ABSTRACT

This project is a **Command-Line Voting System** implemented in C, designed to manage a democratic voting process efficiently. It provides separate functionalities for **administrators** and **voters**, enabling streamlined handling of voter and candidate data. The program includes the following key features:

Admin Mode:

- Add or remove voters and candidates.
- View and manage the list of voters and candidates.
- Secure access through a passkey mechanism.

Voter Mode:

- Cast a vote for the desired candidate.
- Ensures that voters can only vote once using their unique voter ID.

Results Display:

- Real-time tallying and display of votes for all candidates.
- Highlights the candidate with the highest votes.

Data persistence is achieved through file handling, ensuring that voter and candidate information is saved across sessions. Dynamic memory allocation is used to handle growing data efficiently. This system offers a foundational solution for digital voting and can be expanded with advanced features such as encryption and networked access for broader applicability.

WORKFLOW OVERVIEW

--VOTING SYSTEM--

1. Admin mode

2. Voter mode

3. Display Results

4. Exit

1. Admin mode

```
Enter the Admin passkey: 233536


--- Admin Menu ---
1. Add Candidate
2. Remove Candidate
3. Add Voter
4. Remove Voter
5. Display Candidates
6. Display Voters
7. Exit Admin Menu
Enter your choice:
```

```
--- Voting System ---
1. Admin Mode
2. Voter Mode
3. Display Results
4. Exit
Enter your choice: 1
Enter the Admin passkey:
```

INCORRECT PASSKEY:

```
Enter your choice: 1
Enter the Admin passkey: 5
Invalid passkey! You have 2 attempt(s) remaining.
Enter the Admin passkey:
```

```
Enter the Admin passkey: 2
Invalid passkey! No attempts left. Terminating program.
```

Admin mode-
Adding Candidate

```
Enter the Admin passkey: 233536

--- Admin Menu ---
1. Add Candidate
2. Remove Candidate
3. Add Voter
4. Remove Voter
5. Display Candidates
6. Display Voters
7. Exit Admin Menu
Enter your choice: █
```

```
Enter your choice: 1

No.        Name              Votes
=====================================
1          Sarah             0
2          Ryan              0
3          Adam              0
4          Amy               0
5          Jack              0
6          Gloria            0
7          Isaiah            2

Enter candidate name: █
```

```
Enter candidate name: Danny
Candidate added successfully.
```

Admin mode-
Remove Candidate

```
Enter the Admin passkey: 233536

--- Admin Menu ---
1. Add Candidate
2. Remove Candidate
3. Add Voter
4. Remove Voter
5. Display Candidates
6. Display Voters
7. Exit Admin Menu
Enter your choice: █
```

```
Enter your choice: 2

No.          Name              Votes
============================================
1            Sarah             0
2            Ryan              0
3            Adam              0
4            Amy               0
5            Jack              0
6            Gloria            0
7            Isaiah            2
8            Danny             0

Enter candidate number to remove: █
```

```
Enter candidate number to remove: 8
Candidate removed successfully.
```

Admin mode-
Add Voter

```
Enter the Admin passkey: 233536

--- Admin Menu ---
1. Add Candidate
2. Remove Candidate
3. Add Voter
4. Remove Voter
5. Display Candidates
6. Display Voters
7. Exit Admin Menu
Enter your choice: ▮
```

```
Enter your choice: 3
Enter voter ID (must be > 1200): ▮
```

```
Enter your choice: 3
Enter voter ID (must be > 1200): 1201
Duplicate ID detected! A voter with ID 1201 already exists.
```

```
Enter voter ID (must be > 1200): 1301
Enter voter name: Danny
Voter added successfully.
```
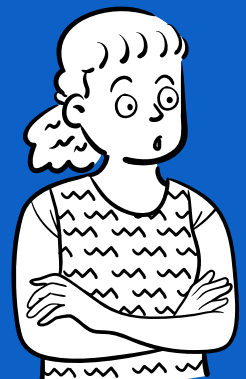
Admin mode-
Remove Voter

```
--- Admin Menu ---
1. Add Candidate
2. Remove Candidate
3. Add Voter
4. Remove Voter
5. Display Candidates
6. Display Voters
7. Exit Admin Menu
Enter your choice: ▌
```

```
Enter your choice: 4
Enter voter ID to remove: ▌
```

```
Enter voter ID to remove: 1301
Voter removed successfully.
```

```
Enter voter ID to remove: 1305
Voter not found.
```

Admin mode-
Display Candidates

```
--- Admin Menu ---
1. Add Candidate
2. Remove Candidate
3. Add Voter
4. Remove Voter
5. Display Candidates
6. Display Voters
7. Exit Admin Menu
Enter your choice: █
```

```
Enter your choice: 5

No.          Name                    Votes
=========================================
1            Sarah                   0
2            Ryan                    0
3            Adam                    0
4            Amy                     0
5            Jack                    0
6            Gloria                  0
7            Isaiah                  2
```

