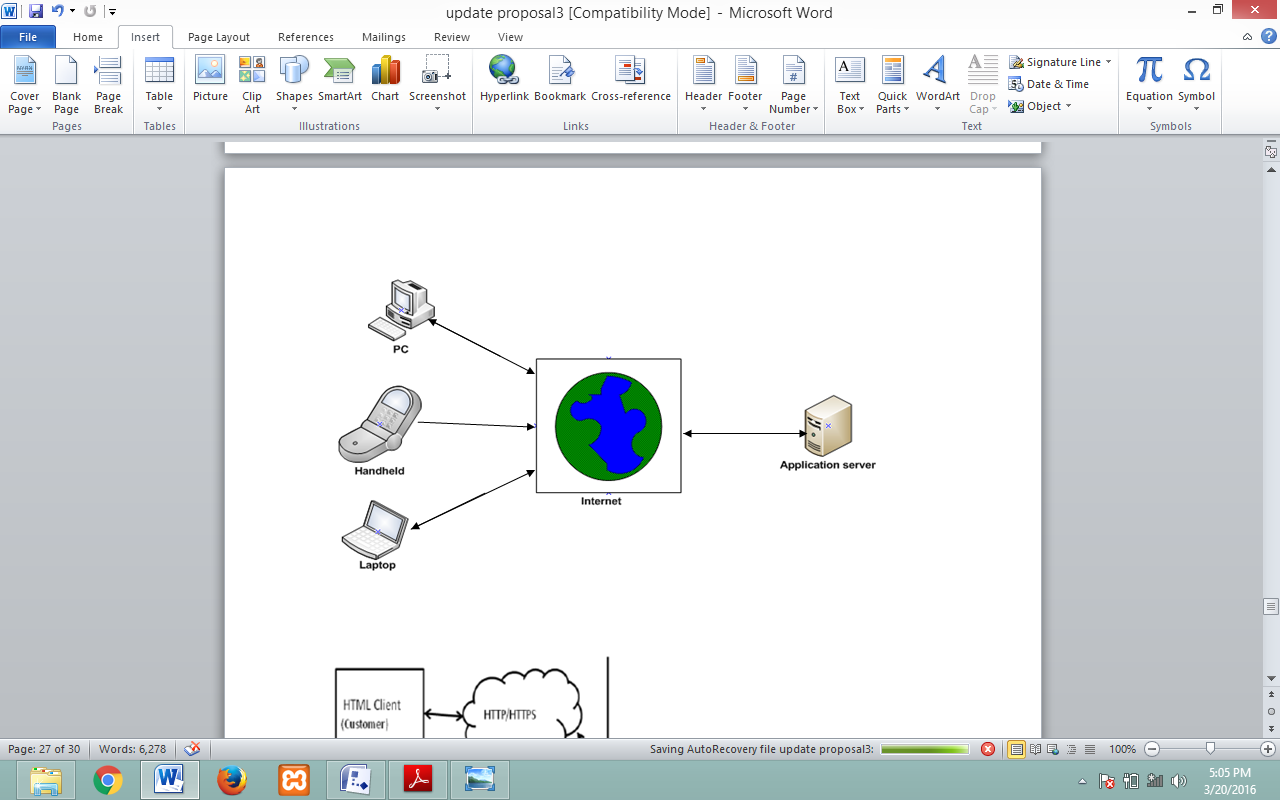
* + 1. **System Class Diagram**



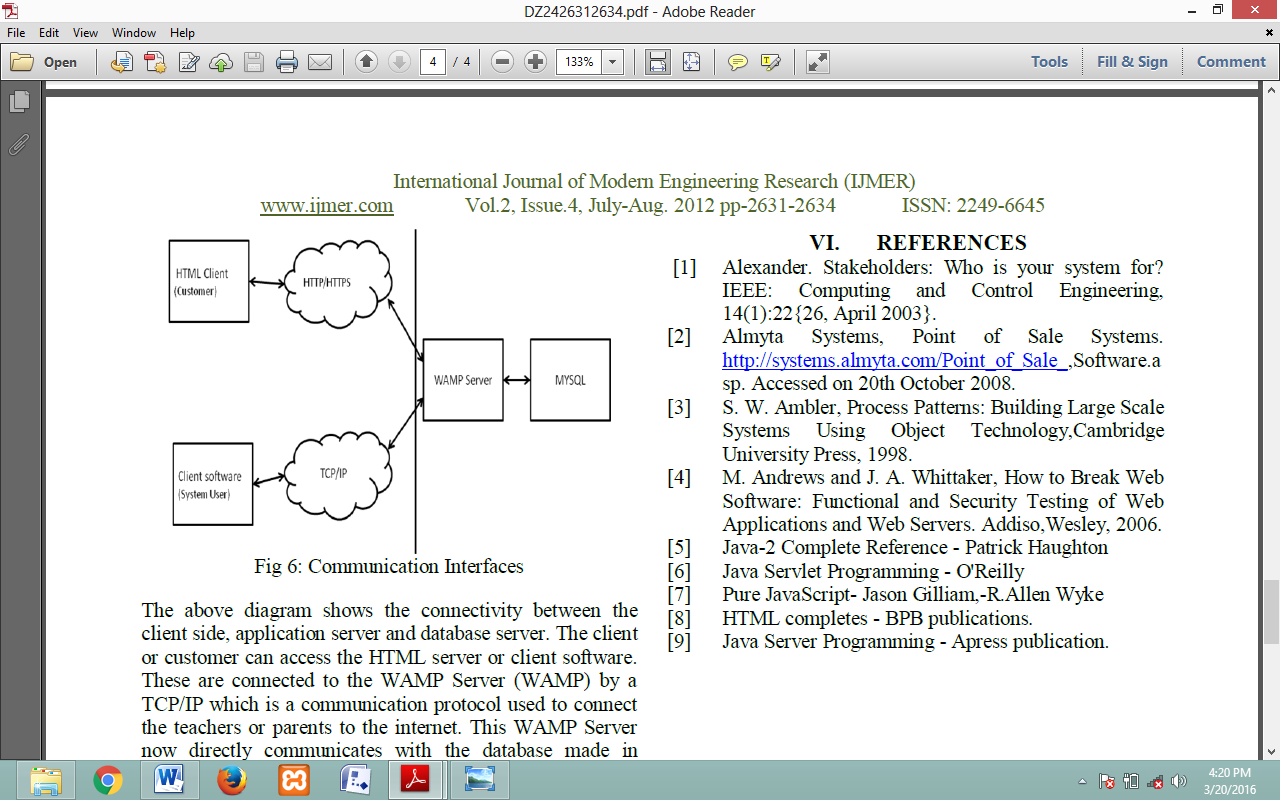
**Figure 3.9 *Class diagram***

* 1. **System Architecture** 
     1. **Client server**

When a voter wants to vote, he/she has to access the system application with web browser (the client), the client initiate the request to the server. The voter login by input his/her credential of which the server will interpret and provide output to the web server. Finally, the web server will return the results to the client web for display. Refer to **figure 3.10** and **figure 3.11**



