

**Department of Applied Sciences & Humanities**

MINI PROJECT SYNOPSIS

**Mini Voting System**

**Submitted in the fulfillment of the requirement for the Term Work of Engineering Physics**

**First Year Engineering Semester I & II**

***by***

**Group details**

|  |  |  |
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**Remark:**

**Signature of Project Coordinator**

**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.

**A voting machine** is a machine used to record votes in an election without paper. The first voting machines were mechanical but it is increasingly more common to use *electronic voting machines*. Traditionally, a voting machine has been defined by its mechanism, and whether the system tallies vote at each voting location, or centrally. Voting machines should not be confused with tabulating machines, which count votes done by paper ballot.

Voting machines differ in usability, security, cost, speed, accuracy, and ability of the public to oversee elections. Machines may be more or less accessible to voters with different disabilities.

Tallies are simplest in parliamentary systems where just one choice is on the ballot, and these are often tallied manually. In other political systems where many choices are on the same ballot, tallies are often done by machines to give faster results.

**Current voting machines**

An electronic voting machine is a voting machine based on electronics.

Two main technologies exist: opticalscanning and directrecording (DRE).

**Optical scanning**

In an optical scan voting system, or marksense, each voter's choices are marked on one or more pieces of paper, which then go through a scanner. The scanner creates an electronic image of each ballot, interprets it, creates a tally for each candidate, and usually stores the image for later review.

### **Direct-recording electronic (DRE)**



In a DRE voting machine system, a touch screen displays choices to the voter, who selects choices, and can change their mind as often as needed, before casting the vote. Staff initialize each voter once on the machine, to avoid repeat voting. Voting data are recorded in memory components, and can be copied out at the end of the election.

Electronic voting is the standard means of conducting elections using Electronic Voting Machines (EVMs) in India.[1][2] The system was developed and tested by the state-owned Electronics Corporation of India and Bharat Electronics in the 1990s.



**VVPAT used with Indian electronic voting machines in Indian Elections**



Control unit in EVM

**Design and technology**

The EVM was designed by two professors of IIT Bombay, A.G. Rao and Ravi Poovaiah.

Technology is being used more and more as a tool to assist voters to cast their vote

Technology for voter identification and authentication smart cards that record a person’s personal information and even biometric data, database management systems where the digitalized data is stored and managed biometric information, such as finger print identification

**Flowchart:**

Set counter to 0

Enter number of

Votes to count

If choice == 1

If choice == 2

Add to vote of A

Add 1 to vote of B

If choice == 3

Add 1 to vote of NOTA

Else invalid vote

If A > B && A > NOTA

Declare A is winner

If B > A && B > NOTA

Declare B is winner

If NOTA > A && NOTA > B

If A > B

If B > A

Declare election result & votes for all

**Algorithm:**

1. Start.
2. Enter number of votes to be counted.
3. Set counter to 0.
4. If choice == 1 then, increase vote of A by 1

else if choice == 2 then, increase vote of B by 1

else if choice == 3 then, increase vote of NOTA by 1

else choice is other then, declare invalid vote.

1. If A > B && A > NOTA, then declare A as winner

and go to step 7 directly

else if B > A && B > NOTA, then declare B as winner

and go to step 7 directly

else if NOTA > A && NOTA > B, then

go to step 6.

1. If A > B && A < NOTA then, declare A as winner

and go to step 7

else if B > A && B < NOTA then, declare B as winner

and go to step 7.

1. Declare result of the election.
2. Stop.

**Introduction about Input and Output**

**Input**

All computers accept inputs. An input is data that is entered into or received by a computer. This could include a user pressing a key on a keyboard, clicking a mouse to select something on screen or tapping a touch pad. Some inputs indicate to the computer what we want it to do, while others provide data for the computer to process.

In our program, we have taken input based on int type or integer type data. Integer type data consists of mainly whole number. Input is also based on choice-based data, where we have provided 3 type of choices from which the user can select.

**Output**

The output is how the computer presents the results of the process. Outputs can be returned to the user in many ways such as text on a screen, printed materials, or as sound from a speaker.In our program, the output is shown as text-based output data on the screen.

**Facilities required for proposed work:**

Since this project is mainly coding based, then different types of software are used for this project.

**Software used:** **Visual Studio Code**, also commonly referred to as **VS Code**, is a source-code editor made by Microsoft with the Electron Framework, for **Windows, Linux and macOS**. Features include support for debugging, syntax highlighting, intelligent code completion, snippets, code refactoring, and embedded Git. Users can change the theme, keyboard shortcuts, preferences, and install extensions that add additional functionality. **VS Code** also known as **Visual Studio Code** is mainly used for **C programming** to create the project and take input and display output.