Admin mode-
Display Voters

```
ID        Name           Has Voted
====================================
1201      John           No
1202      Jane           No
1203      Michael        No
1204      Sarah          No
1205      Robert         No
1206      Emily          No
1207      David          No
1208      Linda          No
1209      James          No
1210      Karen          No
1211      William        No
1212      Susan          No
1213      Joseph         No
1214      Jessica        No
1215      Charles        No
1216      Mary           No
1217      Thomas         No
1218      Patricia       No
1219      Christopher    No
1220      Barbara        No
1221      Daniel         No
1222      Elizabeth      No
1223      Matthew        No
1224      Jennifer       No
1225      Andrew         No
1226      Margaret       No
1227      Joshua         No
1228      Dorothy        No
1229      Nicholas       No
1230      Helen          No
```

```
1231      Ryan           No
1232      Deborah        No
1233      Jacob          No
1234      Betty          No
1235      Ethan          No
1236      Sandra         No
1237      Alexander      No
1238      Donna          No
1239      Hannah         No
1240      Carol          No
1241      Aaron          No
1242      Ruth           No
1243      Adam           No
1244      Sharon         No
1245      Lucas          No
1246      Kimberly       No
1247      Nathan         No
1248      Michelle       No
1249      Samantha       No
1250      Amy            No
1251      Zachary        No
1252      Angela         No
1253      Kyle           No
1254      Melissa        No
1255      Logan          No
1256      Stephanie      No
1257      Evan           No
1258      Rebecca        No
1259      Jason          No
1260      Laura          No
```

```
1261      Benjamin       No
1262      Cynthia        No
1263      Elijah         No
1264      Julia          No
1265      Samuel         No
1266      Katherine      No
1267      Jack           No
1268      Anna           No
1269      Kevin          No
1270      Rachel         No
1271      Caleb          No
1272      Andrea         No
1273      Nathaniel      No
1274      Marie          No
1275      Connor         No
1276      Janet          No
1277      Brandon        No
1278      Victoria       No
1279      Justin         No
1280      Christine      No
1281      Dylan          No
1282      Cheryl         No
1283      Christian      No
1284      Lori           No
1285      Luke           No
1286      Diana          No
1287      Jordan         No
1288      Martha         No
1289      Henry          No
1290      Joyce          No
```

```
--- Admin Menu ---
1. Add Candidate
2. Remove Candidate
3. Add Voter
4. Remove Voter
5. Display Candidates
6. Display Voters
7. Exit Admin Menu
Enter your choice: █
```

Admin mode-
Exits Admin Menu

```
--- Admin Menu ---
1. Add Candidate
2. Remove Candidate
3. Add Voter
4. Remove Voter
5. Display Candidates
6. Display Voters
7. Exit Admin Menu
Enter your choice: █
```

```
Enter your choice: 7
Exiting Admin Menu.

--- Voting System ---
1. Admin Mode
2. Voter Mode
3. Display Results
4. Exit
Enter your choice: █
```

HOME

2. Voter mode

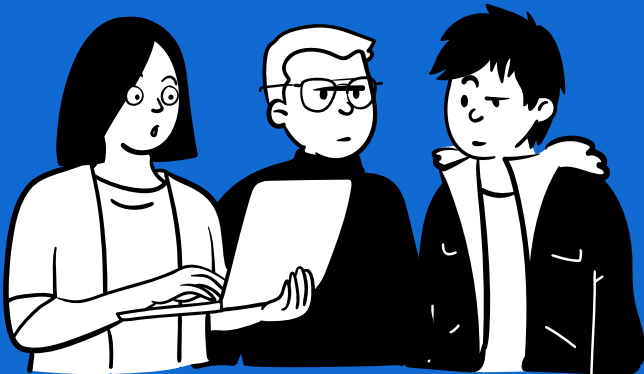Enter your voter ID:

Enter your voter ID: 1299

Enter your voter ID: 1299
You have already voted.

No.	Name	Votes
1	Sarah	0
2	Ryan	0
3	Adam	0
4	Amy	0
5	Jack	0
6	Gloria	0
7	Isaiah	2

Enter the number of the candidate you want to vote for:

Enter the number of the candidate you want to vote for: 6
Vote successfully cast for Gloria.

HOME

3.Display Results

```
    --- Voting System ---
1. Admin Mode
2. Voter Mode
3. Display Results
4. Exit
Enter your choice: 3
```

```
--- Voting Results ---
Candidate Name        Votes
===========================
Sarah                 0
Ryan                  0
Adam                  0
Amy                   0
Jack                  0
Gloria                1
Isaiah                2

The candidate with the highest votes is: Isaiah with 2 votes!
```

HOME

4.EXIT
Terminate Code

```
        --- Voting System ---
1. Admin Mode
2. Voter Mode
3. Display Results
4. Exit
Enter your choice: 4
```

```
Enter your choice: 4
Data saved. Exiting system.
PS C:\Users\WELCOME\Downloads\Digital voting system\Digital voting system>
```

HOME