Online national polling software requirements specification

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Purpose: Online National Polling The goal(System is a system which enables all citizens to cast their vote online. is to increase the voting percentage

across the country, as in the present system people have to visit the booth to cast their vote and those people who live out of their home town are not able to cast vote during the elections. So due to this the voting percentage across the country is very less. Through this software those people who live out of their home town will also be able to cast their votes as this system is online. Scope: - The software produced will be an online voting system. - The software will be used by citizens to cast their vote online, it will also calculate the voting percentage and may be used by candidates for online campaigning. It will be used for the registration of voter and for filling nomination forms of the candidates. - The main objective of this software is to increase the overall voting %. It will be used at the time of elections. Through this software people get their voter-id card easily and each voter will get a unique id no. to caste their valuable vote. - It will maintain the database of all the eligible citizens and candidates. - It will manage all the account details of the voters such as citizen name, date of birth, their constituency area, region, state, login id and password of the voter and also of the candidate from one central location. Abbreviations: - HTML: Hypertext Markup Language is a markup language used to design static web pages. - EJB: Enterprise Java Beans. - J2EE: Java 2 Enterprise Edition is a programming platform– part of the Java Platform–for developing and running distributed multitier architecture Java applications, based largely on modular software components running on an application server. - DB2: DB2 Database is the database management system that delivers a flexible and cost effective database platform to build robust on demand business applications. - WAS: Web sphere application server is an application server that runs business applications and supports the J2EE and web services standards. - WSAD: Web

sphere studio application developer is a toolkit which is designed for the creation of more complex projects, providing fully dynamic web application utilizing EJB's. This consist of EJB tools , CMP , data mapping tools & a universal test client that is designed to aid testing of EJB's. - HTTP: Hypertext Transfer Protocol is a transaction oriented client/server protocol between web browser & a Web Server. - HTTPS: Secure Hypertext Transfer Protocol is a HTTP over SSL (secure socket layer). References: | S. No. | Document Title/Book | Source/Author | | 1. | IEEE SRS Format | Google Search Engine | | 2. | Project Scenario | https://www. tgmc. in/project_scenario. php | | 3. | Sample SRS | http://www. tgmc. in/resource. php | | 4. | Software Engineering | Roger S. Pressman | | 5. | Database System Concepts | Abraham Silberschatz | | | | Henry F. Korth | | | | S. Sudarshan | Technologies: - J2EE : Application architecture - DB2 : Database - WAS : Web server - Rational : Design tool Overview: SRS will include two sections: - Overall Description will describe major components of the system, interconnection and external interfaces. - Specific Requirements will describe the functions of actors, their role in the system and constraints. Overall Description: Product Perspective - [pic] - The web pages (XML/JSP) are present to provide the user interface on customer client side. Communication between customer and server is provided through HTTP/HTTPS protocols. - On the server side web server is for EJB and database server is for storing the information. Software Interface: - Client on Internet: Web Browser, Operating System (any) - Web Server: WAS, Operating System (any) - Data Base Server: DB2, Operating System (any) - Development End: WSAD (J2EE, Java, Java Bean, Servlets, XML), DB2, OS (Linux), Web Server. Hardware Interface: | Client side | | | Processor | Ram | Free Disk Space | | Web Browser (any) | Pentium II at 500 MHz | 256 MB |