**Figure 3.10 *Client server architecture***



**Figure 3.11 *Communication interface***

The above diagram shows the connectivity between the client side, web server and database server. The User or voter can access the HTML server or client software. These are connected to the WAMP Server (WAMP) by a TCP/IP which is a communication protocol used to connect these Users or voters to the internet. This WAMP Server now directly communicates with the database made in MYSQL. All the enquiries or data will be retrieved from the database.

**CHAPTER 4**

**SYSTEM CODE GENERATION, TESTING CONCLUSION & RECOMMENDATIONS**

**4.1 Introduction**

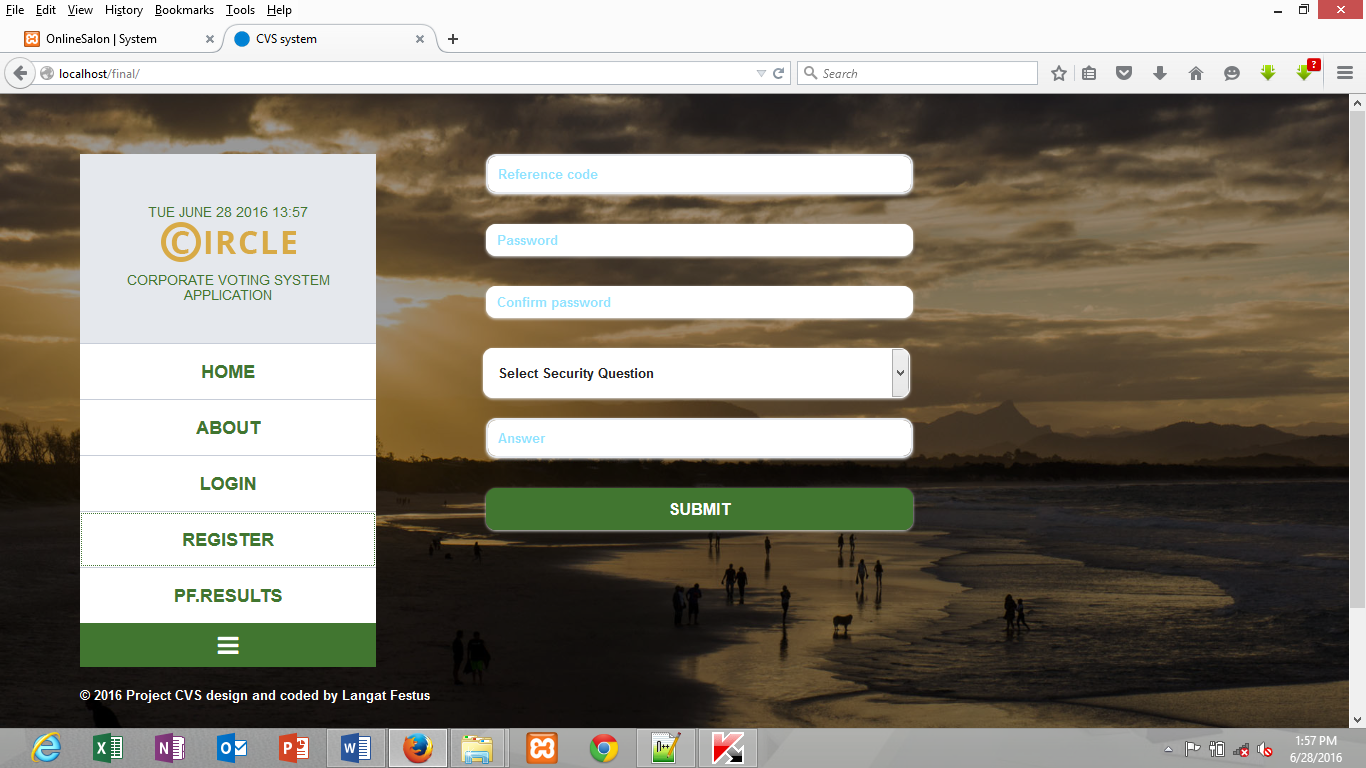
In this topic researcher will focus on the overview of the implementation and explain how users will interact and navigate through the system very easily.

**4.2 System code Generation**

This develop system is implemented as online application access through Mobile, Desktop, Tablet, IPad platform.

