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Master of Computer Applications Micro Project Report

Submitted by

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Acknowledgement

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1. Introduction

Online voting systems are software platforms used to securely conduct elections. As a digital platform , they eliminate the need to cast votes using paper or having to gather in person . Presently voting is performed by using ballot paper and the counting is done manually , hence it consumes a lot of time . There can be possibility of invalid votes.

In our proposed systems , voting and counting is automated . It makes the election process easy and secure It also protect the integrity of every vote by preventing voters from being able to vote multiple times . Voting services helps to save time , stick to best practices , and meet internal requirements and/or ex ternal regulations , such as third-party vote administration needs .

Online voting is a simple tool that can provide profound change for organizations that use its full potential. The introduction of online voting systems can help create simpler, more secure, and more inclusive elections.

At its core, an online voting system aims to streamline the voting process, making it more accessible, efficient, and inclusive. By removing geographical barriers and time constraints associated with physical polling stations, online voting opens up opportunities for broader voter engagement and increased turnout. It caters to diverse voter demographics, including individuals with mobility limitations, those living abroad, and busy professionals who may find it challenging to vote in person.

Security and integrity are foundational principles of any online voting system. Robust encryption, authentication mechanisms, and audit trails are implemented to safeguard the confidentiality and anonymity of voters' choices while ensuring the integrity of the electoral process. Advanced cybersecurity measures protect against unauthorized access, manipulation, or tampering, thereby preserving the credibility and trustworthiness of election outcomes.

Moreover, an online voting system enhances the transparency and accountability of elections by providing real-time access to voting data and results. Election administrators can monitor the voting process, detect anomalies, and address any issues promptly, fostering public confidence in the electoral process.

2. Key features

Accessibility: Online voting systems enable voters to participate in elections conveniently from any location with internet access, eliminating the need to visit physical polling stations. This accessibility enhances voter turnout, particularly among individuals with mobility limitations, those residing abroad, or those unable to vote in person due to scheduling conflicts.

Convenience: By allowing voters to cast their ballots remotely using internet-connected devices such as computers, smartphones, or tablets, online voting systems offer unparalleled

convenience. Voters can vote at their preferred time and location, reducing the time and effort required to participate in the electoral process.

Scalability: Online voting systems are designed to accommodate a large number of voters simultaneously, making them suitable for elections of various scales, from local council elections to national or international elections. Scalability ensures that the system can handle increased demand during peak voting periods without experiencing downtime or performance issues.

Usability: User-friendly interfaces and intuitive design are key features of online voting systems to ensure that voters can navigate the voting process easily and make their selections accurately. Clear instructions and prompts guide voters through the ballot, reducing the likelihood of errors or confusion.

Flexibility: Online voting systems offer flexibility in terms of voting methods and options, accommodating diverse electoral formats such as plurality voting, ranked-choice voting, or proportional representation. Voters can choose their preferred .

3. Benefits

- Supercharged Time Management: Online voting catapults the efficiency of the electoral process into hyperdrive. Gone are the days of long queues, cumbersome ballot papers, and manual counting marathons. With just a few clicks, citizens can cast their votes swiftly and securely, saving invaluable hours for both voters and electoral officials alike. It's like conducting an election at warp speed!

- Crowd-Free Convenience: Bid farewell to the chaos of crowded polling stations and endless lines snaking around street corners. Online voting liberates voters from the shackles of physical attendance, allowing them to participate in elections from the comfort of their homes, offices, or even while lounging on a tropical beach. No more jostling with fellow citizens for a spot in the voting queue – just seamless, stress-free voting at your fingertips.

- Impeccable Precision, Guaranteed: In the realm of online voting, there's simply no room for error. With advanced digital technologies and fail-safe validation mechanisms in place, the online voting system ensures that every vote is cast accurately and counted with unwavering precision. Forget about the uncertainties of illegible handwriting, misplaced ballots, or human counting errors – the online voting system delivers flawless election results every time, leaving no margin for mistakes.

4. Abstract

The "Online Voting System" project aims to streamline the voting process by enablingcvoters to cast their votes online, eliminating the need for manual ballot papers and manual counting. By leveraging computer technology, the system saves time, minimizes errors in counting, and reduces the possibility of invalid votes. This system is particularly beneficial during times of pandemic, as it eliminates the need for physical contact and allows

for efficient election management. Users can easily vote for candidates online and access details about candidates and voters. Compared to traditional paper-based voting systems, the online voting system offers a faster, more accurate, and convenient voting experience.

5.Existing System Study

In our country , we are following the traditional paper based voting system or EVMs which has several drawbacks .Whatever the system we follow , we need to move to the polling stations to cast the vote and it leads to gathering of people in larger number. Prior to an election, eligible citizens must register to vote through designated government offices or voter registration drives. This process often involves providing proof of identity and residence to establish eligibility.On Election Day, voters present themselves at assigned polling stations and provide identification documents to verify their identities before receiving a ballot.While traditional voting systems have long been the cornerstone of democratic elections, they may face challenges such as long

lines at polling stations, logistical issues with ballot distribution and counting, and concerns about ballot security and integrity. Despite these challenges, traditional voting systems remain a fundamental aspect of democratic governance, providing citizens with the opportunity to participate directly in the democratic process.

6.Software Requirements

Operating System: Windows,Linux,Mac

Languages:PHP,HTML,CSS,Java Script

Database:MYSQL

Server:Apache

Tools:Visual Studio Code,XAMPP

Hardware Requirements:

Processor:core i5

RAM:8GB

Hard disk:64GB

7.Modules

Registration and authentication

Registration:

The registration process involves capturing essential information from eligible voters, such as their full name, date of birth, address, and any other required identification details.

Registrants may also need to provide proof of eligibility, such as citizenship or residency documents, depending on the election laws and regulations.

The registration system should validate the information provided to ensure its accuracy and completeness.

Once registered, voters may receive a unique voter ID or registration number for future reference.

Authentication:

Authentication mechanisms verify the identity of registered voters before allowing them access to the voting system.

Common authentication methods include:

Username and password: Voters create a username and password during registration and use them to log in securely.

Biometric verification: This involves using unique biological traits such as fingerprints, iris scans, or facial recognition to authenticate voters.

Multi-factor authentication (MFA): This method combines two or more authentication factors, such as a password and a one-time code sent to a registered mobile device, for enhanced security.