100 MB | | Server side | | Web Sphere Application Server (Community | Pentium III at 1 GHz | 256 MB | 120 MB | | Edition) | | | | | DB2 Express-c V9. 7 | Pentium III at 1 GHz | 512 MB | 512 MB | Communication Interface: - Client on Internet will be using HTTP/HTTPS protocol. Product Functions: - Online registration for the voter id card which will be verified by the field officers (address and identity validation) and after receiving the field officer's report only the registration will be validated and a voter id will be issued (a photograph will have to be uploaded). - Those already having a voter id card can register for the online voting system, they will use their voter id as their user name and a separate password will be used for secure authentication. - The election commission will be able to use the site to let the candidates register for their nomination on the site and their officers will validate it. Candidates can run their election campaign through forums and chat-room. - A detailed profile of all the candidates, constituency wise will be maintained so that voters can always know about the candidates of their area. - Once registered when ever polling is done in any area that areas' people will be able to vote for their favorite candidates. - It will devise a mechanism that ensures duplicates voting (online & offline) is not happening. - The system would show the current statistics as well on the web site about how many votes which candidates have got. - Later when the voting ends the administrator can add the manual poling results to the database to calculate the final results which will immediately be flashed on the site. - Candidates will be able to modify selected portions of their profile after registration for nomination like the promises they make about the things to do after winning the election, their previous works, their experiences and a comprehensive about me, etc. User Characteristics: - Every user should be comfortable of

working with computer and net browsing. - Every user must have basic knowledge of English too. Constraints: - GUI is only in English. - This system is working for single server. - Limited to HTTP/HTTPS. - User should have basic knowledge of computer. Use case model survey: [pic] 1. General Public: The citizens of the country who are eligible for casting vote. - Register for voter id — The general public will register themselves for voting through the online system. They will provide their details which will be submitted to the administrator and will be maintained as database in the system. - Register for Online Voting System — Those who already have voter id, they will register themselves for online voting system and they will use their voter id as their user name and separate password will be used for secure authentication. - Cast vote — The citizens will cast their votes for their favorite candidates online through a secure system. - View own details — The voters will view their own details which they filled up at the time of their registration. 2. Administrator: Responsible for maintaining all the databases, generating results of polling and registering candidates for elections. - Register candidates — Administrator will register the candidates who will nominate for the constituency area. - Add manual polling result — The results of voting will be calculated by the administrator manually and will be added to the website. The name of the winner from each constituency and the city wise, state wise and constituency wise percentage voting will be made available on the website. - View all reports — The reports of election such as percentage voting done, no. of votes that different candidates got, the statistics of all the elections done and reports containing details of voters, candidates based on many criterions. - Validation of voters — Administrator will validate the online registration of the voters. The voters

will be qualified or disqualified for polling according to the validation by the field officer. 3. Candidate: Register for nomination, add details to profile, modify profile and campaign for elections. - Register for nomination — The candidate will register for nomination through the website. - Add details to profile — Candidates will enter their details in their profiles such as manifesto, experience - Modify profile — Candidates will be able to modify selected portions of their profile after registration for nomination. - Campaign for elections — The candidates will campaign for the elections through the website. - View own details — The details filled by the candidates at the time of registration will be viewed by them for future references. 4. Field Officer: Validate the registration of voters and view all reports. - Generate reports for registration validation — The field officer will verify the documents which the voter will bring to him for validation and will generate a report after verifying them which will be sent to the administrator who will finally validate the voter for registration. - View all reports — The reports of election such as percentage voting done, no. of votes that different candidates got, the statistics of all the elections done and reports containing details of voters, candidates based on many criterions. Architecture diagram and database design - [pic] ARCHITECTURE DIAGRAM [pic] DATABASE DESIGN Assumptions and dependencies: - The end user should have a basic knowledge of English and computer usage. - Administrator is created in the system already. - The voting results will be calculated by the administrator manually. - Roles and tasks are predefined. Specific Requirements: Use case reports — 1. General Public: The citizens of the country who are eligible for casting vote. - Register for voter id — The general public will register themselves for voting through the online system. They will provide their details which will be submitted to

