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1  print("PROJECT BY - ")
2  print("          |AASHISH VICTOR|")
3  import json, os
4  from datetime import datetime
5
6  DB_FILE = "atm_db.json"
7
8  def load_db():
9      if not os.path.exists(DB_FILE):
10         return {"accounts": {}, "next_ac_no": 10001}
11     try:
12         with open(DB_FILE, "r", encoding="utf-8") as f:
13             return json.load(f)
14     except (json.JSONDecodeError, OSError):
15         return {"accounts": {}, "next_ac_no": 10001}
16
17 def save_db(db):
18     with open(DB_FILE, "w", encoding="utf-8") as f:
19         json.dump(db, f, indent=2)
20
21 def input_pin(prompt="Enter 4-digit PIN: "):
22     while True:
23         pin = input(prompt).strip()
24         if pin.isdigit() and len(pin) == 4:
25             return pin
26         print("Invalid PIN. Please enter exactly 4 digits.")
27
28 def input_amount(prompt="Enter amount: "):
29     while True:
30         txt = input(prompt).strip()
31         if txt.isdigit() and int(txt) > 0:
32             return int(txt)
33         print("Invalid amount. Enter a positive integer (e.g., 500).")
34
35 def create_account(db):
36     print("\n--- Create New Account ---")
37     name = input("Enter full name: ").strip()
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35     def create_account(db):
36         print("\n--- Create New Account ---")
37         name = input("Enter full name: ").strip()
38         if not name:
39             print("Name cannot be empty.")
40             return
41         pin = input_pin("Set a 4-digit PIN: ")
42         ac_no = str(db["next_ac_no"])
43         db["next_ac_no"] += 1
44         db["accounts"][ac_no] = {"name": name, "pin": pin, "balance": 0, "transactions": []}
45         save_db(db)
46         print(f"Account created successfully!\nYour Account Number is: {ac_no}")
47
48     def login(db):
49         print("\n--- Login ---")
50         ac_no = input("Enter Account Number: ").strip()
51         if ac_no not in db["accounts"]:
52             print("Account not found.")
53             return None
54         pin = input_pin("Enter PIN: ")
55         if db["accounts"][ac_no]["pin"] != pin:
56             print("Incorrect PIN.")
57             return None
58         print(f"Welcome, {db['accounts'][ac_no]['name']}")
59         return ac_no
60
61     def deposit(db, ac_no):
62         print("\n--- Deposit ---")
63         amt = input_amount("Enter deposit amount: ")
64         db["accounts"][ac_no]["balance"] += amt
65         db["accounts"][ac_no]["transactions"].append(
66             {"type": "DEPOSIT", "amount": amt, "time": datetime.now().isoformat(timespec="seconds")})
67     )
68         save_db(db)
69         print(f"₹{amt} deposited successfully. New Balance: ₹{db['accounts'][ac_no]['balance']} ")
70
71     def withdraw(db, ac_no):
72         print("\n--- Withdraw ---")
73         amt = input_amount("Enter withdrawal amount: ")
74         bal = db["accounts"][ac_no]["balance"]
75         if amt > bal:
76             print("Insufficient balance.")
77             return
78         db["accounts"][ac_no]["balance"] -= amt
79         db["accounts"][ac_no]["transactions"].append(
80             {"type": "WITHDRAW", "amount": amt, "time": datetime.now().isoformat(timespec="seconds")})
81     )
82         save_db(db)
83         print(f"₹{amt} withdrawn successfully. New Balance: ₹{db['accounts'][ac_no]['balance']} ")
84
85     def show_balance(db, ac_no):
86         print(f"\n--- Balance ---\nCurrent Balance: ₹{db['accounts'][ac_no]['balance']} ")
87
88     def mini_statement(db, ac_no, limit=10):

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85     def show_balance(db, ac_no):
86         print(f"\n--- Balance ---\nCurrent Balance: ₹{db['accounts'][ac_no]['balance']}") 
87
88     def mini_statement(db, ac_no, limit=10):
89         print("\n--- Mini Statement (Last 10) ---")
90         txns = db["accounts"][ac_no]["transactions"][-limit:]
91         if not txns:
92             print("No transactions yet.")
93             return
94         for t in txns:
95             print(f"{t['time']} | {t['type'][:8s]} | ₹{t['amount']}") 
96         print(f"Current Balance: ₹{db['accounts'][ac_no]['balance']}") 
97
98     def change_pin(db, ac_no):
99         print("\n--- Change PIN ---")
100        old = input_pin("Enter current PIN: ")
101        if db["accounts"][ac_no]["pin"] != old:
102            print("Incorrect current PIN.")
103            return
104        new = input_pin("Enter new 4-digit PIN: ")
105        if new == old:
106            print("New PIN cannot be the same as the old PIN.")
107            return
108        db["accounts"][ac_no]["pin"] = new
109        save_db(db)
110        print("PIN changed successfully.") 
111
112    def user_menu(db, ac_no):
113        while True:
114            print("\n== ATM - User Menu ==")
115            print("1. Deposit")
116            print("2. Withdraw")
117            print("3. Balance Enquiry")
118            print("4. Mini Statement")
119            print("5. Change PIN")
120            print("6. Logout")
121            choice = input("Select option (1-6): ").strip()
122            if choice == "1":
123                deposit(db, ac_no)
124            elif choice == "2":
125                withdraw(db, ac_no)
126            elif choice == "3":
127                show_balance(db, ac_no)
128            elif choice == "4":
129                mini_statement(db, ac_no)
130            elif choice == "5":
131                change_pin(db, ac_no)
132            elif choice == "6":
133                print("Logged out.\n")
134                break
135            else:
136                print("Invalid choice. Please select 1-6.") 
137
138    def main_menu():
139        print("Welcome to ATM System")
140        print("1. User Login")
141        print("2. Admin Login")
142        print("3. Exit")
143        choice = input("Select option (1-3): ").strip()
144        if choice == "1":
145            user_login()
146        elif choice == "2":
147            admin_login()
148        elif choice == "3":
149            print("Thank you for using our ATM system!")
150
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132     user_menu(db, ac_no).
133     print("Invalid choice. Please select 1-6.")
134
135 def main_menu():
136     db = load_db()
137     print("")
138     print("".center(30))
139     print("".center(30))
140     print("".center(30))
141     print("".center(30))
142     print("".center(30))
143     print("".center(30))
144     while True:
145         print("\n--- Main Menu ---")
146         print("1. Create New Account")
147         print("2. Login")
148         print("3. Exit")
149         choice = input("Select option (1-3): ").strip()
150         if choice == "1":
151             create_account(db)
152         elif choice == "2":
153             ac_no = login(db)
154             if ac_no:
155                 user_menu(db, ac_no)
156             elif choice == "3":
157                 print("Thank you for using the ATM. Goodbye!")
158                 break
159             else:
160                 print("Invalid choice. Please select 1-3.")
161
162 if __name__ == "__main__":
163     main_menu()
164
165
```