Authentication ensures that only legitimate voters can access the voting interface and prevents unauthorized access or tampering with the voting process.

Ballot Generation and Management:

Candidate Management:

This component involves collecting and organizing information about candidates participating in the election.

Administrators or election officials enter candidate details into the system, including their names, party affiliations, photos, and brief biographies.

Candidate data should be stored securely in a database, with appropriate access controls to prevent unauthorized modifications.

The system should also support adding, updating, or removing candidates as needed, especially in the case of candidate withdrawals or disqualifications.

Table Generation:

Table generation refers to the process of formatting the ballot to present the list of candidates and voting options to voters.

Depending on the election format, the ballot may include different sections for various offices or positions being contested.

The ballot design should be intuitive and user-friendly, with clear instructions for marking choices and indicating preferences.

The system should also ensure the accuracy of the ballot, verifying that all eligible candidates are included and that the ballot layout complies with electoral rules and regulations.

Admin Dashboard and Management:

Voters Management:

This module provides administrative tools for managing voter registrations and identities.

Administrators can use the system to add new voters, update voter information (e.g., address changes), and verify voter eligibility.

The system should maintain a centralized database of voter records, allowing administrators to search for voters, view their registration status, and address any registration issues or discrepancies.

Security measures should be in place to protect voter data and prevent unauthorized access or tampering.

Result Generation:

Result generation is the process of tabulating and calculating the election results based on the votes cast by voters.

The system aggregates voting data from all registered voters, tallying votes for each candidate or ballot option.

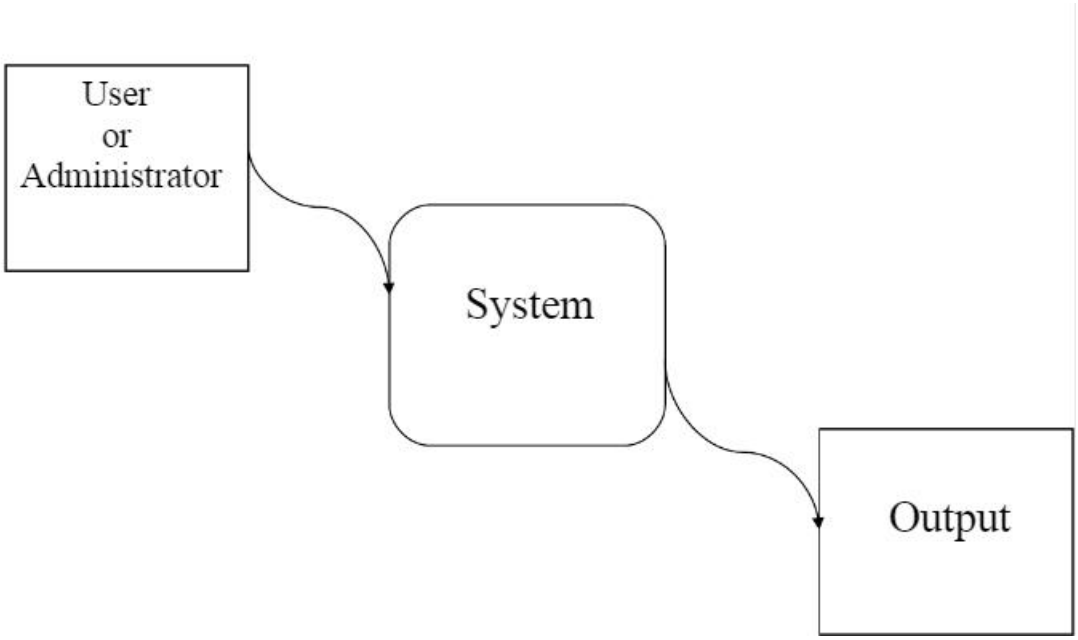
Depending on the election format, the system may support different voting methods such as plurality voting, ranked-choice voting, or proportional representation.

Once all votes are counted, the system generates official election results, including the winners for each contested position and any relevant statistics or analyses.

Result data should be stored securely and made available to stakeholders, such as election officials, candidates, and the public, to ensure transparency and accountability in the electoral process.

