



Sanjay Ghodawat University Kolhapur

Established as a State Private University under Govt. of Maharashtra Act No. XL dated 3rd May 2017

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PROJECT REPORT

A report submitted in partial fulfillment of the requirements for the



Project

School of Computer Science & Engineering

By

PRN No: 22SC114281019

Roll No: 18

Program: BTech

Class: FY BTech (Div.A)

Under Supervision of

Mr. Sanket S. Prabhu

Academic Year: 2022-2023



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CERTIFICATE

This is to certify that the “**Project Report**”

On

“**VOTING SYSTEM**”

submitted by

PRN No: 22SC114281019

Roll No: 18

Program: BTech

Class: FY BTech

(Div A)

is work done by him/her and submitted during the 2022 – 2023 academic
year, in partial fulfillment of the **Project**.

Sanjay Ghodawat University, Kolhapur

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Ms. Deepika Patil

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Head, SOCSE

External



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DECLARATION

I the undersigned solemnly declare that the report of the project work entitled “**VOTING SYSTEM**” which is carried out under the supervision of **Mr. Sanket S. Prabhu** I assert that the statements made and conclusions drawn are an outcome of the project work. I further declare that to the best of my knowledge and belief that the project report does not contain any part of any work which has been submitted for the award of any other degree/diploma/certificate in this University or any other University.

Avishkar Ashok Patil

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Roll No: 18

Class: FY BTech (Div A)



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ABSTRACT

The word "vote" means to choose from a list, to elect or to determine. The main goal of voting (in a scenario involving the citizens of a given country) is to come up with leaders of the people's choice.

Most countries, Kenya not an exception have problems when it comes to voting. Some of the problems involved include rigging votes during election, insecure or inaccessible polling stations, inadequate polling materials and also inexperienced personnel.

This online voting/polling system seeks to address the above issues. It should be noted that with this system in place, the users, citizens in this case shall be given ample time during the voting period. They shall also be trained on how to vote online before the election time.

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Introduction

Candidate registration, document verification, and auto-generated User ID and pass for candidates and voters will all be part of the online election system. Election Commission will be in charge of the Admin Login. Candidate Login will be taken care of. Voters will be given a unique ID and password by each candidate, which they will use to vote for that candidate just once every election. The initiative benefits the Election Commission, voters (who may learn about the candidate's past and make informed decisions), and candidates.

The software system enables candidates to access their profiles and submit all of their information, including prior milestones. The administrator may review each Candidate's information and papers; only after that, the Candidate's ID and Password will be produced, and incorrect accounts can be removed. Voters may access a list of Candidates in their region via the software system. The administrator has full control over the system and may regulate and remove any information that isn't related to the election rules.

Problem Definition:

To develop an Online Voting System in which complete information regarding the voters is stored in the centralized database. The voter can vote for any candidate while sitting in the home. Proper security algorithms are implemented to stop any kind of active or passive attacks during voting. This Online Voting System can be used for the election as big as the general election or it can be used even in simple college elections.

Scope

It is focused on studying the existing system of voting and to make sure that the people's vote is counted, for fairness in the elective positions. This is also what will produce:

- Less effort and less labor intensive, as the primary cost and focus primary

on creating, managing, and running a secure web voting portal.

- Increasing number of voters as individuals will find it easier and more convenient to vote, especially those abroad.

1. It will increase the overall voting percentage.
2. It will reduce election expenditure.
3. It can make more use by using the advanced security methods like biometrics.
4. You can vote from any corner of the world through this system.

- **Problem Identification:**

- 1. Define the Problem.::**

- What is the problem? ... When did the problem start and how long has this problem been going on?

Is there enough data available to contain the problem and prevent it from getting passed to the next process step? If yes, contain the problem.

- 2. Clarify the Problem. ...**

- What data is available or needed to help clarify, or fully understand the problem?
- Is it a top priority to resolve the problem at this point in time?
- Are additional resources required to clarify the problem? If yes, elevate the problem to your leader to help locate the right resources and form a team.

- 3. Define the Goals. ...**

- What is your end goal or desired future state?
- What will you accomplish if you fix this problem?
- What is the desired timeline for solving this problem?