**4.2.1 Registration Form**

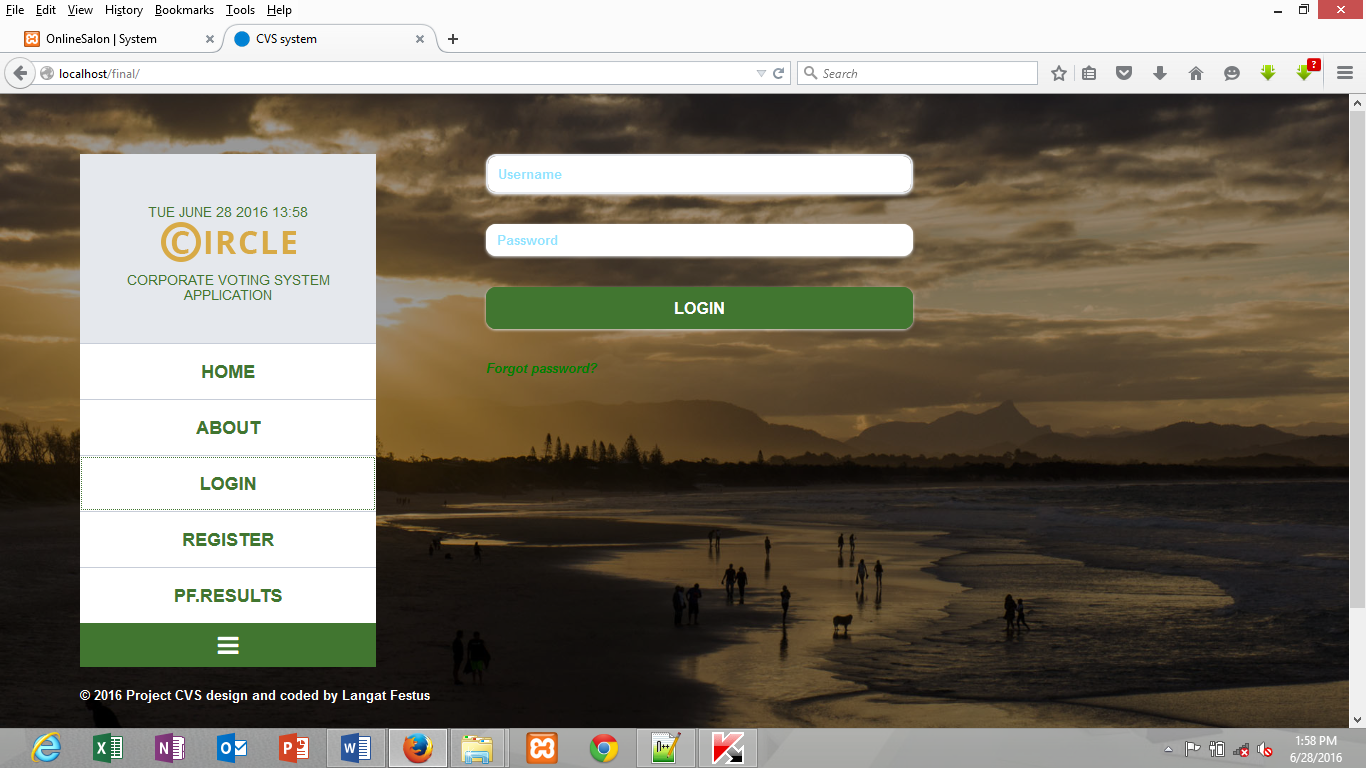
The purpose of registration form is to capture users’ personal details such as e.g username and password and saved them in a central database.



**Figure 4.1 *Registration form***

**4.2.2 Login page**

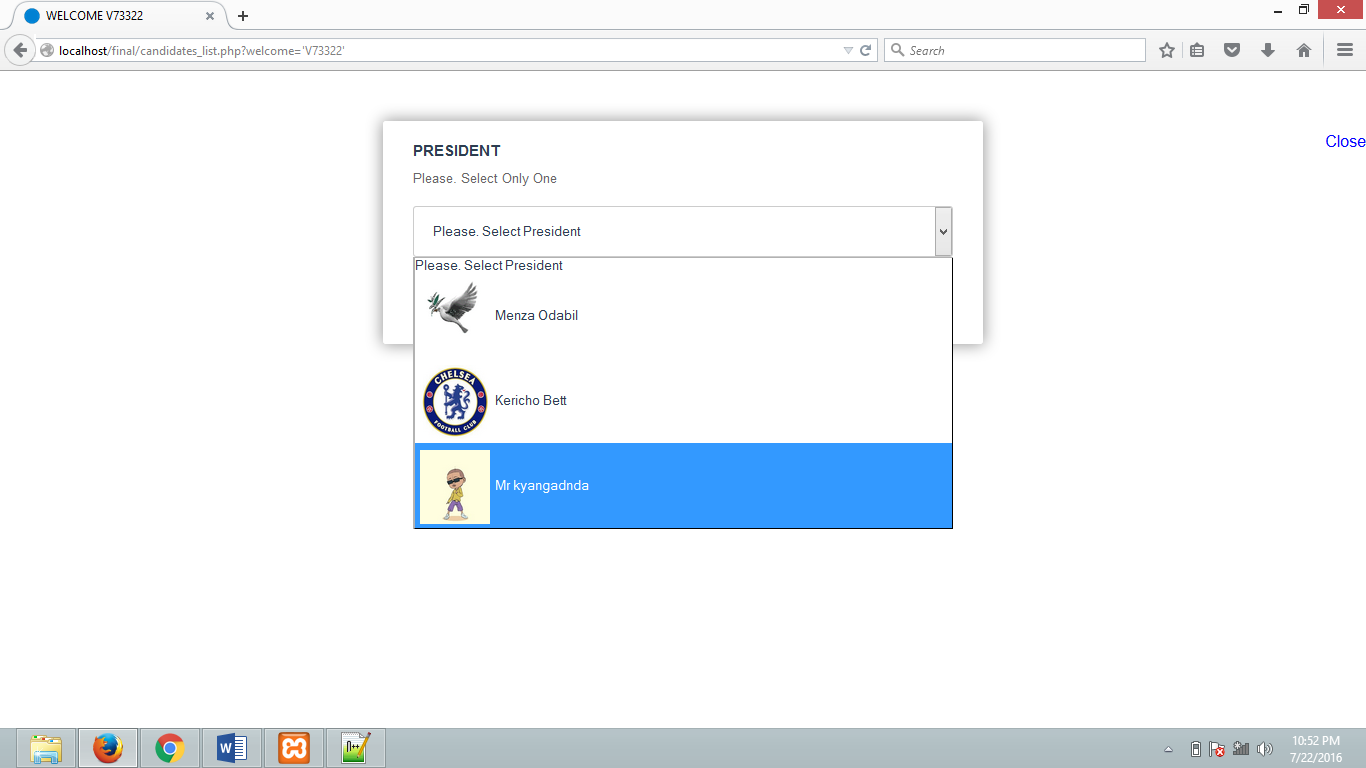
After the user’s register, they are supposed to login using the information submitted in the registration form. This information are validate by the system to ensure that legitimate users enjoy the privilege of voting process. Figure 4.2



**Figure 4.2** ***Login panel***

**4.2.2 Voting panel**

This a panel which is only access by the voters who have been validated and verified by the system as authorized user’s .The system will prompt to select one candidate at the time. Preview panel is provided to enable voters to review selection before casting the vote. These preview panel help the voters to makes changes if they have selected the wrong candidate to whom they did not intend to vote for.



**Figure 4.3 *Voting panel***

**4.3 Qualitative Analysis**

The researcher sets out to examine the voting methods in KTDA and the effects it has on employee performance in the workplace. Research was conducted by a content analysis utilizing the results of investigation carried out in a volunteer and convenient manner.

