Database Project Proposal Form

Student's Details

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Lab Engineer Details

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Area of Interest			

Semester Project Details

• **Project Title**	
ONLINE VOTING MANAGEMENT SYSTEM	
• **Project Summary**	**(less than 200 Words)**
The purpose of the Online Voting Management System is to enable a safe and effective electronic voting procedure. Key components of the system are the administrator, voters, candidates, positions, and votes. By setting up voter and candidate accounts and supervising the election procedure, the administrator maintains the system. In order to vote for their favorite candidates, who are linked to particular election positions, voters must register using a special voter ID and password. While positions specify the responsibilities up for grabs with features like description, priority, and maximum votes, candidates each have attributes like first and last names, photos, platforms, and position IDs. To guarantee their validity, votes are tracked and verified. By using authentication procedures for administrators and voters, the system guarantees security. By eliminating manual labor and guaranteeing election accuracy and fairness, this system seeks to offer an online voting platform that is transparent, easily accessible, and impervious to fraud.	
• **Project Objectives**	
•**Ensure Secure Voting Process** – Implement authentication mechanisms to verify voter identities and prevent unauthorized access. •**Enhance Election Transparency** – Maintain accurate records of candidates, voters, and votes to ensure a fair and unbiased election process.	

- **Streamline Election Management** – Provide an easy-to-use interface for the **Admin** to create and manage voter and candidate profiles, election positions, and results.
- **Enable Remote Voting** – Allow registered voters to cast their votes from any location, improving accessibility and participation.
- **Prevent Duplicate and Fraudulent Votes** – Implement checks to ensure that each voter can cast only one vote per election.
- **Automate Vote Counting and Result Generation** – Reduce manual effort and human errors by automating vote tallying and result announcements.
- **Enhance User Experience** – Provide a simple and intuitive system for voters to log in, select their preferred candidates, and submit votes effortlessly.
- **Maintain Data Integrity and Security** – Store voter and election data securely to prevent tampering, unauthorized modifications, or loss of data.
- **Support Role-Based Access Control** – Restrict functionalities based on user roles (Admin, Voter, Candidate) to ensure appropriate system access.
- **Generate Reports and Analytics** – Provide real-time statistics on voter turnout, votes per candidate, and final results for transparency and decision-making.

• **Project Implementation Tools**		
•SQL Server Management Studio 20		
• **Final Deliverable of the Project**	(Please Tick one of the following)	
Software Base Model	Other (if Yes Mention)	

• **Please Specify Detail of Project**
Using SQL Server administration Studio (SSMS) as the main database administration tool, the Online Voting Management System is a web-based application created to enable a safe, open, and effective voting process. Conventional voting procedures, including using paper ballots, frequently result in mistakes, hold-ups, and security threats. By enabling registered voters to safely log in, choose candidates, and cast their ballots, this system automates the voting process. The three primary roles in the system's architecture are Administrator, Voter, and Candidate. Voter registration, candidate approvals, election setup, and result generation are all under the administrator's purview. Candidates can register for elections and display their campaign information, while voters can safely check in, confirm their eligibility, and cast their ballots. Voter records, candidate information, election results, and authentication logs are among the electoral data that the system securely stores and retrieves using SQL Server. The database is meant to guard against fraud, illegal access, and duplicate votes. The voting process is guaranteed to be accurate and transparent thanks to the system's real-time, automated results calculations and comprehensive election reports. SQL Server is linked with the system's backend to manage data processing and storage effectively. Voter credentials, candidate profiles, election information, and vote records are all stored in tables that preserve data integrity. To ensure that each voter can only cast one vote every election, stored processes and triggers are used to validate voting rules. Election results are promptly retrieved using

SQL queries, and views are made to present organized data for simple examination. Only authorized users can access the system thanks to SQL Server security capabilities that govern user authentication. In order to monitor voting activity and guard against data manipulation or unauthorized changes, the system also keeps audit logs. Incomplete or incorrect entries are avoided by using SQL transactions to guarantee that votes are committed only upon successful validation. In order to reduce redundancy and boost performance, the database design adheres to normalization principles, guaranteeing seamless operations even during periods of high voter participation.

• **Equipment required for Making prototype/working model**	(Please indicate in tabular form the required equipment along with the estimated cost)

Item	Description	Quantity
		Total

• **Benefits of the Project**	(Please Specify Direct/Indirect benefits)

- **Enhanced Security** – Prevents unauthorized access, duplicate voting, and data tampering using SQL Server authentication and role-based access control (RBAC).
- **Automated Vote Counting** – Eliminates manual counting errors and speeds up result generation.
- **Real-time Data Monitoring** – Admins can track voting progress and turnout through SQL queries and dashboards.
- **Data Integrity & Backup** – SSMS ensures secure storage, backup, and recovery to prevent data loss.
- **Transparency & Accuracy** – Generates tamper-proof results using SQL Server Reporting Services (SSRS).
- **Scalability** – Can handle a large number of voters efficiently with optimized SQL indexing.

• **Project Start Date**	
• **Project Finish Date**	

Approved By Project Supervisor: _____