- 4. Identify Root Cause of the Problem. ...**

- Identify possible causes of the problem.
- Prioritize possible root causes of the problem.
- What information or data is there to validate the root cause?

- 5 . Execute Action Plan. ...**

- Implement action plan to address the root cause.
- Verify actions are completed

Objectives

- ☐ Reviewing the exiting/current voting process.
- ☐ Coming up with an automated voting system.
- ☐ Implementing a an automated/online voting system.
- ☐ Validating the system to ensure that only eligible voters are allowed to vote
- ☐ Takes time and human resources .
- ☐ Reviewing the existing/current voting process or approach.
- ☐ Coming up with an automated voting system ;
- ☐ Implementing a an automated/online voting system;
- ☐ Validating the system to ensure that only legible voters are allowed to vote.

System Requirements Specification

- Software Requirement:
 - Turbo C
 - Microsoft Visual Studio Code
 - Dev C++

- **Hardware Requirement**

- Computer or laptop
- Intel(R) Core(TM) i3-Processor
- RAM-1 GB Minimum
- Storage-100GB

Methodology

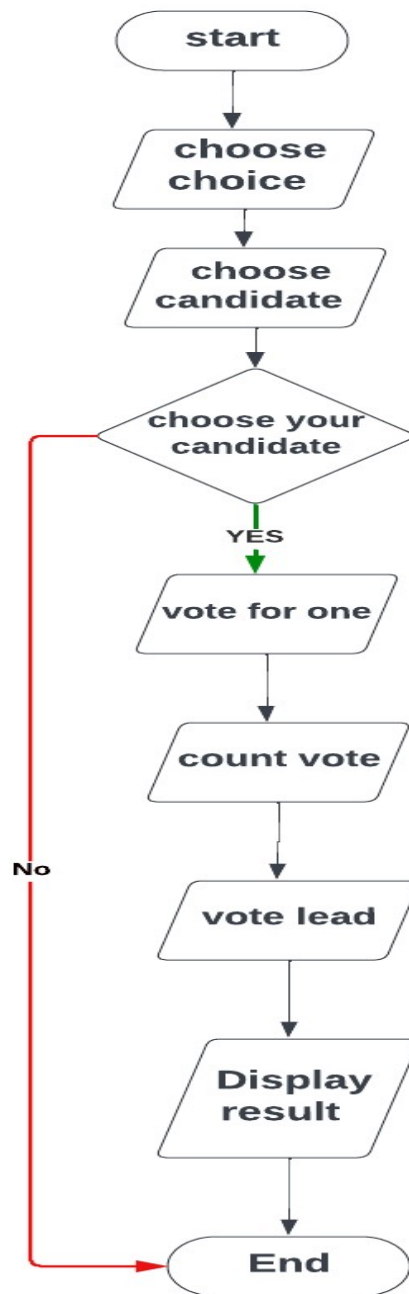
ALGORITHM:

Election algorithms choose a process from a group of processors to act as a coordinator. If the coordinator process crashes due to some reasons, then a new coordinator is elected on other processor. Election algorithm basically determines where a new copy of the coordinator should be restarted. Election algorithm assumes that every active process in the system has a unique priority number. The process with highest priority will be chosen as a new coordinator. Hence, when a coordinator fails, this algorithm elects that active process which has highest priority number. Then this number is sent to every active process in the distributed system.

1) An individual node is chosen as the master node from a pool node in the network. This node is the main node in the network which acts as a master and the rest of the nodes act as slaves. The master node is chosen using an election process/leader election algorithm.

- Step 1: Start
- Step 2: Choose choice
- Step 3: Choose candidate
- Step 4: Vote for (1 to 4) choice
- Step 5: Vote count
- Step 6: Vote lead
- Step 7: Display result
- Step 8: End

- **Flow Diagram(Flow Chart):**



Implementation



“Introduction of C Programming”