the administrator and will be maintained as database in the system. - Register for Online Voting System — Those who already have voter id, they will register themselves for online voting system and they will use their voter id as their user name and separate password will be used for secure authentication. - Cast vote — The citizens will cast their votes for their favorite candidates online through a secure system. - View own details — The voters will view their own details which they filled up at the time of their registration. Register for voter id: [pic] - Name of use case — Fill up details Description — The voter will fill the details in their registration form. These details will later be verified by the field officers. Preconditions — 1. Administrator is already logged in. 2. Minimum age of voter should be 18 years. Normal flow of events — 1. Filling in the registration form. 2. Storing details in the database. Alternate flow of events — 1. A message will appear if any entry of voter registration form is left blank or not according to correct data type. 2. The administrator will take the action accordingly. Post condition — The general information of voter will be stored in database. [pic] - Name of use case — obtain voter id and password Description — A unique voter id and password will be provided to every voter on the basis of the verification of their registration form by the field officer. Using this voter id and password the voter may get the rights to participate in online voting. Preconditions — 1. The registration form should be filled up properly. 2. The documents should be provided to the field officer within time. Normal flow of events — 1. Verification of documents by the field officer. 2. Administrator will provide the voter id and password. Alternate flow of events — If the documents have not been submitted within time, the field officer will not inform the administrator for further processing. Post condition — The voter

will obtain the id and password. [pic] - Name of use case — vote for their favorite candidate Description — The citizens will be able to view the profiles of all the candidates from their constituencies and vote for their favorite candidate. Precondition — 1. The voter should be logged in using his/her voter id and password. 2. A list of candidates from the particular constituency should be provided. Normal flow of events — 1. The voter will have to log in with their id and password to participate in the election. 2. Choose their favorite candidate. 3. Cast their valuable vote to the candidate. Alternate flow of events — 1. If he/she enters the wrong id or password an error message will be displayed. 2. The vote may be casted only once. Post condition — To avoid discrepancies, the voter id of the user will be expired after casting the vote for a limited period of time. Register for online voting system: [pic] - Name of use case — obtain password Description — Those people who already have their voter id will register themselves for online voting and will get the new password from the field officer. Precondition — The voter should already have a voter id. Normal flow of events — 1. They will register for online voting system with their voter id and obtain a new password from the field officer. 2. They will be eligible to cast their vote. Alternate flow of events — If the voter will not register with the voter id for online voting, he/she cannot cast the vote in the elections. Post condition — none - Name of use case — cast vote for their favorite candidate Description — The citizens will be able to view the profiles of all the candidates from their constituencies and vote for their favorite candidate. Precondition — 1. The voter should be logged in using his/her voter id and password. 2. A list of candidates from the particular constituency should be provided. Normal flow of events — 1. The voter will have to log in with their id and password to

participate in the election. 2. Choose their favorite candidate. 3. Cast their valuable vote to the candidate. Alternate flow of events — 1. If he/she enters the wrong id or password an error message will be displayed. 2. The vote may be casted only once. Post condition — To avoid discrepancies, the voter id of the user will be expired after casting the vote for a limited period of time. Cast vote: [pic] - Name of use case — select a candidate from a list of candidates Description — A list of candidates will be available on the website. The voter is free to select any candidate of their choice from that list and vote for that candidate. Precondition — 1. Area wise list of candidates should be made available. 2. The candidate name should appear on the list with the logo of his/her party. Normal flow of events — 1. The voter selects a candidate from the list. 2. The voters cast their vote to their favorite candidate. Alternate flow of events — none Post condition — none [pic] View own details: [pic] - Name of use case — view profile Description — After filling the registration form, the voter can view their profile if he/she feels so. Precondition — The voter should be logged in. Normal flow of events — The voter will login with the voter id and password and view the details filled while registering for the online voting system. Alternate flow — none Post condition — check whether the details filled are correct or not. 2. Administrator: Responsible for maintaining all the databases, generating results of polling and registering candidates for elections. - Register candidates — Administrator will register the candidates who will nominate for the constituency area. - Add manual polling result — The results of voting will be calculated by the administrator manually and will be added to the website. The name of the winner from each constituency and the city wise, state wise and constituency wise percentage voting will be made available