8.Data Flow Diagram

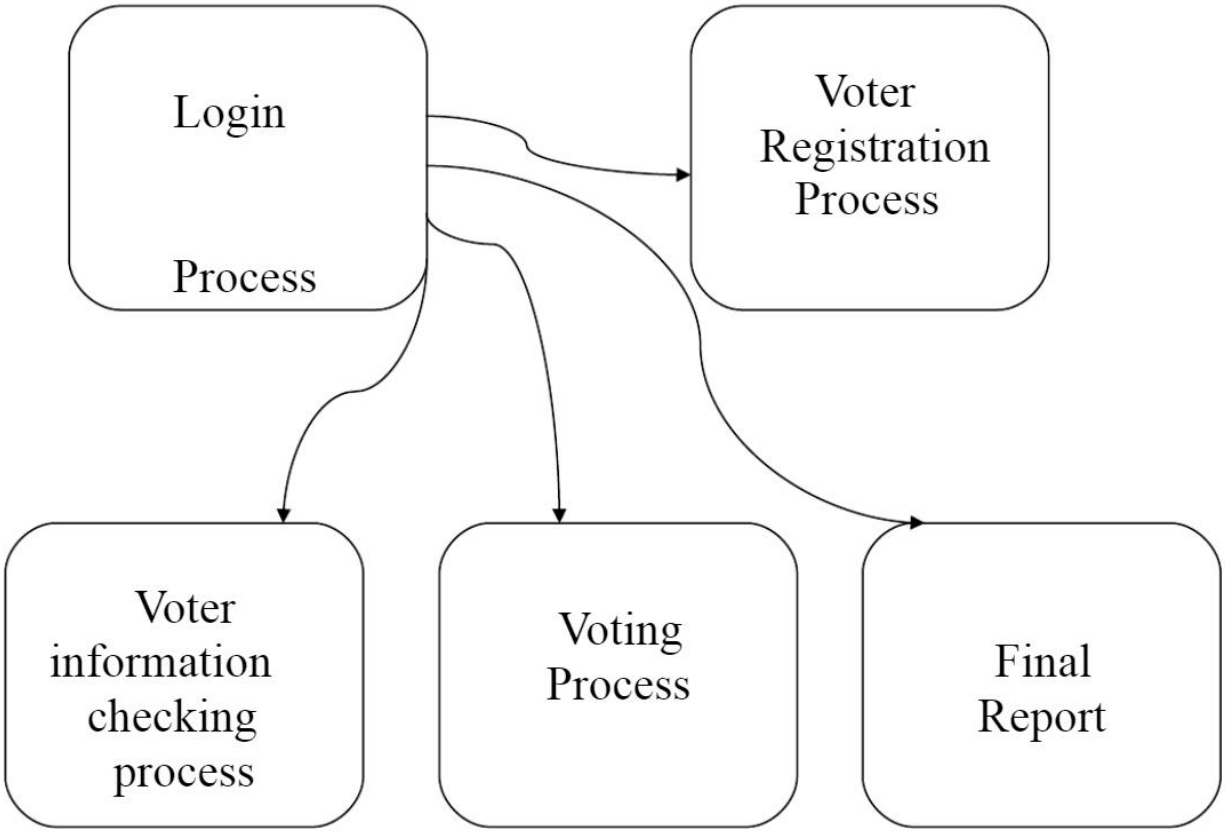
DFD: Level 0



DFD Level-0

The above diagram is a 0-Level DFD that only shows the flow of data between the various and the system. In Online Voting System the Administrator is the controller of the system and all the decisions are made by him. The Administrator can handle the entire voter and the details, voting details etc and view details of them and he can update the details also.

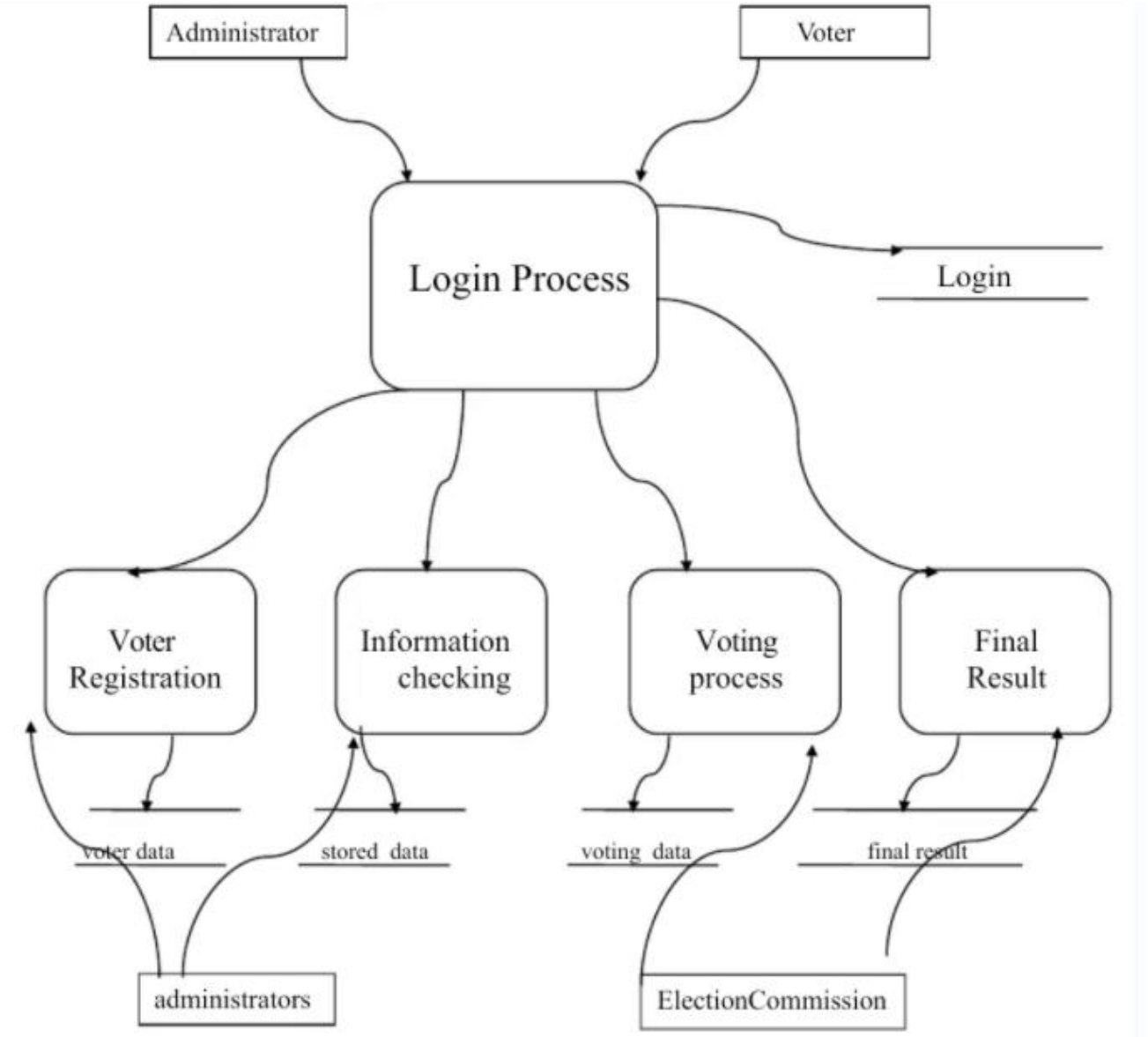
DFD: Level 1



DFD Level-1

The above diagram is a 1-Level Data Flow Diagram for the Online Voting System.According to this DFD various process are done after login process. The Administrator can register voter. The ELECTION COMMISION can register the voters and voter can use their voting rights. The voter can view the final report after giving vote.

