CSE 102 Spring 2025 – Computer Programming Assignment 3

Due on March 26, 2025 at 23:59

Write a C program to implement a Virtual ATM Simulator for basic banking transactions, such as checking their balance, depositing money, and withdrawing money. The simulation follows these constraints:

- **Only scalar variables** (no arrays, structs, or pointers)
- **Conditional statements** (if, else, and switch)
- **File I/O** to store and update the balance of the bank account
- **No loops**
- **Functions** for each bank transaction
- **Only standard libraries** (stdio.h for input/output, stdlib.h for file handling)

The ATM system has the following features:

1. **Check balance** – Display the current balance.
2. **Deposit money** – Add money to the account.
3. **Withdraw money** – Subtract money from the account (if sufficient funds are available).
4. **Exit the program** – Ends the session.

Each transaction updates the account balance, which is stored in a file (account.txt). The balance remains saved between program executions. Your program must define and use the following functions:

- `double get_balance(); //Reads balance from file`
- `void update_balance(double new_balance); //Updates balance in the file`
- `void check_balance(); //Displays current balance`
- `void deposit_money(); //Allows user to deposit money`
- `void withdraw_money(); //Allows user to withdraw money`
- `void menu(); //Displays the ATM Menu`

ATM checks:

1. The user cannot withdraw more money than the account balance.
2. The user cannot withdraw or deposit a negative amount of money.

Example Program Execution

Displaying Menu

```
----- Virtual ATM -----
1. Check Balance
2. Deposit Money
3. Withdraw Money
4. Exit
```

Checking Balance

```
Choose an option: 1
Current balance: 100.00 TRY
```

Depositing Money

```
Choose an option: 2
Enter amount to deposit: 50
Deposit successful! New balance: 150.00 TRY (Saved account.txt)
```

Withdrawing Money

```
Choose an option: 3
Enter amount to withdraw: 30
Withdraw successful! New balance: 120.00 TRY (Saved account.txt)
```

Attemping to Overdraw

```
Choose an option: 3
Enter amount to withdraw: 200
Insufficient funds! Your balance is only 120.00 TRY.
```

Requirements:

- Reads from account.txt if it exists.
- If the file doesn't exist, it creates a new account with an initial balance of $100.00.
- Updates the account balance after each transaction if needed.

Grading (100 Points)

- Using functions correctly (50 pts)
- Handling file I/O properly (30 pts)
- Proper menu interaction (10 pts)
- Following constraints (10 pts)

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IMPORTANT NOTES:

- Submit your homework as a zip file named as your name_surname id (name_surname.zip) and this file should include:
  - name_surname.c file
- name_surname.pdf file which includes, screenshots of your generated outputs and given C code as an input.
- Programs with compilation errors will get 0.
- The output format must be as given, do not change it.
- Compile your work with given command "gcc --ansi your_program.c -o your_program".
- Your work will be evaluated using gcc version 11.4.0.