Programming and Programming Languages: The native language of a computer is binary—ones and zeros—and all instructions and data must be provided to it in this form. Native binary code is called machine language. The earliest digital electronic computers were programmed directly in binary, typically via punched cards, plug-boards, or front-panel switches. Later, with the advent of terminals with keyboards and monitors, such programs were written as sequences of hexadecimal numbers, where each hexadecimal digit represents a four binary digit sequence. Developing correct programs in machine language is tedious and complex, and practical only for very small programs. In order to express operations more abstractly, assembly languages were developed. These languages have simple mnemonic instructions that directly map to a sequence of machine language operations. For example, the MOV instruction moves data into a register, the ADD instruction adds the contents of two registers together. Programs written in assembly language are translated to machine code using an assembler program. While assembly languages are a considerable improvement on raw binary, they still very low-level and unsuited to large-scale programming. Furthermore, since each processor provides its own assembler dialect, assembly language programs tend to be non-portable; a program must be rewritten to run on a different machine. The 1950s and 60s saw the introduction of high-level languages, such as Fortran and Algol. These languages provide mechanisms, such as subroutines and conditional looping constructs, which greatly enhance the structure of a program, making it easier to express the progression of instruction execution; that is, easier to visualise program flow. Also, these mechanisms are an abstraction of the underlying machine instructions and, unlike assembler, are not tied to any particular hardware. Thus, ideally, a program written in a high-level language may be ported to a different machine and run without change. To produce executable code from such a program, it is translated to machine-specific assembler language by a compiler program, which is then converted to machine code by an assembler (see Appendix B for details on the compilation process). Compiled code is not the only way to execute a high-level program. An alternative is to translate the program on-the-fly using an interpreter program (e.g., Matlab, Python, etc). Given a text-file containing a high-level program, the interpreter reads a high-level instruction and then executes the necessary set of low-level operations. While usually slower than a compiled program, interpreted code avoids the overhead of compilation-time and so is good for rapid implementation and testing. Another alternative,

intermediate between compiled and interpreted code, is provided by a virtual machine (e.g., the Java virtual machine), which behaves as an abstract-machine layer on top of a real machine.

compiled to a special byte-code rather than machine language, and this intermediate code is then interpreted by the virtual machine program. Interpreting byte code is usually much faster than interpreting high-level code directly. Each of these representations has its relative advantages: compiled code is typically fastest, interpreted code is highly portable and quick to implement and test, and a virtual machine offers a combination of speed and portability. The primary purpose of a high-level language is to permit more direct expression of a programmer's design. The algorithmic structure of a program is more apparent, as is the flow of information between different program components. High-level code modules can be designed to —plug together piece-by-piece, allowing large programs to be built out of small, comprehensible parts. It is important to realise that programming in a high-level language is about communicating a software design to programmers not to the computer. Thus, a programmer's focus should be on modularity and readability rather than speed. Making the program run fast is (mostly) the compiler's concern

The C Programming Language

C is a general-purpose programming language, and is used for writing programs in many different domains, such as operating systems, numerical computing, graphical applications, etc. It is a small language, with just 32 keywords (see [HS95, page 23]). It provides —high-level structured-programming constructs such as statement grouping, decision making, and looping, as well as —low-level capabilities such as the ability to manipulate bytes and addresses. Since C is relatively small, it can be described in a small space, and learned quickly. A programmer can reasonably expect to know and understand and indeed regularly use the entire language [KR88, page 2]. C achieves its compact size by providing spartan services within the language proper, foregoing many of the higher-level features commonly built-in to other languages. For example, C provides no operations to deal directly with composite objects such as lists or arrays. There are no memory management facilities apart from static definition and stack-allocation of local variables. And there are no input/output facilities, such as for printing to the screen or writing to a file. Much of the functionality of C is provided by way of software routines called functions. The language is accompanied by a standard library of functions that provide a collection of commonly-used operations. For example, the standard function `printf()` prints text to the screen (or, more precisely, to standard output—which is typically the screen). The standard library will be used extensively throughout this text; it is important to avoid writing your own code when a correct and portable implementation already exists

Advantages of Learning :

C is a very popular language throughout the world and is ideal for a programmer to learn at the beginning of their career. There is little vocabulary to learn, the syntax is simple, and the modular structure of the language is easier to learn.

1. It is easy to understand: One of the main reasons why people choose C over other programming languages is its simplicity. C is a highly portable language as programs coded in it are far more fast and efficient. This makes learning C easier than any other programming language. You can easily grasp the concepts behind C because there aren't many keywords or symbols involved. In addition, you don't need to be an expert in computer science to get started with C programming. All you have to do is read through some tutorials online and start writing your own codes. Also, there are system-generated functions and user-defined functions in C Language.

