

Report of Homework 3

In this assignment, we were asked to write a C program for a Virtual ATM. First, I defined the required functions in the assignment:

```
double get_balance();  
void update_balance(double new_balance);  
void check_balance();  
void deposit_money();  
void withdraw_money();  
void menu();
```

Then I implemented them one by one. First, `get_balance` simply retrieves the balance from the file “account.txt”. If the file is not present, I create a new file with a balance of 100. To achieve this, I try to open the file in “r” (read) mode, because `fopen()` returns NULL if the file does not exist. If the file exists, I read its content and return the balance. If it doesn’t exist, I use `fopen()` in “w” (write) mode, which creates the file if it’s missing but overwrites its content if it exists. I then use `fscanf()` to get the balance and return its value.

Second, `update_balance` updates (overwrites) the contents of the file “account.txt” with the new balance provided as a parameter. I used `fopen()` in “w” mode to overwrite the file's content. Note that `update_balance` is always called after `get_balance`, so the file will exist before `update_balance` is executed. Both functions are called within other functions.

Third, `check_balance` uses `get_balance` to print the current balance.

Fourth, `deposit_money` gets the balance using `get_balance` and then asks the user how much money they want to deposit. If the user enters a valid number (number > 0 or a digit), the function adds

the deposit amount to the current balance, updates the file using `update_balance`, and prints the new balance to the console.

Fifth, `withdraw_money` gets the balance using `get_balance` and asks the user to enter the amount to withdraw. It then checks if the input is valid. If the balance is less than the withdrawal amount, the withdrawal process does not proceed, and a warning is printed: "Insufficient funds! Your balance is only (balance) TRY." However, if there are sufficient funds, the amount is deducted from the balance, and a message is printed: "Withdraw successful! New balance: (new balance) TRY (Saved to account.txt)."

Lastly, `menu` prints the ATM menu.

In my main function, I used the option variable as an int and implemented if-else statements to execute the corresponding functions based on the user's input.

Here are the outputs of my homework:

```
elifertugrul@Elif-MacBook-Pro 3 % ./elifnazli_ertugrul
----- Virtual ATM -----
1. Check Balance
2. Deposit Money
3. Withdraw Money
4. Exit
Choose an option: e
Please enter a valid option.
```

```
elifertugrul@Elif-MacBook-Pro 3 % ./elifnazli_ertugrul
----- Virtual ATM -----
1. Check Balance
2. Deposit Money
3. Withdraw Money
4. Exit
Choose an option: 5
Please enter a valid option.
```

```
elifertugrul@Elif-MacBook-Pro 3 % ./elifnazli_ertugrul
----- Virtual ATM -----
1. Check Balance
2. Deposit Money
3. Withdraw Money
4. Exit
Choose an option: 1
Current balance: 100.00
elifertugrul@Elif-MacBook-Pro 3 % ./elifnazli_ertugrul
----- Virtual ATM -----
1. Check Balance
2. Deposit Money
3. Withdraw Money
4. Exit
Choose an option: 2
Enter amount to deposit: 100
Deposit successful! New balance: 200.00 TRY (Saved account.txt)
elifertugrul@Elif-MacBook-Pro 3 % ./elifnazli_ertugrul
----- Virtual ATM -----
1. Check Balance
2. Deposit Money
3. Withdraw Money
4. Exit
Choose an option: 3
Enter amount to withdraw: 97
Withdraw successful! New balance: 103.00 TRY (Saved account.txt)
elifertugrul@Elif-MacBook-Pro 3 % ./elifnazli_ertugrul
----- Virtual ATM -----
1. Check Balance
2. Deposit Money
3. Withdraw Money
4. Exit
Choose an option: 4
Exiting the Virtual ATM.
```

```
elifertugrul@Elif-MacBook-Pro 3 % ./elifnazli_ertugrul
----- Virtual ATM -----
1. Check Balance
2. Deposit Money
3. Withdraw Money
4. Exit
Choose an option: 2
Enter amount to deposit: -19
Invalid amount. Please enter a positive amount to deposit.
elifertugrul@Elif-MacBook-Pro 3 % ./elifnazli_ertugrul
----- Virtual ATM -----
1. Check Balance
2. Deposit Money
3. Withdraw Money
4. Exit
Choose an option: 3
Enter amount to withdraw: 300
Insufficient funds! Your balance is only 103.00 TRY.
```