The researcher uses random sampling methods to carry out investigation in which 23 responded comprise of 3 managers, 15 employees and 5 subordinate staff participate in the process. This represent **34.8 %** of the total target population .Refer figure 4.4.

**Figure 4.4 *participants populations***

This study analyzed the first voting techniques and familiarity with the process. **70.6%** of the total respondent are aware of existed of online voting system .These voting may not be necessary corporate voting system but some of the games which are meant to determine the simple majority e.g player of the year, Company of the year, etc. Despite having the idea of online voting system, most of the participant has never attempt to use it. Refer table 4.2 and figure 4.5

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Table 4.1 Knowledge on online voting system** | | | | | |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Yes | 12.0 | 70.6 | 70.6 | 70.6 |
| No | 5.0 | 29.4 | 29.4 | 100.0 |
| Total | 17.0 | 100.0 | 100.0 |  |

**Figure 4.4 *Knowledge on online voting system***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Table 4.2 use of online voting system** | | | | | |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Yes | 5.0 | 29.4 | 29.4 | 29.4 |
| No | 12.0 | 70.6 | 70.6 | 100.0 |
| Total | 17.0 | 100.0 | 100.0 |  |

**Figure 4.5 *use of online voting system***

The researcher sort to know some of the methods do KTDA Company use in conduct their elections. From the survey it came out that **76.5%** of the total participant believe that Queue system of voting is use in KTDA Company to conduct election table 4.2 and figure 4.6. This methods come with some of the limitation such Time consuming, low tallying process, Coercion, which research is try to resolved with online corporate voting systems which is fast, flexible, mobile and portable.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Table 4.2 Method of voting** | | | | | |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Queue System | 13.0 | 76.5 | 76.5 | 76.5 |
| Not sure | 4.0 | 23.5 | 23.5 | 100.0 |
| Total | 17.0 | 100.0 | 100.0 |  |

**Figure 4.6 *Method of voting***

The study revealed that introduction of online corporate voting system would likely to impact the operation of the organization positively and increase the performance of the staff. **70.6%** of the target populations believe that corporate voting system is a convenient, effective and efficiency way of conducting election and **58.8%** believe that services delivery in an organization may experience significant change of leaderships. These revelation implies that there is need for the company to reconsider how the company handles its elections to increase participations and moral support from the stakeholders. Refer table 4.3, table 4.4, table 4.5

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Table 4.3 Convenience of the system** | | | | | | | | | | |
|  | | Frequency | | Percent | | Valid Percent | | Cumulative Percent | |
| Valid | Yes | 12.0 | | 70.6 | | 70.6 | | 70.6 | |
| No | 2.0 | | 11.8 | | 11.8 | | 82.4 | |
| Not sure | 3.0 | | 17.6 | | 17.6 | | 100.0 | |
| Total | 17.0 | | 100.0 | | 100.0 | |  | |
| **Table 4.4 Services Delivery** | | | | | | | | | | |
|  | | | Frequency | | Percent | | Valid Percent | | Cumulative Percent | |
| Valid | Very Likely | | 4.0 | | 23.5 | | 23.5 | | 23.5 | |
| Likely | | 10.0 | | 58.8 | | 58.8 | | 82.4 | |
| Neutral | | 2.0 | | 11.8 | | 11.8 | | 94.1 | |
| Not sure | | 1.0 | | 5.9 | | 5.9 | | 100.0 | |
| Total | | 17.0 | | 100.0 | | 100.0 | |  | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Table 4.5 Efficiency and Effectiveness of the system** | | | | | |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Yes | 13.0 | 76.5 | 76.5 | 76.5 |
| No | 2.0 | 11.8 | 11.8 | 88.2 |
| May be | 2.0 | 11.8 | 11.8 | 100.0 |
| Total | 17.0 | 100.0 | 100.0 |  |

Table 4.6 shows that majority of the participants representing **52.9** % of the target populations highly recommends the development of the system while a margin of percentage **47.1** % had a little though of their opinion on the development of the system. This therefore means that almost all the employees in the organization are of the opinion of developing the new system hence justifying the research project.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Table 4.6 System recommendation** | | | | | |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Very Likely | 9.0 | 52.9 | 52.9 | 52.9 |
| Likely | 8.0 | 47.1 | 47.1 | 100.0 |
| Total | 17.0 | 100.0 | 100.0 |  |

**Figure 4.7 *System development recommendations***

**4.4 Testing**

Software testing is carried out to verify that the developed system software package conforms to the expectations defined in the requirements specifications. The primary purpose for performing test is to detect software failures so that defects are identified and corrected be letting it into full use. Situations that can negatively affect the users of the system under specific conditions are handled accordingly. The scope of the system testing involves the examination of the code during execution and the sort of errors it displays or communicates to the user.

**4.4.1 Unit testing**

It is a program testing whereby all the functional activities that have been programmed and stub are been tested as an integrated unit.

**Table 4.7 Unit testing**

|  |  |  |  |
| --- | --- | --- | --- |
| Module Name | Test Objective | Expected Results | Rate Out of 10 |
| User Registration | To check whether the user can be registered into the system. | Should add a new user after a successful registration. | 8 |
| User Login | To check whether the registered user can log in into the system. | Should allow access of a registered user into the system. | 9 |
| Voting | To check whether a logged in user is in position to vote and check the results | Should allow a logged in user to cast the vote. | 9 |
| Results | To check whether a logged in user is in position check results after voting. | Should allow a logged in user to check results. | 10 |
| Logout | To check whether a logged voter who has cast his vote should be logout automatically by the system. | The system should automatically logout the users who has vote. | 10 |

**4.4.2 Overall user interface design**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Table 4.8 overall user interface response** | | | | | |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Satisfied | 13.0 | 76.5 | 76.5 | 76.5 |
| Not satisfied | 3.0 | 17.6 | 17.6 | 94.1 |
| Need Improvement | 1.0 | 5.9 | 5.9 | 100.0 |
| Total | 17.0 | 100.0 | 100.0 |  |

Table 4.8 show that majority of the participant are satisfied with the User interface of the system and its convenience in navigation. This response represent 76.5% of the target population. This implies that the users approved the choice of system design in terms of navigation, clarity, preciousness and readability.