2. Presence of many Libraries: C Language provides lots of built-in functions which consist of system-generated functions and user-defined functions. Many general functions can be used to develop a program, while the programmer can also create a function as per their requirements, which is called a user-generated/defined function, in C Compiler.

3. Easy to write Another reason why C is so popular as an efficient language among programmers is that it allows them to create their own software without having to worry about syntax errors. If you're not familiar with coding, then using structured language C will help you develop better skills. With C, you'll find yourself creating more efficient and effective solutions compared to those created by other programming languages.

4. Low cost If you want to build something from scratch, then C is definitely worth considering. Because of its simple structure, you won't spend too much time trying to figure out whether you've made a mistake or not when developing your program. And if you decide to hire someone else to complete the task, they would only charge you less money.

5. Fast execution speed If you want to execute your application quickly, then C is probably the right choice for you. Since C uses fewer instructions, it executes faster than other programming languages such as Java, Ruby, PHP, etc. Sanjay Ghodawat University, Kolhapur 13 FY BCA, SOCSE P a g e | 13

6. Portable Since C is based on ASCII characters, it works well across different platforms including Windows, Linux, Mac OS X, Android, iOS, etc. Therefore, you can run your C programs anywhere regardless of where you live.

7. Easy debugging Since C doesn't require complex statements like loops, conditionals, variables, functions, arrays, pointers, etc., you can debug your code easily. For example, if you encounter problems while executing your program, just press CTRL+D to stop the process immediately. Then, you can simply step back one line and continue working until you reach the problematic statement.

8. Procedure Oriented Language Users create procedures or functions to execute their tasks in C Language. It's very easy to learn a procedure-oriented language because of the way it works (algorithm to execute the statements you write). If you want to develop a program using procedure-oriented language, you need to frame an algorithm and start converting it into a function.

9. Speed of Compilation The C compiler produces machine code very fast. Close to a thousand lines of code can be put together in a couple of seconds. The C Compiler makes the code more efficient for faster execution.

10. Execution of algorithms and data structures The utilization of algorithms and data structures in C has made program calculations extremely quick and smooth. Subsequently, the C language can be employed in complex estimations and tasks like MATLAB.

11. Dynamic memory allocation In C Language you can allocate memory dynamically or statically. In dynamic allocation, we don't know how much space will be required for our data structure at run time. But if we use static allocation then we need to reserve a fixed amount of memory before starting the execution of the application. So this feature makes us more flexible than other languages like Java where we must declare all variables as final. In dynamic memory allocation, you are allowed to distribute memory at run time. For instance, considering that you don't have the foggiest idea of how much memory is needed by objects in your program, then you can proceed to run a program in C and appoint the memory

Disadvantages Of C Language

1. Lack of Object Orientation C is a very vast and powerful language and simply follows the procedural programming approach. It doesn't extend its support to the concept of OOPs (Inheritance, Polymorphism, Encapsulation, Abstraction, Data Hiding). Here, you can't create a class with multiple inheritances like Java, Python, or C++. In OOP languages like Java, we can inherit methods from the parent class. But there is nothing similar in the C language. We cannot create subclasses for our classes. So it makes it difficult to reuse existing codes.

2. Inefficient Memory Management In C Language you don't need any memory management techniques because it automatically manages all allocated resources for you. But if you want to use dynamic allocation then you should allocate dynamically by malloc function. If you do this manually then you will get a segmentation fault error. So we must always remember about Memory Management Techniques.

3. No Garbage Collection Garbage collection is a feature that automatically reclaims memory from objects no longer needed by an application or library. It can be used for both automatic and manual garbage collection. Automatic garbage collection occurs when there is insufficient free space on the heap to allocate new objects; this may occur because all available physical RAM was allocated to other processes running on the computer system. Manual garbage collection involves explicitly freeing unused blocks of memory with calls to functions such as malloc. But in C/C++ languages, there's no such feature of garbage collection as the culture of these languages is to leave storage management to the developer or programmer. Hence, it would be technically tedious and harsh on pockets to implement a precise garbage collector for C / C++.