**Language used:** Project has been developed using **C language**. C (pronounced like the letter c) is a general-purpose computer programming language. It was **created in the 1970s by Dennis Ritchie,** and remains very widely used and influential. By design, C's features cleanly reflect the capabilities of the targeted CPUs. It has found lasting use in operating systems, device drivers, protocol stacks, though decreasingly for application software. C is commonly used on computer architectures that range from the largest supercomputers to the smallest microcontrollers and embedded systems.

A successor to the programming language B, **C was originally developed at Bell Labs by Ritchie** between 1972 and 1973 to construct utilities running on Unix. It was applied to re-implementing the kernel of the Unix operating system. During the 1980s, C gradually gained popularity. It has become one of the most widely used programming languages, with C compilers available for practically all modern computer architectures and operating systems. C has been standardized by ANSI since 1989 (ANSI C) and by the International Organization for Standardization (ISO).

**Requirements:**

**Software Requirements:**

1. Windows 10 Professional (64 bit).
2. C Programming language.
3. VS Code (Visual Studio Code V 1.74.3)
4. MinGW-w64 (V 10.0.0)

**Hardware Requirements:**

1. Intel(R) Core(TM) i3-3217U CPU
2. HP Motherboard
3. 4 GB DDR3 1.80 GHz

**Usefulness:**

1. **Advanced technology:** It is an advanced technology used now a days. It increases the E knowledge of the users which is very necessary for current generation.
2. **Internet:** It is an online facility and hence very useful for the users. Voters can vote at any time through this online mode.
3. **E-Mails:** It can send the error report to a particular user if he/she entered false information.
4. **E-SMS:** People not having proper internet connection cannot check the emails so E-SMS provides facility of providing information through SMS mode.Today many websites provide free SMS to the mobile.

**Advantages:**

The advantages of online voting systems include increased efficiency, improved accuracy, and greater voter engagement compared to paper ballots.

1. **Increased Efficiency**

One of the most significant advantages of online voting systems is incredible efficiency. With traditional paper-based voting, there are a lot of steps involved, from printings ballots to counting votes by hand. You can avoid all of that with online voting.

With an online system, you can send out electronic ballots to all of your voters in just a few clicks. And once the voting period is over, the system will automatically tally the results, saving your organization a lot of time and money.

1. **Improved Accuracy**

Another advantage of online voting systems is that they tend to be more accurate than traditional paper-based systems. On the other hand, there’s always the potential for human error with paper ballots, whether it’s miscounting votes or mixing up ballots.

But with an online voting system, the voters are tallied automatically, so there’s no chance for human error, giving you peace of mind knowing that your results are accurate.

1. **Greater Turnout and Voter Engagement**

Another advantage of online voting is that it can increase voter turnout because it’s more convenient for voters to cast their ballots online than to have to go to a physical polling place. In addition, online elections can also improve voter engagement. It can be easy for voters to feel disconnected from the process of traditional voting. But with online voting, they can see the results in real-time, making them feel more engaged in the process.

**Disadvantages or Limitations:**

The two major concerns about online voting systems are election security and transparency.

1. **The Security of Online Voting Systems**

One of the most significant disadvantages of online voting systems is that they are not as secure as traditional paper-based systems because there’s always the potential for hackers to tamper with the results.

To improve election security, you should look for a system that uses encryption to protect the data. The system must get tested by independent security experts.

For e.g., we secure our online voting system using 256-bit encryption the same level of security that major banks offer. Plus, who doesn’t share user and voter data, which means your elections stay private and confidential.

1. **Lack Of Transparency**

Another disadvantage of online voting is that it can be lack transparency. With traditional paper-based voting, voters can see people counting the ballots. But with online voting, the process is entirely electronic, making it harder to verify the results.

It’s essential to look for an online voting system that offers transparency features. For e.g., some systems provide a live election results page where voters can see the results as they roll in. Our voting system also offers election audit, which means the voters cast using our system are auditable. We also provide independent verification, where an independent, third-party accountant ensures the election process is fair.

**Future scope:**

It is focused on studying the system of voting and to make sure that the peoples vote is count, for fairness in the elective positions. This will also produce

* Less effort and less labour 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.

**References:**

<https://medium.com/edge-elections/what-is-online-voting-d46cf7e5a152>

<https://electionbuddy.com/blog/2022/04/20/the-advantages-and-disadvantages-of-online-voting-systems/>