**Chapter 5**

**Summary, Conclusion and Recommendation.**

Information system is a powerful instrument in the hand of making life easier. Technology is an important tool in promoting democracy and boosting the confidence of the participants and mostly the outcome reflects the wishes of the people. The primary goal of every voting system is to increase the participation of the civic. The right to vote is a part of the democratic process, which remains deeply embedded in the modern constitutions. This research paper has been helpful in finding some of the comparative loopholes and drawbacks from various methods of voting and give solution.

Online voting has the capability to reduce or remove unwanted human errors. In addition to its reliability, online voting is able to handle multiple modalities, and provide better scalability for large elections. Online voting is an excellent mechanism that does not require geographical proximity of the voters. For example, Flight attendant can participate in elections by voting online.

There are few challenges that need to be overcome in order to realize the full benefits of the system. These challenge are of voter’s education. The electorate needs to be educated adequately on the use of corporate voting system.

**Conclusion**

Development of corporate voting system was a challenge in implementing some of the functionalities that meant to satisfy the Users and corporate specification. Nevertheless, the unit testing and the acceptance testing carried out show greater success and had more than average rating performance e.g Design, User interface, Modal (Registration, Login, Voting panel and results panel), this implies that development of Online corporate voting system met its objectives.

**Recommendation**

Some of the improvement which can be further extended by researcher are as follows:

1. Implement online corporate voting system with shorts codes SMS such as USSD e.g \*345# which can be supported by a devices such as Basic feature phone.
2. Scale the system to be used in other programming languages such as Python, ASP.NET etc

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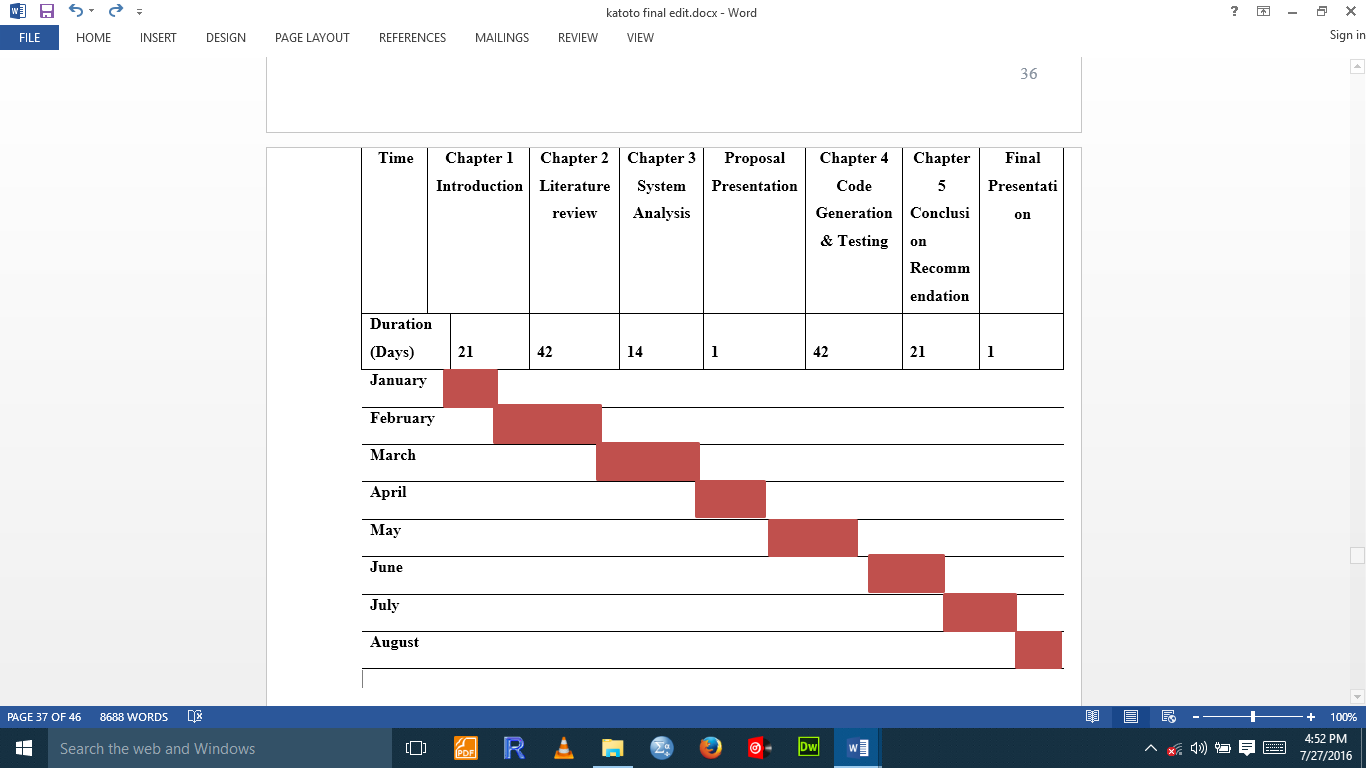
**APPENDIX**

**APPENDIX 1: LOGICAL SCHEDULE OF THE PROJECT**

**Table 5.1 Project time schedule**

|  |  |  |  |
| --- | --- | --- | --- |
| **Index** | **Description** | **Duration** | **Date(weeks)** |
| **1.** | Project Tittle | 14 days | 1 & 2 |
| **2.** | Problem statement | 14days | 3&4 |
| **3.** | Literature review | 21days | 5,6&7 |
| **4.** | System Analysis | 21days | 7,8&9 |
| **5.** | Presentation | 2days | 11 |
| **6.** | Coding & Testing | 21 days | 15,16,17,18 |
| **7.** | Conclusion  Recommendation | 14 days | 19 & 20 |
| **8.** | Appendix | 7 days | 21 |

**APPENDIX 3: Work plan**



**Gant chart**

**APPENDIX 2: BUDGET OF THE PROJECT**

**Table 5.2 Project budget**

|  |  |  |  |
| --- | --- | --- | --- |
| ITEM NO. | PARTICULARS | COST (KSH)  KSH CTS | |
| **1.** | Smartphone | 10,500 | 00 |
| **2.** | Laptop /Desktop | 30,000 | 00 |
| **3.** | Internet services | 4,000 | 00 |
| **4.** | Printer | 5,500 | 00 |
| **6.** | Miscellaneous expenses | 1,000 | 00 |
| **7.** | Flash disk | 1,000 | 00 |
|  | **TOTAL** | **52,000** | **00** |