4. Run-time checking In the C programming language, the errors are not detected after each line of code. The compiler shows all the errors in the code only during the run-time of the whole which makes the checking of code (debugging) exceptionally complex in enormous projects. Sanjay Ghodawat University, Kolhapur 15 FY BCA, SOCSE Page | 15 Also, the compiler doesn't check whether a variable was declared before its use. The programmer must remember this rule while writing programs.

5. Concept of namespace is not present in C C doesn't carry out the idea of namespaces. A namespace is organized as a chain of commands to permit the reuse of names in various settings. Without namespaces, we can't pronounce two factors of a similar name. However, C programming is devoid of this feature, and consequently, you can't characterize a variable with the same name in C.

6. Absence of Exception Handling Special case Handling is perhaps the main element of programming dialects. While compiling the code, different errors and bugs can happen. Exception Handling permits you to identify the bugs and rectify them. Be that as it may, C doesn't show this significant feature.

1. Lacks Constructor and Destructor C doesn't have any object-oriented functionalities, and hence, it doesn't have Constructor and Destructor features. So in C Language, you need to carry out the manual construction and/or destruction of the variable, either by utilizing a function or by different means. With this, we conclude the guide on the Advantages and Disadvantages of C language, and hope by now you would have developed a sound understanding of the various pros and cons of C.

Source Code:

```
#include<stdio.h>

#define CANDIDATE_COUNT

#define CANDIDATE1 "prajwal"
#define CANDIDATE2 "pankaj"
#define CANDIDATE3 "avishkar"
#define CANDIDATE4 "vishwjeet"

int votesCount1=0, votesCount2=0, votesCount3=0, votesCount4=0, spoiledtvotes=0;

void castVote(){
int choice;
printf("\n\n ### Please choose your Candidate #####\n\n");
printf("\n 1. %s", CANDIDATE1);
printf("\n 2. %s", CANDIDATE2);
printf("\n 3. %s", CANDIDATE3);
printf("\n 4. %s", CANDIDATE4);
printf("\n 5. %s", "None of These");

printf("\n\n Input your choice (1 - 4) : ");
scanf("%d",&choice);

switch(choice){
    case 1: votesCount1++; break;
    case 2: votesCount2++; break;
    case 3: votesCount3++; break;
    case 4: votesCount4++; break;
    case 5: spoiledtvotes++; break;
    default: printf("\n Error: Wrong Choice !! Please retry");
        //hold the screen
        getchar();
}
printf("\n thanks for vote !!");
}

void votesCount(){
printf("\n\n ##### Voting Statics #####");
printf("\n %s - %d ", CANDIDATE1, votesCount1);
printf("\n %s - %d ", CANDIDATE2, votesCount2);
printf("\n %s - %d ", CANDIDATE3, votesCount3);
printf("\n %s - %d ", CANDIDATE4, votesCount4);
printf("\n %s - %d ", "Spoiled Votes", spoiledtvotes);
}

void getLeadingCandidate(){
printf("\n\n ##### Leading Candiate #####\n\n");
if(votesCount1>votesCount2 && votesCount1>votesCount3 && votesCount1 >votesCount4)
```

```

printf("[%s]",CANDIDATE1);

else if (votesCount2>votesCount3 && votesCount2>votesCount4 && votesCount2 >votesCount1)
printf("[%s]",CANDIDATE2);
else if(votesCount3>votesCount4 && votesCount3>votesCount2 && votesCount3 >votesCount1)
printf("[%s]",CANDIDATE3);
else if(votesCount4>votesCount1 && votesCount4>votesCount2 && votesCount4 >votesCount3)
printf("[%s]",CANDIDATE4);
else
printf("----- Warning !!! No-win situation-----");

}

int main()
{
int i;
int choice;

do{
printf("\n\n ##### Welcome to Election/Voting 2023#####");
printf("\n\n 1. Cast the Vote");
printf("\n\n 2. Find Vote Count");
printf("\n\n 3. Find leading Candidate");
printf("\n\n 0. Exit");

printf("\n\n Please enter your choice : ");
scanf("%d", &choice);

switch(choice)
{
case 1: castVote();break;
case 2: votesCount();break;
case 3: getLeadingCandidate();break;
default: printf("\n Error: Invalid Choice");
}
}while(choice!=0);

//hold the screen
getchar();

return 0;
}