on the website. - View all reports — The reports of election such as percentage voting done, no. of votes that different candidates got, the statistics of all the elections done and reports containing details of voters, candidates based on many criterions. - Validation of voters — Administrator will validate the online registration of the voters. The voters will be qualified or disqualified for polling according to the validation by the administrator. Register candidates — [pic] - Name of use case — Acquire data Description — The registration of voters will be validated by the field officer and the data of the voters will be forwarded to the administrator after the verification of documents. Precondition — 1. The data should be validated by the field officer. 2. The registration form should be forwarded to administrator only after verification. Normal flow of events — The voter will go to the field officer for verification of documents and the field officer will forward the registration form of the voter to the administrator. Alternate flow — The documents are not complete and are not verified by the field officer then registration will not be done. Post condition — administrator will enter the details of the voter in the database. - Name of use case — Provide unique id and password Description — The administrator will provide a unique id and password to the voter so that heshe can vote online during elections by logging in through their id. Precondition — The details of the voter should be entered in the database. Normal flow of events — The administrator will provide the id and password to the voter. Alternate flow —none Post condition — id provided to every voter should be unique to avoid discrepancies. [pic] Add manual polling result — [pic] - Name of use case — calculate and display the results of voting Description — The administrator will generate the result of polling by manually calculating the number of

votes obtained by each candidate Precondition — 1. The administrator will calculate the results of polling manually. 2. The results should be displayed to the public after calculation is done. Normal flow of events — The voters will cast their votes and after that the administrator will start calculating the number of votes obtained by each candidate. After all the calculations the results will be displayed to the public. Alternate flow - none Post condition — the number of votes obtained by each candidate and the total voting percentage from each area should also be displayed. [pic] View all reports - [pic] - Name of use case — view the reports of voting Description — The reports of voting such as percentage voting done, no. of votes that different candidates got, the statistics of all the elections done and reports containing details of voters can be viewed by the administrator. Precondition — The voting result should have been displayed. Normal flow of events — After the results are calculated, the reports of voting are viewed by the administrator to draw various conclusions. Alternate flow - none Post condition — none Validation of voters — [pic] - Name of use case — verify the documents Description — The voter will have to submit the documents after registration to the administrator within the given period of time. After verifying the documents, the administrator will validate the voter to cast vote in the elections. Precondition — 1. The voter will have to submit the documents to the field officer for registration. 2. The documents will have to be submitted on time. Normal flow of events — 1. The voter will submit the documents. 2. The administrator will verify these documents. Alternate flow — If the user fails to submit the documents, then he/she will be disqualified for voting. Post condition — the user will get voter id only if documents have been verified. [pic] 3. Candidate-: Register for nomination, add details to profile,

modify profile and campaign for elections. - Register for nomination — The candidate will register for nomination through the website. - Add details to profile — Candidates will enter their details in their profiles such as manifesto, experience - Modify profile — Candidates will be able to modify selected portions of their profile after registration for nomination. - Campaign for elections — The candidates will campaign for the elections through the website. - View own details — The details filled by the candidates at the time of registration will be viewed by them for future references. Register for nomination- [pic] - Name of use case - Fill up the nomination form Description- The Candidate will fill the details in the nomination form. These details will later be verified by the field officers. Preconditions — 1. Administrator is already logged in. 2. Minimum age of candidate should be 25 years. Normal flow of events — 1. Filling in the Nomination form. 2. Storing details in the database. Alternate flow of events — 1. A message will appear if any entry of candidate Nomination form is left blank or not according to correct data type. 2. The administrator will take the action accordingly. Post condition — The general information of voter will be stored in database. [pic] - Name of use case - Verify the documents Description - The candidate will have to submit the documents to the field officer within the given period of time for registration. After verifying the documents, the field officer will validate the candidate to stand in the elections for nominees. Precondition — 1. The candidate will have to submit the documents to the field officer for registration. 2. The documents will have to be submitted on time. Normal flow of events — 1. The candidate will submit the documents. 2. The field officer will verify these documents. Alternate flow — If the candidate fails to submit the documents, then he/she will be disqualified for