**APPENDIX 4 : Sample of questionnaires**

**Table 5.3: Sample of questionnaires**

|  |  |  |
| --- | --- | --- |
| **Question** | **Response** | **Statistics** |
| 1. Have you ever heard of any online voting system? | **A.Yes**  **B.No** |  |
| 2. Have you ever use any online voting system? | **A.Yes**  **B.No** |  |
| 3. What kind of voting system does KTDA use?  Give a brief description about the system? | **A.Online voting**  **B.Electronic system**  **C.Queue system**  **D.Not sure** |  |
| 4. Can introduction of online voting system in corporate zone improve services delivery? | **A.Very Likely**  **B.Likely**  **C.Neutral**  **D.Not sure** |  |
| 5. Do you think providing online corporate voting system is convenience to stakeholders? | **A.Yes**  **B.No**  **C.Not sure** |  |
| 6. Do you think online corporate voting system is effective and efficient way of managing elections? | **A.Yes**  **B.No**  **C.Not sure**  **D.May be** |  |
| 7. How likely do you recommend the development of online corporate voting system? | **A.Very likely**  **B.Likely**  **C.Not likely** |  |
| 8. What is your working level in your company? | **A.Administrative level**  **B.Employee**  **C. Subordinate staff** |  |
| 9. Gender? | **A.Male**  **B.Female** |  |

**APPENDIX 5: System requirements**

* + 1. Window (7&8) -The operating use to develop the system.
    2. JQuery for Mobile, HTML, CSS, JAVASCRIPT- These are computer programming language that will be used to develop the system
    3. XAMPP- This is a local server which will be used for creation of the MySQL database
    4. PHP- This is a connector which acts as an interface between MySQL database and users interface
    5. Web browser- This system will be access through several browsers, Firefox, Chrome, Opera, Internet Explorer, safari etc.
    6. Computer/laptop - 320 GB hard disk or above and RAM 2GB or above where the system will be installed.
    7. Smartphone, Desktop, Tablet, IPad – For testing responsiveness of the system.
    8. Printer – for printing of the reports

**APPENDIX 6: Home page code generation**

<!DOCTYPE html>

<html class="no-js">

<head>

<meta charset="utf-8">

<title>CVS system</title>

<meta name="description" content="">

<meta name="viewport" content="width=device-width">

<linkhref="http://fonts.googleapis.com/css?family=Open+Sans:300italic,400italic,600italic,700italic,800italic,400,300,600,700,800" rel="stylesheet">

<link rel="stylesheet" href="css/bootstrap.min.css">

<link rel="stylesheet" href="css/normalize.min.css">

<link rel="stylesheet" href="css/font-awesome.min.css">

<link rel="stylesheet" href="css/animate.css">

<link rel="stylesheet" href="css/templatemo\_misc.css">

<link rel="stylesheet" href="css/templatemo\_style.css">

<script src="js/vendor/modernizr-2.6.2.min.js"></script>

<!---Time script----> <script type="text/javascript" src="date\_time.js"></script>

<!----Login----><link rel="icon" type="image/png" href="favicon.png" />

<link href="style.css" media="screen" rel="stylesheet" type="text/css" />

<!--sa poip up--><link href="admin/src/facebox.css" media="screen" rel="stylesheet" type="text/css" /><script src="admin/lib/jquery.js" type="text/javascript"></script>

<script src="admin/src/facebox.js" type="text/javascript"></script>

<scripttype="text/javascript">jQuery(document).ready(function($){ ('a[rel\*=facebox]').facebox({loadingImage: 'loading.gif',closeImage : 'admin/src/closelabel.png'

}) })</script></head><body> <div class="bg-overlay"></div><div class="container-fluid">

<divclass="row"><divclass="col-md-4col-sm-12"><divclass="sidebar-menu"><div class="logo-wrapper"><h1class="logo"><spanid="date\_time"></span><script type="text/javascript">window.onload = date\_time('date\_time');</script>

<a href="#"><img src="images/logo.png" alt="Circle Template"> <span>Corporate Voting system Application</span></a></h1></div> <!-- /.logo-wrapper --><div class="menu-wrapper"><ul class="menu"> <li><a class="homebutton"href="#" title="This is Welcoming page">Home</a></li><li><aclass="show-1" href="#" title="Learn about the application">About</a></li><li><a class="show-2" href="#" title="Login to cast the vote">Login</a></li> <li><a class="show-3" href="#" title="create users account for the first time user in order to login ">Register</a></li> <li><a rel="nofollow" href="admin/professional\_results.php" title="Check professional\_results">Pf.Results</a></li>

</ul> <!-- /.menu --> </ul> <!-- /.menu --><a href="#" class="toggle-menu"><i class="fa fa-bars"></i></a> </div> <!-- /.menu-wrapper --></div> <!-- /.sidebar-menu --></div> <!-- /.col-md-4 --> <div class="col-md-8 col-sm-12"><div id="menu-container"><div id="menu-1" class="about content"><div class="row"><ul class="tabs"><li class="col-md-4 col-sm-4">

<a href="#tab1" class="icon-item"> <i class="fa fa-lemon-o"> About</i> </a> <!-- /.icon-item --> </li><li class="col-md-4 col-sm-4"><a href="#tab2" class="icon-item"><i class="fa fa-question"> FAQ</i> </a> <!-- /.icon-item --> </li> <li class="col-md-4 col-sm-4"> <a href="#tab3" class="icon-item"> <i class="fa fa-phone">Help</i></a> <!-- /.icon-item --> </li> </ul> <!-- /.tabs --> <div class="col-md-12 col-sm-12"><div class="toggle-content text-left" id="tab1"><span><?php$query1=mysql\_connect("localhost","root",""); mysql\_select\_db("onlinevoting",$query1); $query=mysql\_query("select \* from about");//print 10itemsecho'<divstyle="font-size:15px;float:left;color:green;">'; while($query2=mysql\_fetch\_array($query)){echo$query2['title']."<br/>". $query2['content']."<br/>"."<br/>";}echo "<br />"; echo '</div>';?>

</div><divclass="toggle-content"id="tab2"><span><?php $query1=mysql\_connect("localhost","root",""); mysql\_select\_db("onlinevoting",$query1);

$faq=mysql\_query("select \* from faq");//print 10 items

echo '<div style="font-size:15px; float:left; color:green; ">';

while($faq2=mysql\_fetch\_array($faq)){

echo $faq2['title']."<br/>". $faq2['content']."<br/>"."<br/>";}echo "<br />";echo '</div>';?>

