Final Project

Group - Mengqing Liu & WingKi Chow

CMPSC 132

**Project Goals:**

This project aims to develop a simple voting system that allows users to vote for candidates. The system is for users to vote and view the current number of votes for each candidate as well as check the status of the voting process.

**Significance of the project:**

Enhances the transparency and accountability of the electoral process by providing a clear voting record for each candidate. At the same time this makes the voting process easier and more convenient for voters, which can encourage wider participation in the electoral process. Users can view real-time updates on the number of ballots received for each candidate. Can promote fairness, transparency, and inclusiveness in the electoral process, ensuring that the voices of all citizens are heard and represented.

**Installation and usage instructions & List of functionalities and test results:**

When you start running it, it will first appear with the following options:

文本

描述已自动生成

Enter your option numbers. Different options go to different results.

* If you choose “1”, you will get:

文本

描述已自动生成

When the vote is complete it will say "Thank you for voting for John Chen!". Instead, it will say, "Voting has closed.". After completing the poll, it returns to the initial page.

Attention!!! Each person can only vote once!!! It occurs if the vote is repeated:

* If you choose “2”, you will get:

文本

描述已自动生成

And same to first one.

* If you choose “3”, you will get:

文本

描述已自动生成

This will come up with a basic picture of how the current candidates are voting. And whether they are currently able to vote.

* If you choose “4”, you will get:

文本

描述已自动生成

* If you choose “5”, you will get:

文本

描述已自动生成

Exit this program.

**Code structure:**

The first step is to initialize the class instances and end dates of the two candidates’ "John Chen" and "May Chen".

Then it displays the Menu - Main Menu option.

The user enters their options and receives the user's options from the menu.

Processing the options entered by the user:

* Option 1 or 2 prompts the user to enter their name to continue voting for the candidate.

Checks that the date is before the poll closing date.

* True. whether the user has already voted.
* No. Record the vote for the selected candidate and add the user to the set of voters.
* Already voted, notify them
* If the end date has passed, notify the user that the poll is closed.
* Option 3 or 4 displays the candidate's details and voting status.

Displays the details of the selected candidate, including the candidate's name and the total number of ballots received.

Checks if the poll is still in progress or has closed, notifies the user.

* Option 5 ends the program.

The cycle then continues back to the main menu until the user chooses to exit.

End: End of program flow.

**Discussion and Conclusions:**

We need to implement the voting process, implement methods to handle voting, display candidate details and check the status of voting. A class is used to represent the candidates and their associated voting process. It keeps track of the number of votes for each candidate, ensures that voters can only vote once, and provides methods for updating voting details and displaying candidate information.

Limitations:

The current implementation only supports a single user interface through the console. It is designed for basic voting scenarios with a fixed number of candidates and voters. Systems that can be extended to handle a larger number of candidates, voters, or more complex voting rules would require significant modifications and enhancements. Also, the project does not address security considerations.

Learn to apply it:

Object-Oriented Programming (OOP): the project utilizes OOP principles such as encapsulation, inheritance, and polymorphism to build the voting system into classes and objects, thus promoting modularity and code reuse.

Data Structures: Data structures such as collections are used to efficiently manage and track voters who have voted, ensuring that each voter can only vote once.