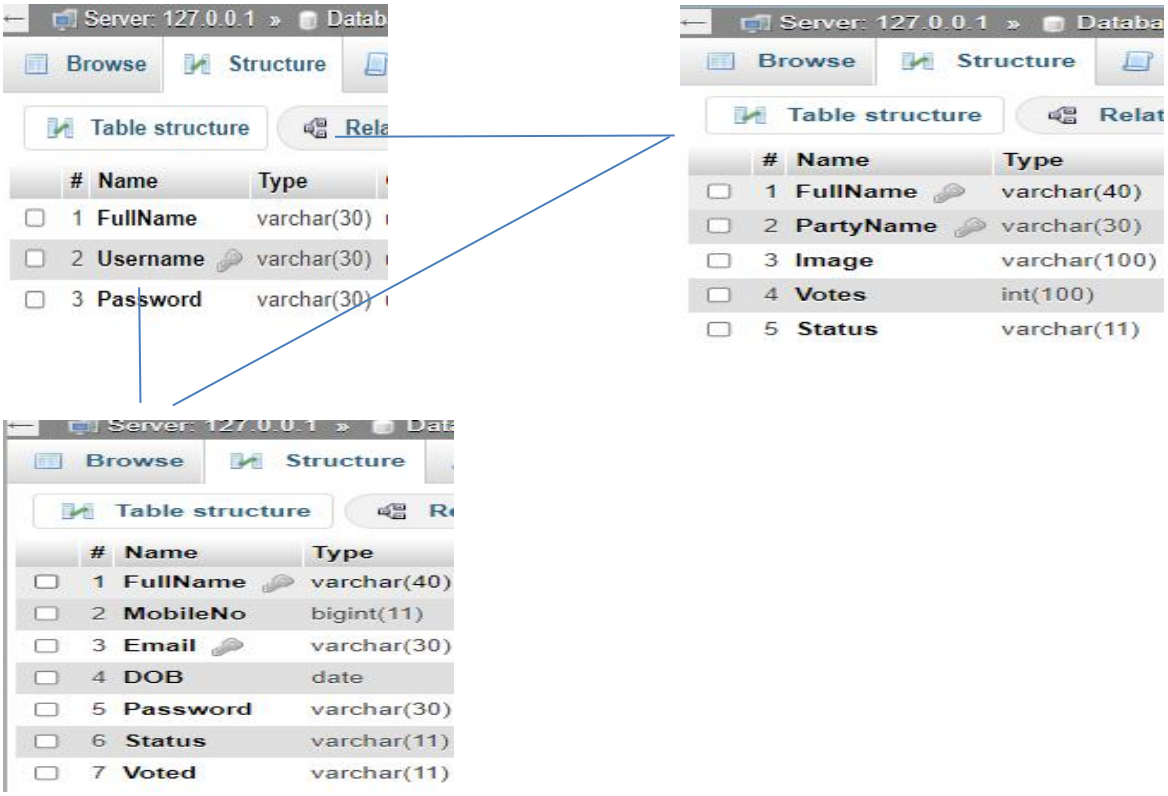
DFD: Level 2



DFD Level-2

The above diagram is a 2-Level Data Flow Diagram for the Online Voting System. According to this DFD the Administrator can register the voter information. Administrator can allow or denies the voter. A voter can give vote if all the information filled by him\her are correct.

9. ER diagram



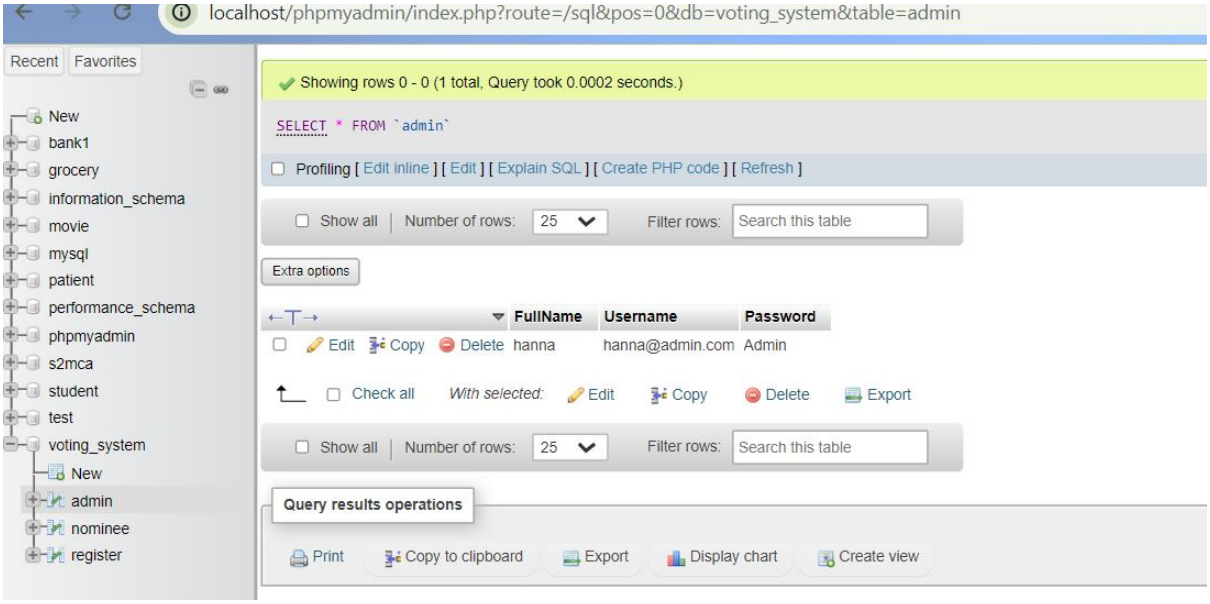
10. Table Designs

This project uses 3 tables:

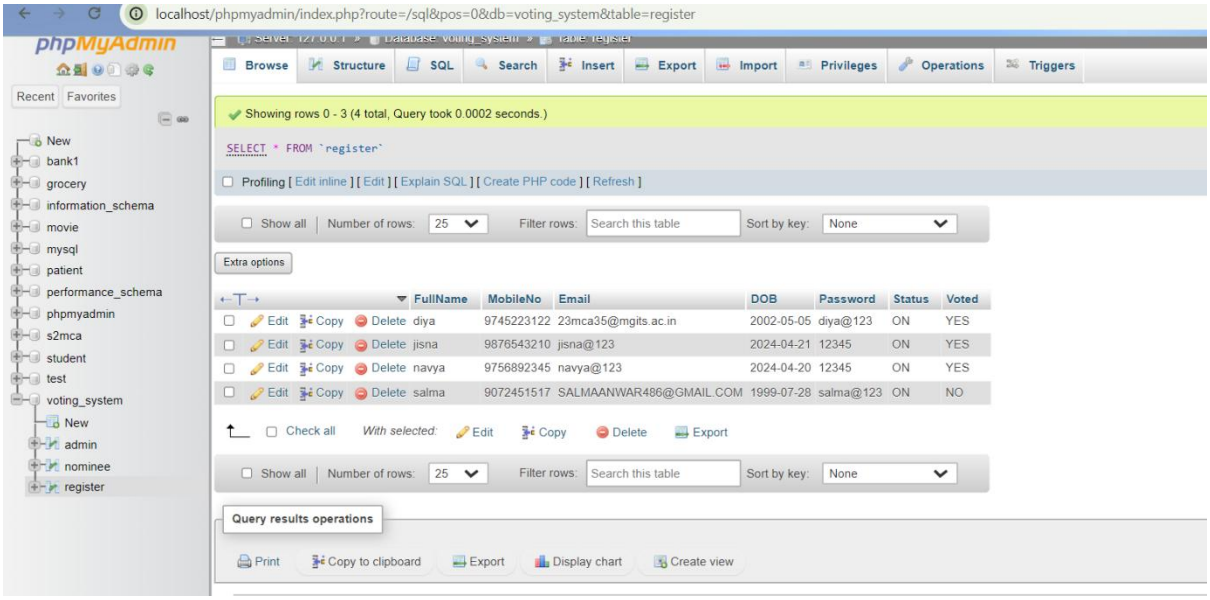
- Admin
- Nominee
- Register

11. Screenshots

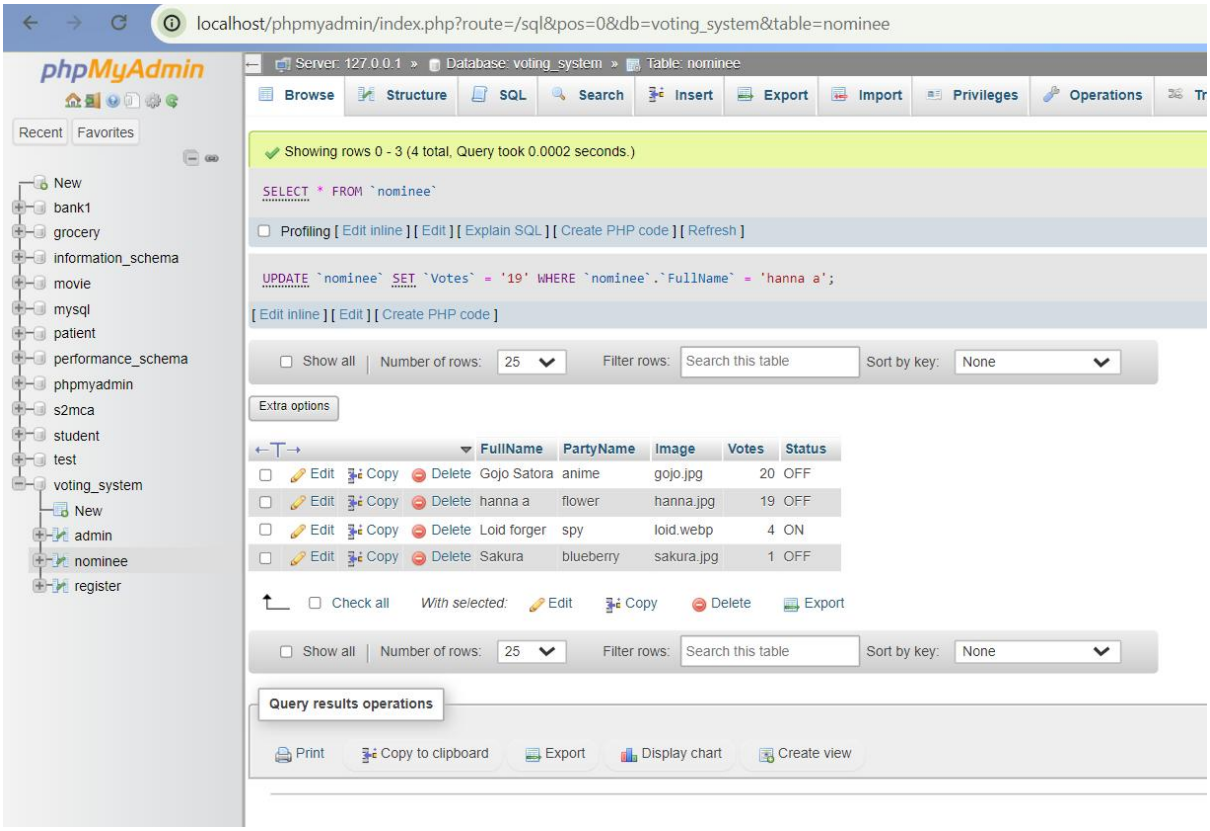
Admin Table



Nominee Table

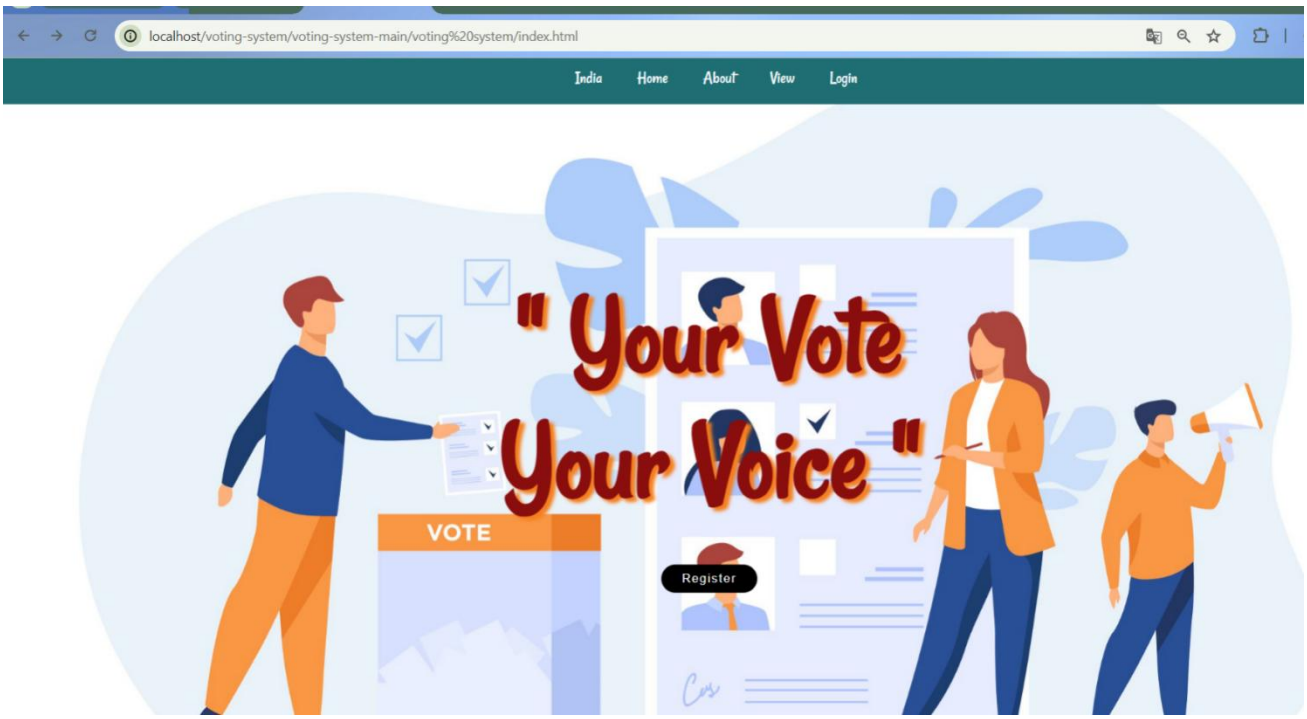


Register Table

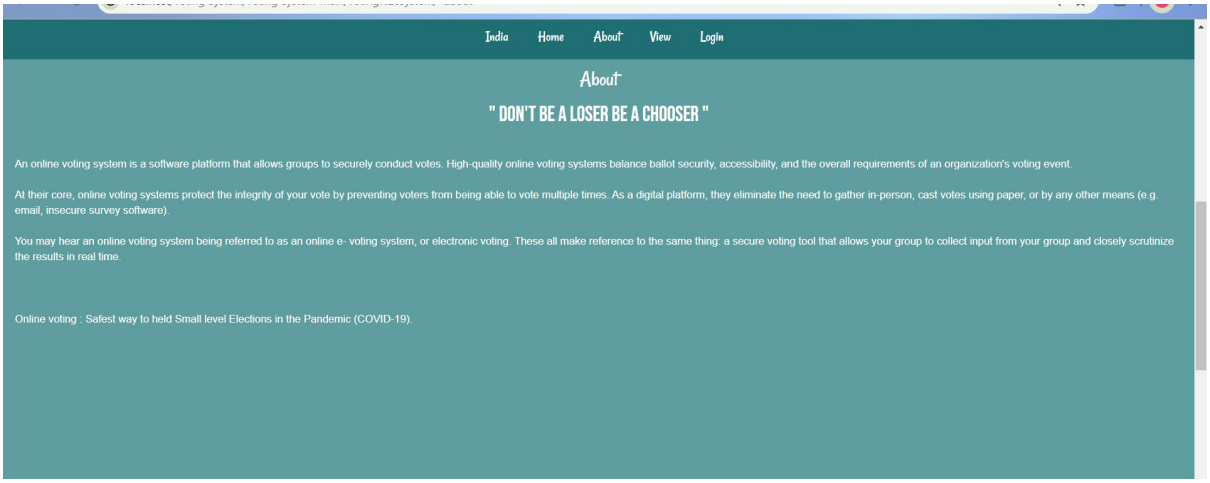


Screenshots

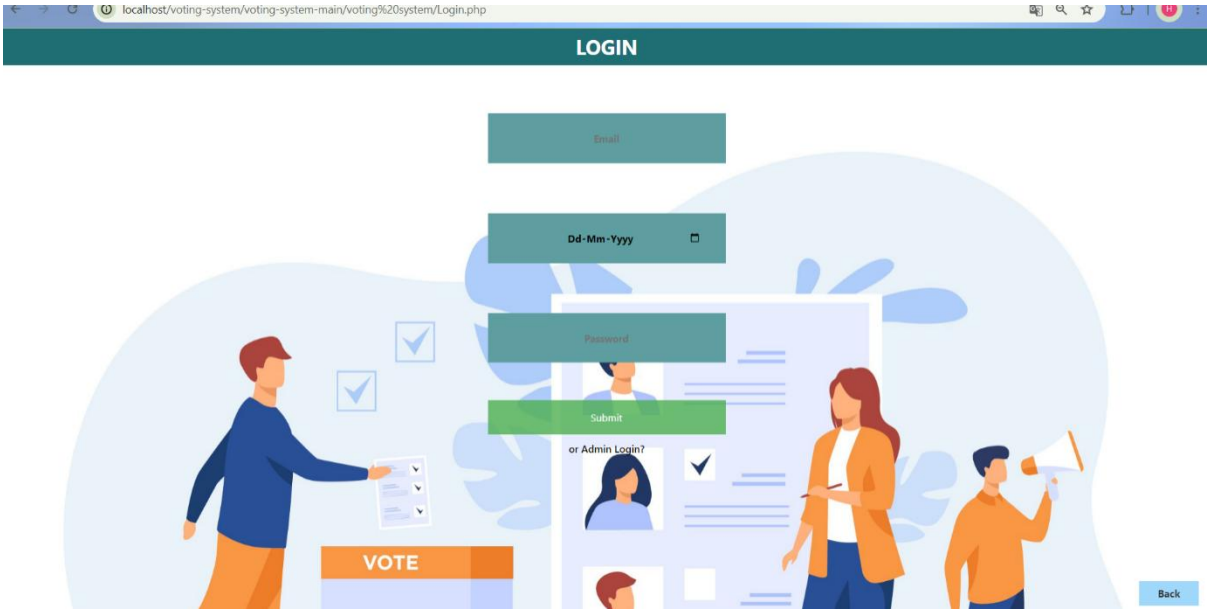
Index Page



About

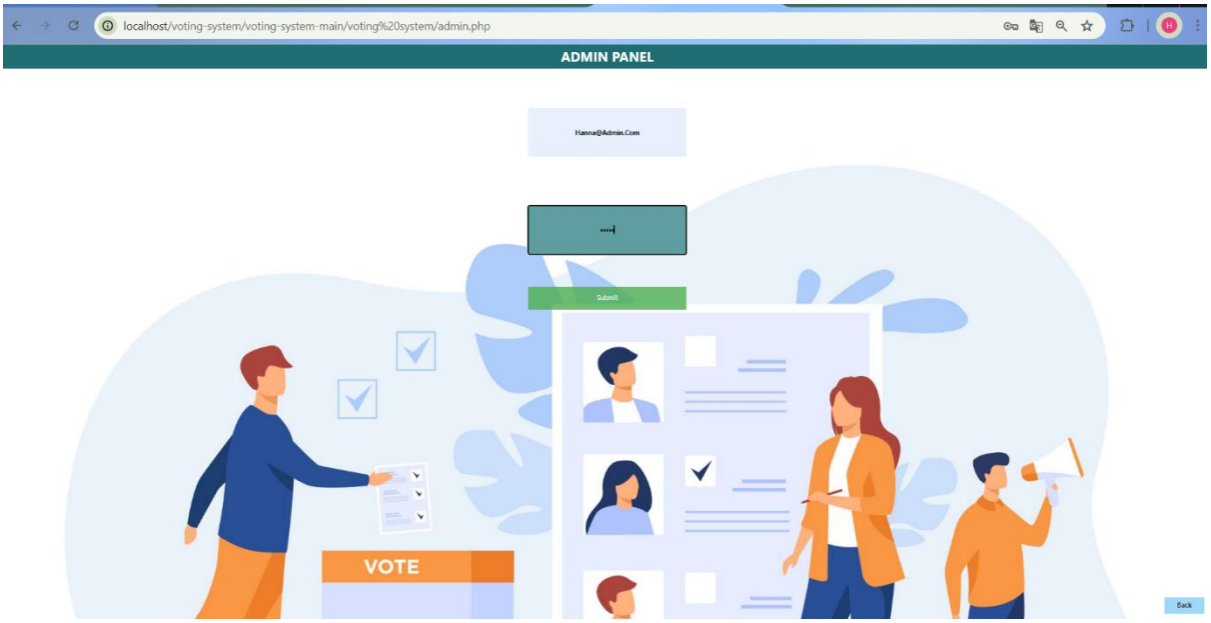


Login page



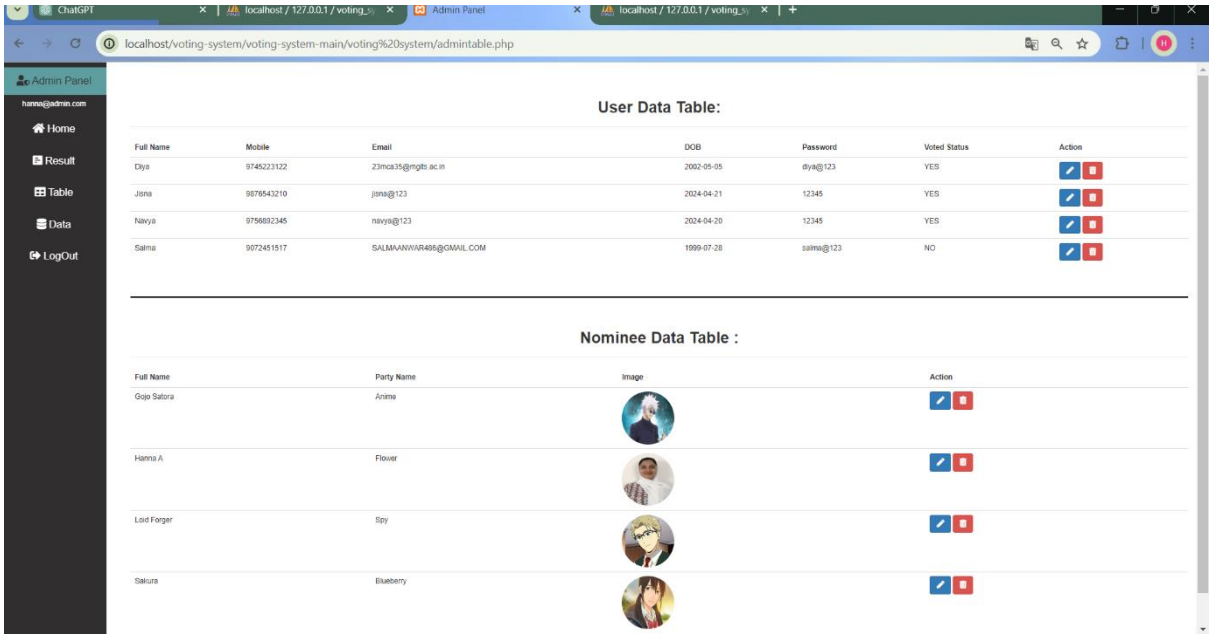