</div> <div class="toggle-content text-left" id="tab3"> <h3>Our Team</h3>

<p>Corporate voting system (OVS) will reduce the time to travel to polling station, time spent in long queue. It will enable voters to vote anywhere, anytime since the application will be available on the web. Case of incorrect tallying of votes will be solve because of right functionality implemented and strong database to store and retrieve data as requested. It will also reduce the voter’s coercion since voters will not converge in one place.</p> </div>

</div> <!-- /.col-md-12 --> </div> <!-- /.row --> </div> <!-- /.about --><!-- /.start Login -->

<div id="menu-2" class="contact content"> <div class="row"> <div class="col-md-9"><div class="contact-form"><?php date\_default\_timezone\_set("Africa/Nairobi"); $date= date('H'); ?>

<form action="login.php" method="post"><fieldset class="col-md-9"> <input id="name" type="text" name="date\_time" value="<?php echo $date;?>"style="display:none;"; required />

</fieldset><fieldset class="col-md-9"> <input id="name" type="text" name="username" placeholder="Username"required></fieldset><fieldsetclass="col-md-9"><input type="password" name="password" id="subject" placeholder="Password" required> </fieldset>

<fieldset class="col-md-9"> <select name="asas" style="display:none;">

<option>voter</option> </select> </fieldset> <fieldset class="col-md-9"> <input type="submit" value="Login" id="btn" class="button"> </fieldset> <fieldset class="col-md-9">

<a href="pwordrecover.php" style="color:green; height:100%;width: 100%;"><em> Forgot password?</em></a ></fieldset> </form></div> <!-- /.row --></div> <!-- /.contact-form -->

</div> <!-- /.col-md-12 --></div> <!-- /.row --></div> <!-- /.End Login -->

<!-- /.start register --><div id="menu-3" class="contact content"><div class="row">

<div class="col-md-9"><div class="contact-form"><div class="row"><form NAME = "frmOne" style="z-index:999;" action="save.php" method="POST" onsubmit="return validateForm()"><fieldset class="col-md-9"><input id="name" type="text" name="username" placeholder="Reference code" required ></fieldset><fieldset class="col-md-9">

<input type="password" name="password" id="subject" placeholder="Password" required >

</fieldset><fieldset class="col-md-9"><input type="password" name="rpassword" id="subject" placeholder="Confirm password" required ></fieldset><br/><br/><br/><fieldset class="col-md-9"><select name="question" required><option>Select Security Question</option>

<option>what is your favorite color</option><option>what is your favorite movie</option>

<option>what is your favorite singer</option><option>what is your favorite pet</option>

<option>what is your favorite cartoon character</option></select></fieldset>

<fieldset class="col-md-9"><input type="text" name="ans" value="" placeholder="Answer" required > </fieldset><fieldset class="col-md-9">

<input type="submit" name="submit" value="submit" class="button"></fieldset>

</form></div> <!-- /.row --> </div> <!-- /.contact-form --></div> <!-- /.col-md-12 -->

</div> <!-- /.row --></div> <!-- /.end of register --></div> <!-- /#menu-container -->

</div> <!-- /.col-md-8 --></div> <!-- /.row --> </div> <!-- /.container-fluid -->

<div class="container-fluid"> <div class="row"><div class="col-md-12 footer">

<p id="footer-text"><a href="#">&copy; 2016 Project CVS design and coded by Langat Festus </a> </p> </div><!-- /.footer --> </div> </div> <!-- /.container-fluid --><script src="js/vendor/jquery-1.10.1.min.js"></script><script>window.jQuery || document.write('<script src="js/vendor/jquery-1.10.1.min.js"><\/script>')</script><scriptsrc="js/jquery.easing-1.3.js"></script><script src="js/bootstrap.js"></script><script src="js/plugins.js"></script>

<script src="js/main.js"></script><script type="text/javascript">

jQuery(function ($) {$.supersized({// Functionality slide\_interval: 3000, // Length between transitions transition: 1, // 0-None, 1-Fade, 2-Slide Top, 3-Slide Right, 4-Slide Bottom, 5-Slide Left, 6-Carousel Right, 7-Carousel Lefttransition\_speed: 700, // Speed of transition

// Components slide\_links: 'blank', // Individual links for each slide (Options: false, 'num', 'name', 'blank') slides: [ // Slideshow Images { image: 'images/templatemo-slide-1.jpg'

}, {image: 'images/templatemo-slide-2.jpg'}, { image: 'images/templatemo-slide-3.jpg'

}, {image: 'images/templatemo-slide-4.jpg'} ] });}); </script><!----register validation---->

<scripttype="text/javascript">functionvalidateForm(){vara=document.forms["frmOne"]["password"].value;var b=document.forms["frmOne"]["rpassword"].value;if (a!=b) {alert("password mismatch");return false; }}</script><!-----End of register script--------------><!-- Google Map --><script src="http://maps.google.com/maps/api/js?sensor=true"></script>

<script src="js/vendor/jquery.gmap3.min.js"></script><!-- Google Map Init--> <script type="text/javascript"> function templatemo\_map() { $('.google-map').gmap3({marker:{

address: '16.8496189,96.1288854' },map:{ options:{ zoom: 15, scrollwheel: false, streetViewControl : true }}});}</script></body></html>

**APPENDIX 7: Login form code generation**

<img src="images/loading.gif"><?php

//Start session

session\_start();

//Array to store validation errors

$errmsg\_arr = array();

//Validation error flag

$flagerror = false;

//Connect to mysql server

$link = mysql\_connect('localhost','root',"");

if(!$link) {die('Connection failed!' . mysql\_error());}

//Select database

$db = mysql\_select\_db('onlinevoting', $link);

if(!$db) {die("There is a problem with your database connection!". mysql\_error());}

//Function to sanitize values received from the form. Prevents SQL injection

function clean($str) {$str = @trim($str); if(get\_magic\_quotes\_gpc()) {$str = stripslashes($str); }

return mysql\_real\_escape\_string($str); }

//Sanitize the POST values

$time = clean($\_POST['date\_time']);

$login = clean($\_POST['username']);

$password = clean($\_POST['password']);

$position = clean($\_POST['asas']);

$stat='notvoted';

$level='1';

$check='23';

$sum=$check-$time;

if($sum>0)

{if($position=='voter') {$qry="SELECT \* FROM voters WHERE username='$login' AND password='$password' AND status='$stat'";}}

else{header("location:index.php?Voting is closed!"); exit();}

//Create query

if($position=='Admin') {$qry="SELECT \* FROM admin WHERE username='$login' AND password='$password' AND status='$level' ";}