the nominee. Post condition — the candidate will get the id only if documents have been verified. [pic] - Name of use case — obtain id and password Description — A unique candidate id and password will be provided to every nominee by the Administrator. Using this id and password the candidate may get the rights to participate in election for the nominees. Preconditions — 1. The Nomination form should be filled up properly. 2. The documents should be provided to the field officer within time. Normal flow of events — 1. Verification of documents by the field officer. 2. Administrator will provide the voter id and password. Alternate flow of events — If the documents have not been submitted within time, the field officer will not inform the administrator for further processing. Post condition — The candidate will obtain the id and password. [pic] Add details to profile - [pic] - Name of use case - Add details Description — Candidates will enter their details in their profiles such as manifesto, experience. Pre condition - 1. The person must be candidate. 2. The person can add the details before election. Normal flow of events- 1. The candidate can login on their profile through valid id and password. 2. The candidate profile will be updated after adding the details. Alternate flow of events- If the candidate does not enter valid id and password then he/she cannot login. Post condition- The candidate can open their profile for adding details. [pic] Modify profile [pic] - Name of use case- Modify profile Description - Candidates will be able to modify selected portions of their profile after registration for nomination. Pre condition - The person must be candidate. Normal flow of events- 1. The candidate can login on their profile through valid id and password. 2. The candidate profile will be updated after modifying. Alternate flow of events- If the candidate does not enter valid id and password then he/she cannot login. Post condition- The

candidate can open their profile for modifying them. [pic] Campaign for elections — [pic] - Name of use case — login profile Description- The candidate will enter the valid id and password for login so he can upload the information to the public for campaigning. Pre condition- The person should be candidate. Normal flow of events- 1. He/she will have to enter the correct id and password for login. 2. Upload the profile for campaigning. Alternate flow of events- If the candidates do not enter the valid id and password then they cannot campaign for themselves. Post condition- If the candidate enter the correct id and password then he can campaigning for themselves . [pic] - Name of use case — chat to public Description- The candidate chats to public for campaigning to explain their manifestos. Pre condition- 1. The candidate must be logged in. 2. The person should be candidate. Normal flow of events- 1. He/she will have to enter the correct id and password for login. 2. They can directly chat to the public Alternate flow of events- If the candidate does not login then he cannot chat to the public. Post condition- If the candidate enters the correct id and password then he can easily chat to the public. [pic] View own details: [pic] - Name of use case — view profile Description — After filling the nomination form, the candidate can view their profile if he/she feels so. Precondition — The candidate should be logged in. Normal flow of events — The candidate will login with their id and password and view the details filled while registration. Alternate flow — none Post condition — check whether the details filled are correct or not. 4. Field Officer: Generate reports for registration validation and view all reports. - Generate reports for registration validation — The field officer will verify the documents which the voter will bring to him for validation and will generate a report after verifying them which will be sent to the administrator who will

finally validate the voter for registration. - View all reports — The reports of election such as percentage voting done, no. of votes that different candidates got, the statistics of all the elections done and reports containing details of voters, candidates based on many criterions. Generate reports for registration validation — [pic] - Name of use case — generate reports for registration validation Description — The field officer will check the validity of the documents of the voter who has come for registration and will prepare a report based on this. The report will then be sent to the administrator who will finally validate the voter so that he/she may be able to cast their vote in the elections. Precondition — The voter will have to bring the documents to the field officer within the time constraint. Normal flow of events — The voter brings the documents for verification to the field officer. The field officer will generate a report for registration based on the validation of documents and will send this report to the administrator. Alternate flow — the documents are not verified by the field officer. Post condition — a report for registration validation will be prepared by the field officer. View all reports - [pic] - Name of use case — view the reports of voting Description — The reports of voting such as percentage voting done, no. of votes that different candidates got, the statistics of all the elections done and reports containing details of voters can be viewed by the administrator. Precondition — The voting result should have been displayed. Normal flow of events — After the results are calculated, the reports of voting are viewed by the administrator to draw various conclusions. Alternate flow - none Post condition — none