project file evm.py

```python
def display_menu():
    print("\nElection Voting System")
    print("1. Cast Vote")
    print("2. Display Results")
    print("3. Reset Votes")
    print("4. Exit")


class ElectionSystem:
    def __init__(self):
        self.candidates = {"NARA CHANDRABABU NAIDU": 0, "YS JAGAN MOHAN REDDY": 0, "RAHUL GANDHI": 0}
        self.users = {}
        self.logged_in_user = None
        self.voter_ids = {}  # Dictionary to store voter IDs and corresponding usernames

    def authenticate_user(self, username, password):
        if username in self.users and self.users[username] == password:
            self.logged_in_user = username
            return True
        return False

    def is_voter_id_valid(self, voter_id):
        return voter_id not in self.voter_ids

    def cast_vote(self):
        if not self.logged_in_user:
            print("Please log in to cast your vote.")
            return

        if not self.users:
            print("No users registered. Please contact admin to create an account.")
            return

        voter_id = input("Enter your voter ID number: ")
        if not self.is_voter_id_valid(voter_id):
            print("Voter ID already used. You cannot vote again.")
            return

        print("\nCandidates: ")
        for i, candidate in enumerate(self.candidates.keys(), start=1):
            print(f"{i}. {candidate}")

        try:
            choice = int(input("Enter the number of the candidate you want to vote for: "))
            if 1 <= choice <= len(self.candidates):
                candidate = list(self.candidates.keys())[choice - 1]
                self.candidates[candidate] += 1
                self.voter_ids[voter_id] = self.logged_in_user
                print(f"Vote cast successfully for {candidate}")
            else:
                print("Invalid choice. Please enter a number from the list.")
        except ValueError:
            print("Invalid input. Please enter a number.")

    def display_results(self):
        print("\nElection Results:")
        total_votes = sum(self.candidates.values())

        if total_votes == 0:
            print("No votes cast yet.")
            return

        highest_percentage = -1
        winner = None

        for candidate, votes in self.candidates.items():
            percentage = (votes / total_votes) * 100
            print(f"{candidate}: {votes} votes ({percentage:.2f}%)")
            if percentage > highest_percentage:
                highest_percentage = percentage
                winner = candidate
```

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72
73          print(f"\n{winner} has won with {highest_percentage:.2f}% of the votes.")
74
75          # Announce new Chief Minister of Andhra Pradesh
76          print(f"Andhra Pradesh's new Chief Minister is {winner}.")
77
78      def reset_votes(self):
79          if not self.logged_in_user or self.logged_in_user != "admin":
80              print("Only admin can reset votes.")
81              return
82
83          for candidate in self.candidates:
84              self.candidates[candidate] = 0
85          print("Votes have been reset.")
86
87      def add_user(self):
88          username = input("Enter new username: ")
89          if username in self.users:
90              print("Username already exists. Please choose another one.")
91              return
92
93          password = input("Enter password: ")
94          self.users[username] = password
95          print(f"User {username} added successfully.")
96
97      def run(self):
98          while True:
99              if not self.logged_in_user:
100                 username = input("Enter your username: ")
101                 password = input("Enter your password: ")
102                 if self.authenticate_user(username, password):
103                     print(f"Welcome, {username}!")
104                 else:
105                     print("Invalid username or password. Please try again.")
106                     continue
107
108             display_menu()
109             choice = input("Enter your choice: ")
110
111             if choice == '1':
112                 self.cast_vote()
113             elif choice == '2':
114                 self.display_results()
115             elif choice == '3':
116                 self.reset_votes()
117             elif choice == '4':
118                 print("Exiting...")
119                 break
120             else:
121                 print("Invalid choice. Please try again.")
122
123
124 if __name__ == "__main__":
125     election_system = ElectionSystem()
126
127     # Allow dynamic creation of users
128     while True:
129         create_user = input("Do you want to create a new user? (yes/no): ").lower()
130         if create_user == 'yes':
131             election_system.add_user()
132         elif create_user == 'no':
133             break
134         else:
135             print("Invalid input. Please enter 'yes' or 'no'.")
136
137     election_system.run()
138
```