$result=mysql\_query($qry);

//Check whether the query was successful or not

if($result) {if(mysql\_num\_rows($result) > 0) {

//Login Successful

if($position=='voter') {session\_regenerate\_id();$member = mysql\_fetch\_assoc($result);

$\_SESSION['SESS\_MEMBER\_ID'] = $member['username'];

$\_SESSION['NAME'] = $member['name'];

session\_write\_close();

header("location: candidates\_list.php?welcome='$login'");exit();}

if($position=='Admin') {session\_regenerate\_id();$member = mysql\_fetch\_assoc($result);

$\_SESSION['SESS\_MEMBER\_ID'] = $member['username'];

$\_SESSION['NAME'] = $member['name'];

session\_write\_close();

header("location: admin/index.php?#welcome$login ");exit();}}

else {//Login failed

header("location: index.php?#Invalid credential Or ID is Expired");exit();}}

else {die("Sorry Invalid credential Or ID is Expired!<a href=\"index.php\" style=\"color:blue;\"> Back Home</a> ");}?>

**APPENDIX 8: Results page and code generation**

<?php require\_once('../authe.php'); ?>

<html>

<head>

<title>Results</title>

<link rel="icon" type="image/png" href="../favicon.png" />

<!-- CSS Style --><link rel="stylesheet" href="admin.css">

<!--sa poip up-->

<script src="argiepolicarpio.js" type="text/javascript" charset="utf-8"></script>

<script src="js/application.js" type="text/javascript" charset="utf-8"></script>

<link href="src/facebox.css" media="screen" rel="stylesheet" type="text/css" />

<script src="lib/jquery.js" type="text/javascript"></script>

<script src="src/facebox.js" type="text/javascript"></script>

<scripttype="text/javascript">jQuery(document).ready(function($){ $('a[rel\*=facebox]').facebox({ loadingImage : 'src/loading.gif', closeImage : 'src/closelabel.png'

}) })</script><script language="javascript">function Clickheretoprint(){

var disp\_setting="toolbar=yes,location=no,directories=yes,menubar=yes,";

disp\_setting+="scrollbars=yes,width=700, height=400, left=100, top=25";

var content\_vlue = document.getElementById("content").innerHTML;

var docprint=window.open("","",disp\_setting); docprint.document.open();

docprint.document.write('</head><body onLoad="self.print()" style="width: 700px; font-size:11px; font-family:arial; font-weight:normal;">'); docprint.document.write(content\_vlue);

docprint.document.close();docprint.focus();}</script></head>

<body><div id="top"></div><div class="container clearfix"><div class="one-third1 column">

<ul><li><ahref="index.php"><imgalt=""src="img/home.png"><span>Dash Board</span></a></li><liclass="active"><ahref="winner.php"><imgalt="" src="img/win.png"><span>Winner</span></a></li><li><a href="candidates.php"><img alt="" src="img/candidates.png"><span>Candidates</span></a></li>

<li><a href="voters.php"><img alt="" src="img/user.png"><span>Voters</span></a></li>

<li><ahref="idnumbers.php"><imgalt=""src="img/numbers.png"><span>Voters Information</span></a></li><li><ahref="admin.php"><imgalt="" src="img/userpic.png"><span>AdminAcount</span></a></li><li><a href="profession.php"><img alt="" src="img/page.png"><span>Profession </span></a></li>

<li><ahref="position.php"><imgalt="" src="img/position.png"><span>Position</span></a></li><li><a href="about.php"><img alt="" src="img/parties.png"><span>About</span></a></li><li><ahref="faq.php"><imgalt="" src="img/parties.png"><span>Faq</span></a></li><li><ahref="../logout.php"><imgalt="" src="img/logout.png"><span>Logout</span></a></li></ul></div><divclass="two-thirds1 column"><divclass="thewraper"><divstyle="margin-top:8px;"><aid="addd"href="javascript:Clickheretoprint()">Print</a> &nbsp; &nbsp; &nbsp; &nbsp;<span style="text-align: center; font:80px; display: inline-block;">CVS system Analysis</span></div><div class="content" id="content">

<?php

include('../connect.php'); $query1 = $db->prepare("SELECT \* FROM position");

$query1->execute();for($i=0; $row1 = $query1->fetch(); $i++){

$getname=$row1['name']; if(($getname != 'Gender') AND ($getname != 'Representative')) {

$getname1=$getname;echo'<divstyle="margin-top:18px;">';echo <strong>'.$getname.'</strong><br>'; $results = $db->prepare("SELECT \* FROM candidates WHERE position= :a ORDER BY votes DESC LIMIT 1");$results->bindParam(':a', $getname1); $results->execute();

for($i=0; $rows = $results->fetch(); $i++){?>

<img src="candidates/<?php echo $rows['image']; ?>" width="80" height="80" style="margin-bottom: -26px; margin-top:5px;" /> &nbsp; &nbsp;<?php echo $rows['name']; ?> &nbsp;&nbsp;Winning Votes= &nbsp;<?php echo $rows['votes']; ?><br /><br />

<?php}echo '</div>'; }}?></div></div></div></div></div><div id="footer"><div class="copyrights">&copy; Copyright 2016 PVRS</div></div></body></html>

**APPENDIX 9:** Request letter for administering questionnaire

**LANGAT FESTUS,**

**P.O.BOX 635-80300, VOI.**

**6TH MAY, 2016**

**TO**

**HEAD OF ICT DEPARTMENT,**

**KENYA TEA DEVELOPMENT AGENCY,**

**P.O.BOX 42391, NAIROBI, KENYA**

**Dear sir/Madam**,

**RE: REQUEST TO PARTICIPATE IN THE ONLINE QUESTIONNAIRE.**

I am a fourth year student taking a bachelor of sciences in Information Technology. I would like to request for some of your time in attempt to complete simple online questionnaire concerning methods of conducting election of directors in your organization. The information collected will support my proposal on development of corporate voting system which aims to managing voting process and tally votes.

Some of the questions will involve view on current voting system, leadership, services delivery and Conveniences of voting system.

I will then use the information to develop online voting system application that will try to handle voting process and ensure convenience, ease of conducting election in an organization.

I am looking forward to your participation and involvement of members of your organization.

Yours Sincerely,

Langat Festus