

```

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()

```

```

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):

```

```

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():

```

```

112     def user_menu(db, ac_no):
136         print("Invalid choice. Please select 1-6.")
137
138     def main_menu():
139         db = load_db()
140         print(" ")
141         print(" ===== ")
142         print("      ATM SIMULATION      ")
143         print(" ===== ")
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

```