Digital Election System

1. Task Description

The goal of this project is to create a secure election system application using JavaFX. Administrators will scan a voter's ID, prompt the user to cast their vote, and provide an interface to view real-time statistics and results.

1. Proposed Solution
   1. General Overview

Two main components:

* The administrative interface, where authorized personnel can manage the election and view statistics.
* The voter interface, where the voter can cast their vote.
  1. Class Diagram

A screenshot of a computer screen

Description automatically generated

* 1. Arhitecture Diagram

A diagram of a computer program

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1. Use Cases

* Voting Process:
  + A voter scans their ID.
  + The system verifies the voter's identity and eligibility.
  + The voter selects a candidate.
  + After submission the vote is securely recorded in the database.
* View Results:
  + View real-time statistics on the map, personalized for each region.
  + View the results of the whole country on a chart.
* Manage Logs:
  + See the latest information about who logged in.
  + Clear the data in the logs to free up memory.

1. User Guide

The log in page:

* Enter a valid username and password from the database (try user: dmcgrouther0, pass: cZ2%(MrtIBB,Y) and log into the application.

A login screen with a lock and a blue circle

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A close-up of a map

Description automatically generatedThe side panel:

* Each button corresponds to a page in the application.
* Entry → handles voting process.
* Map → view the country map with information for each region.
* Chart → view a pie chart showing the live results of the candidates.
* Logs → view and handle logs of administrators.

The Entry panel:

* A screenshot of a computer

  Description automatically generatedValid ID information must be submitted so the voter can cast their vote. CNP, Judet and Seria corelate to each other. (try an online generator for mock data).
* If the information is valid when submitted, a new window will open to handle vote casting.

A screenshot of a computer

Description automatically generatedThe voter interface:

* Voter must select a candidate. (Only one candidate may be chosen at once)
* After selecting, press the submit vote button to validate the vote.

(you can check the map if voting in a new region and see how it changes color).

* I recommend submitting a voter with the CNP 5010101241234, judet MM(24 corresponds to MM), and seria MM or XM, and 6 random digits for nr. MM has no current votes in the database and is colored gray on the map, it will be painted in the corresponding color depending on your vote.

(USR = navy, AUR = gold, PSD = red, PNL = blue)

The Map panel:

* See results of the election on the map, hover over regions for detailed information.

The Chart panel:

* A screenshot of a graph

  Description automatically generatedA map of a country

  Description automatically generated See results of the elections of the whole country on a pie chart.

A screenshot of a login screen

Description automatically generatedThe Logs panel:

* See who, when and from where an admin logged in, can also clear logs. (Your log might be empty or have one row, corresponding to the user you logged in the first time).