```

Result

Choose Choice

```
##### Welcome to Election/Voting 2023 #####  
  
1. Cast the Vote  
2. Find Vote Count  
3. Find leading Candidate  
0. Exit  
  
Please enter your choice :
```

Choose Candidate

```
##### Welcome to Election/Voting 2023 #####  
  
1. Cast the Vote  
2. Find Vote Count  
3. Find leading Candidate  
0. Exit  
  
Please enter your choice : 1  
  
### Please choose your Candidate ###  
  
1. prajwal  
2. pankaj  
3. avishkar  
4. vishwjeet  
5. None of These  
  
Input your choice (1 - 4) : _
```


Vote for One

```
##### Welcome to Election/Voting 2023 #####
```

- 1. Cast the Vote
- 2. Find Vote Count
- 3. Find leading Candidate
- 0. Exit

```
Please enter your choice : 1
```

```
### Please choose your Candidate ###
```

- 1. prajwal
- 2. pankaj
- 3. avishkar
- 4. vishwjeet
- 5. None of These

```
Input your choice (1 - 4) : 1
```

Vote Count

```
##### Welcome to Election/Voting 2023 #####
```

- 1. Cast the Vote
- 2. Find Vote Count
- 3. Find leading Candidate
- 0. Exit

Please enter your choice : 1

```
### Please choose your Candidate ###
```

- 1. prajwal
- 2. pankaj
- 3. avishkar
- 4. vishwjeet
- 5. None of These

Input your choice (1 - 4) : 1

thanks for vote !!

```
##### Welcome to Election/Voting 2023 #####
```

- 1. Cast the Vote
- 2. Find Vote Count
- 3. Find leading Candidate
- 0. Exit

Please enter your choice : 3

```
#### Leading Candiate ####
```

[prajwal]

```
##### Welcome to Election/Voting 2023 #####
```

- 1. Cast the Vote
- 2. Find Vote Count
- 3. Find leading Candidate
- 0. Exit

Please enter your choice : _

Exit

```
0. Exit

Please enter your choice : 1

### Please choose your Candidate ###

1. prajwal
2. pankaj
3. avishkar
4. vishwjeet
5. None of These

Input your choice (1 - 4) : 1

thanks for vote !!

##### Welcome to Election/Voting 2023 #####

1. Cast the Vote
2. Find Vote Count
3. Find leading Candidate
0. Exit

Please enter your choice : 3

#### Leading Candiate ####

[prajwal]

##### Welcome to Election/Voting 2023 #####

1. Cast the Vote
2. Find Vote Count
3. Find leading Candidate
0. Exit

Please enter your choice : 0

Error: Invalid Choice
-----
Process exited after 159.8 seconds with return value 0
Press any key to continue . . .
```

Conclusion & Future Scope

- **Future Scope:**

1. We can provide a nomination fill up form in case it is needed. So, it is handfull for the administrator to get the details to nominee.
2. From security point of view, we can make it more robust using session end and secure login and registration procedure.
3. Enhance the Admin rights and their handling functionality over the data and database.
4. This project can be used to conduct the online voting system in any field or industry. The project can be expanded and several other features can also be included based on the requirement. People can share the opinion and they can also check the total voting given by many users.

Conclusion

This project can be used for voting since it overcome all the draw backs of ordinary voting machine also provide additional security. Its main advantage is that since fingerprints of every person is unique and hence this system completely reduces the chance of invalid votes. The system can be manufactured simply as well as cheap.

The voting system proposed by us is far more secure and efficient than the traditional voting system. Delays in results and vote manipulation are easily avoided in this system. The most notable aspect of our project is the use of two-factor authentication, which allows for easier and more precise voter verification. For the same reason, whenever a user registers, he or she must provide his or her voter id, which allows for easier verification of both voters and candidates. The proposed online system is expected to increase the transparency and reliability of the current electoral system. this project beneficial for electoin commission. Thanks to this project we can vote from any corner of the world

References

Websites:

- . <https://www.studytonight.com/c-projects/election-system-project>
- <https://www.lucidchart.com>