**Assumptions**

Bill: there are four tables related to the billing transaction. The first one is employee table. Each month, we assign an accountant to take responsibility for generating the bill. And we assume the accountant will also be responsible for that employee the next month. The second table is monthly fee, monthly fee contains the fee for each location for one specific bill. The third table is customer, the bill will include the charges for that customer. The final one is bill table itself, will include basic information about this bill.

We create a procedure to generate bill. And we have several assumptions here:

1. We generate the bill report at the first day of each month, which includes the charges of the past month. The frequency for bill is one month.
2. The service start day will always be the first day of the month and service end day will always be the last day of the month.
3. The due day will be the last day of the month we generate our bill report.
4. We insert new bill record at the first day of each month and this bill record is for the current month.

Example:

At January 1st, we create bill record for each customer we have, and assign the service start day to be January 1st, and the service end day to be January 31st for all the bill record. The

due day for these bill record will all be February 28th. At February 1st, we generate our bill report for January using the bill record we create on January 1st. Since in the bill record, we have the customer id, we can refer to the delivery service record to search the items bought by the customer during January as well as the number of referrals on January for that customer.

1. Customer table has an attribute called balance, when we generate bill report at the beginning of the month, we update their balance to the charges we calculate. The customer has a whole month to pay the bill. When they pay the bill, they will have to pay all the balance because we have built a trigger to enforce this payment transaction. Partial payment is invalid in our business. In this case, at the beginning of next month, when the accountant calculates the bill report, they can search the balance column in customer ­­table, if the balance is not zero, it is l­­­ate due balance already.
2. When the customer pays the balance, we also record the transaction date. If we find the transaction date is three months before. We set the customer to un-active status, and they are not allowed to order new items.

**Transaction Requirements**

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1. Customer cannot sign a new contract when his or her current balance is not zero or he is not active status.

2. Customer cannot order items with a quantity that exceeds the storage

3. Customers have to pay all the account balance. Partial payments are invalid.

4. Customer will be blocked if he didn’t pay for three months. After being block, the customer cannot order new items or sign new contract