Virtual Gift Card System

Write a program to manage a virtual gift card system by linking with an existing banking system. As part of this, the following operations need to be supported.

- Account summary
- Creating a Gift Card by using a particular customer's account balance
- Top-up of existing Gift Card with account balance
- Close a Gift Card, which should return balance to the associated account
- Purchase using a Gift Card

Task 1 : Account Summary

Consider a bank system where
- It can have any number of customers
- Each customer is identified by a unique number called Customer Id.
- Each customer's account balance is maintained

Print the account summary as below

Customer Id	Balance
1	10000
2	20000
3	30000

Task 2 : Create Gift Card

Each gift card is identified by a unique card number called Card No and a PIN is also set (like our ATM card PIN) to protect misuse of it during every purchase. Each customer can create as many gift cards as possible and money for the same is debited from the customer's bank account.

For e.g. if a customer-1 has 10000 in the bank account and if two cards are created with Rs2500 each, then bank balance will now be 5000. You may also maintain a status which keeps track of whether the card is active / closed.

Gift Card Summary

Card No	Cust Id	PIN	Gift Card Balance	Status
1	1	1111	2500	Active
2	1	2222	2500	Active
3	2	3333	5000	Active
4	2	1234	0	Closed

After creating the above set of gift cards, if you print account summary, it will be like this

Customer Id	Balance
1	5000
2	15000
3	30000

Task 3 : Top-Up Gift Card

Each gift card can be topped-up at any moment. Similar to the purchase option, amount chosen for top-up will be debited from bank account and credited into the gift card account. Each top-up process will require input like Card No and top-up amount. Support this operation and verify by printing Account Summary and the Gift Card Summary

Task 4 : Close Gift Card

If a customer decides to close a gift card, the remaining amount in the gift card should be credited back to the original account. Close gift card option should accept Card No and the PIN. Only if the PIN matches, this operation should be allowed. Once this operation is performed, the card status should be closed, verify the same by printing Account Summary and Gift Card Summary.

Task 5 : Purchase Item

You may use any gift card as part of any purchase process. During each purchase you are required to give card number, PIN and the amount required for purchase. Keep a record of all the transactions and print a summary as and when required.

Transaction Summary

Txn No	Card No	Amount
1	2	1000
2	2	1000
3	3	2000

At the end of this operation print Account Summary and Gift Card Summary to verify results.

Task 6 : Block / Unblock Card

Support operations to block the card temporarily. If done so, those cards can't be used in purchases or top-up operations. But it can be closed. If a blocked card is closed, then the status should be closed.

Blocked cards can anytime unblocked. Gift card status column should reflect if the card is blocked or not in addition to the existing two status like active or closed.

Task 7 : Reward Points (Advance Question)

Store Reward Points for each Gift Card. For each purchase of Rs.500, add reward points of 50 to the gift card. Print the Reward Points also along with the Gift card summary.

Task 8 : Gift Card Type (Advance Question)

Let the Gift card type be Silver, Gold & Platinum. On the accumulation of 200 points, the card automatically changes to the next type.

For example, a Silver Gift card will change to the Gold Gift card on the accumulation of 200 points. Once converted, the reward point count will be reset to Zero for the Gold card. Print the Gift card summary along with the Card type and reward points count.