Q3 Customer Bank Details & ATM Process

Problem :

You are to program an Automated Teller Machine (ATM) to show the Main Menu specified below and perform the list of tasks given.

1. Load Cash to ATM
2. Show Customer Details
3. Show ATM Operations

Task 1 : Load cash to ATM

The ATM will be initially empty and you are required to programatically feed money into the machine, along with specific currency denominations. Maintain the currency and denominations in a suitable data structure.

If there is already money available (ie. If there is already a file with the data-structure) - Add the money and denominations to the already available value.

Feed money into the machine with the denominations.

For example

- 2000 X 20 =40,000₹
- 500 X 100 =50,000₹
- 100 X 100=10,000₹

Save the data-structure in a separate file - with which we will be performing further operations and display the details in a tabular structure.

ATM

Denomination	Number	Value
2000	20	40000
500	100	50000
100	100	10000

Task 2 : Maintain Customer Details

Using simple Data Structure, maintain the following Customer Details in a separate

file, with which we will be performing further operations and display the details in a tabular structure.

Acc No	Account Holder	Pin Number	Account Balance
101	Suresh	2343	25,234 ₹
102	Ganesh	5432	34,123 ₹
103	Magesh	7854	26,100 ₹
104	Naresh	2345	80,000 ₹
105	Harish	1907	1,03,400 ₹

Task 3 : Handle ATM Process

On selecting this option, ask user to input Account Number and Pin Number. After validation, the customer should be given the following options

1. Check Balance
2. Withdraw Money
3. Transfer Money
4. Check ATM Balance

Task 3.1 : Check Balance :

Upon selecting this option, the customer must be shown the balance amount from his account on the screen.

Task 3.2 : Withdraw Money :

Basic criteria for withdrawal of money are listed below. Customer should be alerted when any of the criteria is met.

1. Max withdrawal limit for a single transaction is10,000₹ and minimum is100₹.
2. For every subsequent withdrawal, pin number should be entered by the customer.

After selecting Withdraw Money option the following actions should be performed.

1. Prompt to Enter the Amount to be withdrawn
2. An alert should be shown when the ATM does not have enough money to vend.
3. Cross verify Acc Balance with requested withdrawal amount and alert the Customer when - account balance is lower than entered withdrawal amount.
4. The minimum vended denomininations for amount <= 5000 ₹ should be as follows.
   a. 2000₹ (Minimum 1 for withdrawal greater than 3000 ₹)
   b. 500₹ (Minimum 1 for withdrawal greater than 1000₹)
   c. 100₹
      i.   Maximum 15 numbers and
      ii. minimum 10 for withdrawal greater than 1500 ₹

iii. Reduce for lesser amounts
5. The minimum vended denomininations for amount > 5000 ₹ should be as follows.
    a. 2000₹ X 2
    b. 500₹ X 2 (increase for higher amounts)
    c. 100₹ X 10 (Maximum 10 numbers)
6. The withdrawn amount should be reduced from customers account balance and the ATM balance. (In the local-files)
7. If the ATM does not have the denominations to give the balance to the user, Let the users know and stop the transaction.

Task 3.2 : Transfer Money
Basic Criteria for Transfer are as follows and the customer should be alerted when any of the criteria is met.
1. Max transfer limit per transaction cannot exceed 10,000 ₹ and should be more than 1000 ₹
2. Transaction can happen only between the customers mentioned previously
Upon selecting Transfer Money, the following actions should be performed
 1. Prompt the customer to input Account Number to which the money has to be transferred
 2. Account balance should be properly altered for both sender and receiver and the balance in ATM should not be affected.

Task 4 : Check ATM Balance
        Upon selecting this option, the user should be shown the balance amount in the ATM along with denomination.

Output should be something like

Denomination	Number	Value
2000	5	10000
500	0	0
100	50	5000

Total Amount available in the ATM = 15000 ₹