Registration

Admin

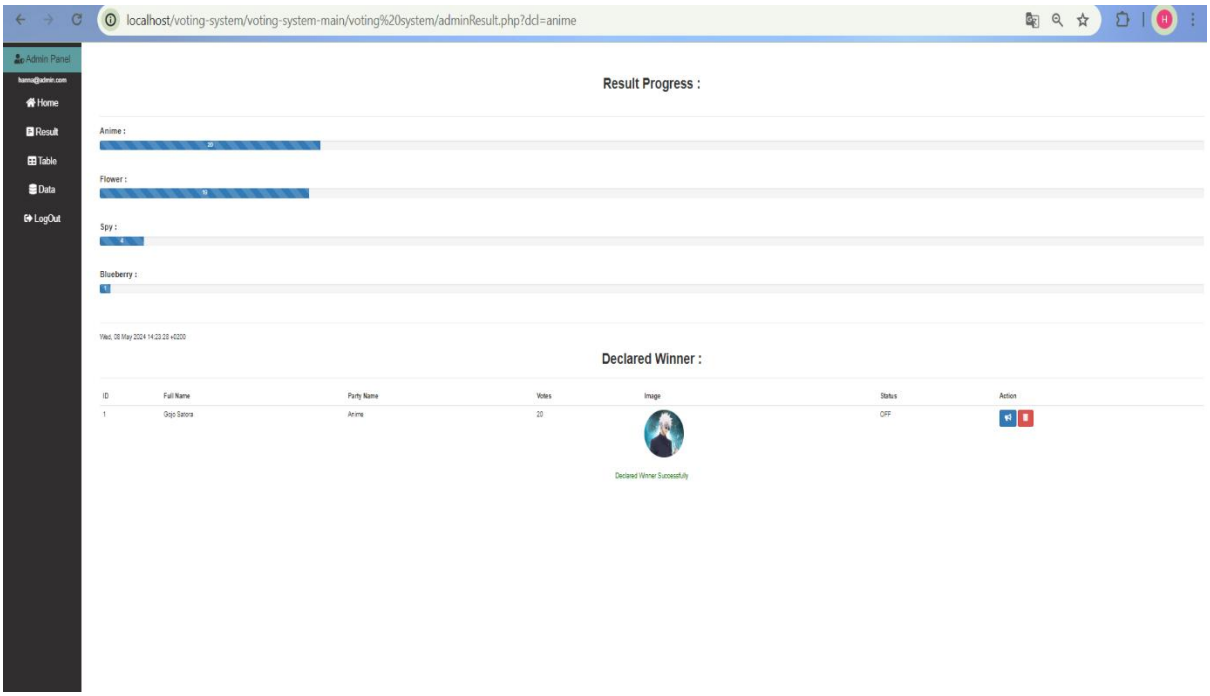


A

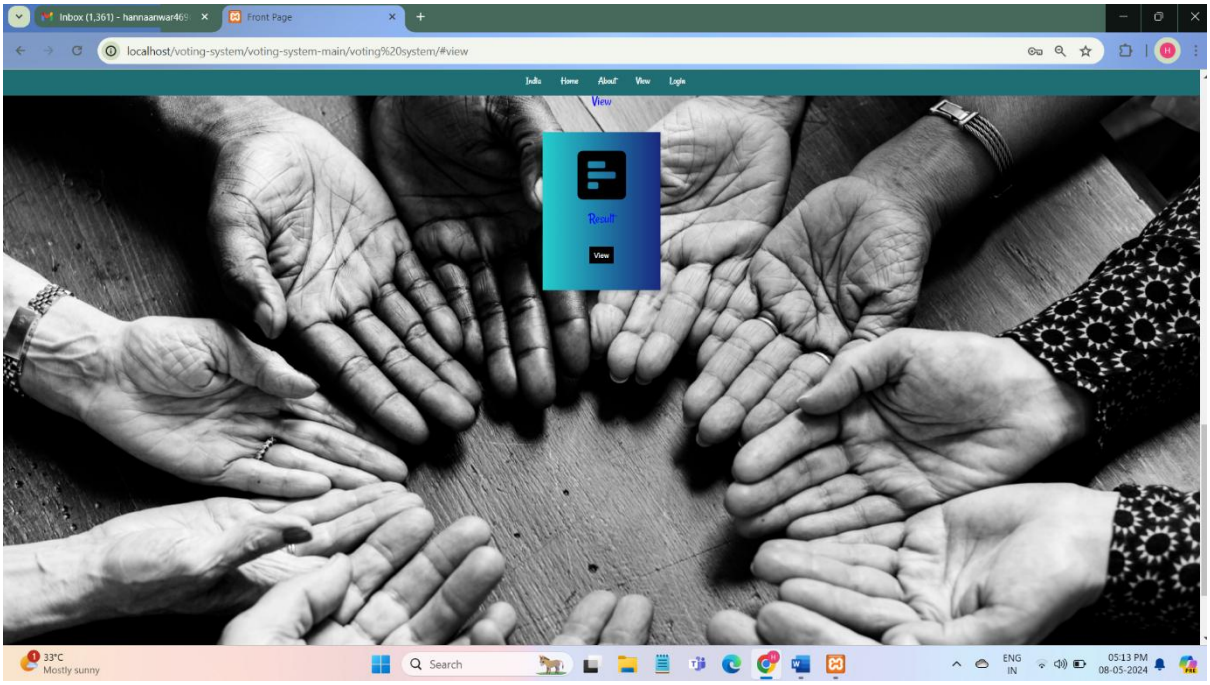
Nominee and user

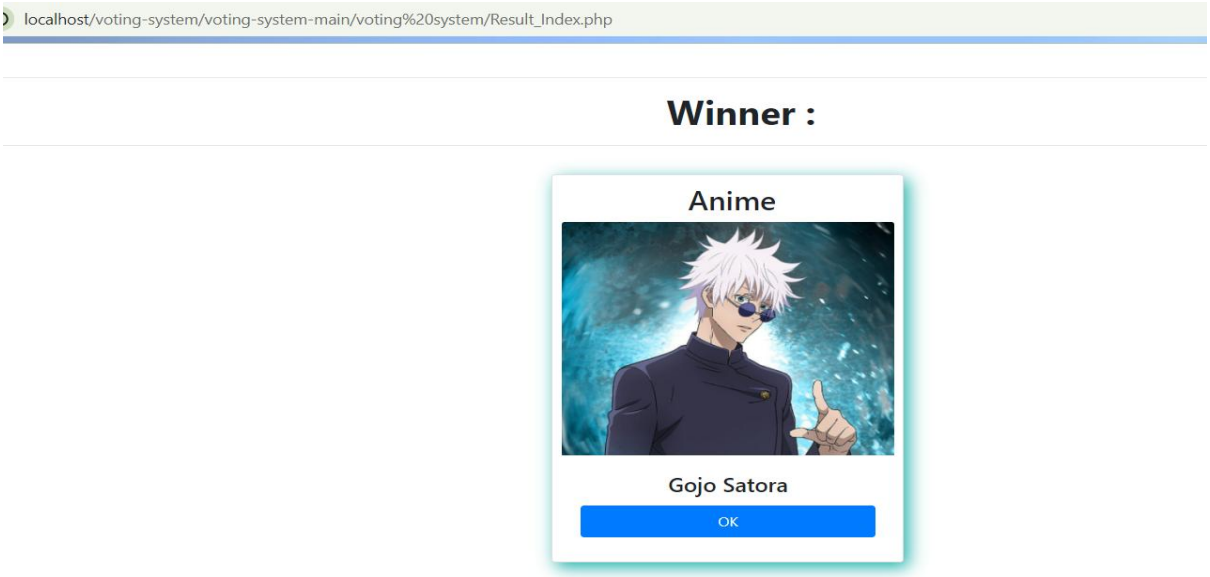


Result



Resul viewing Page





12. Conclusion

In conclusion, online voting systems represent a transformative advancement in the democratic process, offering unparalleled accessibility, convenience, and security for voters. By leveraging digital technology, these systems enable voters to participate in elections remotely from any location with internet access, overcoming traditional barriers to electoral engagement such as geographical constraints and scheduling conflicts. The key features of online voting systems, including robust security measures, anonymity safeguards, and scalability, ensure the integrity and reliability of the voting process while enhancing transparency and accountability. While challenges and concerns remain, ongoing innovation and improvements in online voting technology continue to strengthen the democratic principles of inclusivity, transparency, and participation. As societies embrace digitalization and seek to modernize electoral systems, online voting systems play a crucial role in advancing democratic governance and empowering citizens to exercise their fundamental right to vote in the digital age....