**SWE20004 Technical Software Development**

**Semester 1 2021**

**Project Brief**

Project Title: Project A - Project\_Electoral Commission

Project Team: Project Team 9

Year: 2021

Quality Assurance Review

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## Project Description

By working as a team, we are to design and program an electronic system for the Victorian state electoral commission. This new system will be able to take in new voters' information such as their name, address, age, suburb and voter ID and allow them to cast their votes for the running candidates in Victoria. Users will be able to actively update data at any time throughout the voting day from anywhere across Victoria or overseas.

The new system will be created using C++ and will run without errors within the system or when being used by the voters.

## Problem Statement

Currently our electoral commission uses in person ballot voting to elect our state politicians. This system is costly and not time efficient and is prone to ‘donkey’ votes wherein people submit fake or informal votes that can’t be counted. The process of voting is impeded by Victorian citizens who are overseas or can’t make it into the allocated voting centres due to illness. The use of this E-system would eliminate the need for ballot voting and reduce the time taken to process the votes from overseas citizens and provide an easy and accessible way to vote.

# Project Goals and Objectives

## Project goals

* + To implement a practical application based on State electoral commission E-system.
  + Work together as a cohesive, smooth, operable unit.
  + Deliver a comprehensive, articulate, and eloquent presentation and demonstration of our practical application.
  + As a Team unit have open clear communication and accountability

## Project objectives

Our project objectives are to create a program that:

* Ensures a user-friendly experience wherein voters are faced with a well organised menu that will allow them to navigate the E-system with ease.
* Will not crash if user inputs don’t match the syntax of the system.
* Can take in new data from voters and add it to the preexisting information within the system and store it in a way that won’t be cleared by any future data.
* Effectively categorizes data to be easily read and analyzed for votes to be counted and processed.

# Desired outcomes and benefits

## Project outcomes

* As a team construct a useable and intuitive practical application based on State electoral commission E-system which includes the following:
  + The practical application should have a clear, well-defined primary database containing all the required and appropriate information.
  + All written in C++, coded correctly, without errors and have appropriate comments included.
  + All listed requirements have been executed to the highest quality.
* Deliver a high-quality presentation and demonstration of the practical application.
* Work together, cooperate, delegate, and communicate well as a team-based unit.
* Write an eloquent, concise, well thought-out report, that meets all criteria to the highest standard.
* Overall team and customer satisfaction is a desired outcome as it will be an indication of moderate success.
* Practical application can perform to an extent where the benefits can be noticed and seen by users when compared to a traditional physical system.

## Project benefits

**Security:**

* + This practical application will improve overall security as it will combine physical security held by a traditional physical system with additional logical layers of protection. This could include passwords to prevent unauthorized access, firewalls, encryption of data, anti-malware software etc. Overall, this provides us with a significantly more secure system compared to a traditional physical one.

**Auditability:**

* + Having an E-system as opposed to a physical one allows the entire process to be auditable. This will enable any users or administrators to verify that voters' preferences and votes have been correctly processed and are appropriately documented and accounted for. In addition, to this the system could in theory also be used to send a voter a voting receipt however this would require additional administrative staff to manage and send receipts via email.

**Efficiency:**

* + The practical application of an E-system for voting in the state electoral commission will be benefitted by greater efficiency. An E-system will reduce the need for organization. Parties will no longer need to setup voting stations around towns, nor will there be any need to manually count votes. This creates a much more streamlined and efficient process. This will also cut costs as there will be no longer be any need to implement voting booths, stations etc., saving people time and money thus creating a more efficient system.

**Precision:**

* + An electronic application will remove an errors or misdemeanors from vote counting and the physical manual process that ordinarily takes place. A more dynamic more accurate system will eliminate errors caused by manual counting thus ensuring accurate and fast results.

**Reliability/Fraud Prevention:**

* + Reduces the chance that there will be accidental or intentional variations in vote counts. This is because there will be a significant reduction in the number of poll workers that have direct interaction with the votes, this also by extension cuts costs. A reduction in workers and instead employing the use of encryption protocols ensures that privacy is maintained, and auditability is ensured. This protects the integrity of the votes and thus eliminates fraud and ensures reliability.

# Success Metrics

* Assessable aspects of the overall project completed in a timely manner. These include the project brief, practical application, and report.
  + The success of the project can be attributed to how well time frames and goals are met. If we are unable to meet our goals within the appropriate timelines, then the project is unsuccessful.
* Practical application works as required and intended.
  + If the practical application does not work as intended or as required, then we cannot say that the project was successful. To measure the success of the project we need to be able to determine if the product of the project works as intended.
* Satisfaction:
  + This can be measured on two levels. The satisfaction of the customer and the satisfaction of the employees/teammates. If your teammates are not happy then productivity will not be as high and therefore will be an indication of your overall success. The satisfaction of customers indicates how successful your product is in doing what is desired and intended and how well it achieves the projects overall goals.
* How time was spent for the duration of the project:
  + Indicates the ability of the team to delegate, cooperate, be organized and how efficiently the team works. If none of these are met due to an exuberant amount of time spent on parts of the project, it can be concluded that the project was not as successful as it could have been otherwise if time was spent better, and appropriate delegation and cooperation existed.

# Project Scope and Exclusions

## In-scopes

* The expected user demographic would be the voters and the candidates within the boundaries of the Victorian electoral commission. The voters would have already been an Australian citizen, aged 18 and above, and has lived in a Victorian address for longer than a month.

## Out-scopes

* The users not included in this E-system is voters and candidates outside of the boundaries of the Victorian electoral commission, for example a voter who is an Australian resident from Queensland who is just in Victoria for 3 weeks.
* Voters in other states, namely:
  + New South Wales
  + Queensland
  + South Australia
  + Western Australia
  + Tasmania
  + Australian Capital Territory
  + Northern Territory

# Project Deliverables

The deliverables from this project are as stated below:

An E-system for voting that is accessible by any registered voter in Victoria, with timed limits such as disabling voting feature after voting day so there would not be any more extra votes. After the end of voting day, voter personal information such as name, address, and occupation should be made confidential and not permissible for view.

Clear and smooth communication between team members. Equal delegation of work, namely the coding, writing of documentation, holding each other accountable to deadlines, proofreading the code, and proofreading the documentation should be distributed fairly among team members.

# References

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