

INDIAN BANK - CASE STUDY

DATABASE DESIGN:

1. Create a DATABASE: INDIAN BANK
2. Create a secondary filegroup and assign a couple of files to it.
3. Make the secondary filegroup as the default filegroup.
4. Create the below tables. Place them in different filegroups if they are to be used in joins.

TABLES:

ACCOUNT MASTER

Column Name	Data Type	Remarks
ACID	INTEGER	Primary Key
NAME	VARCHAR(40)	NOT NULL
ADDRESS	VARCHAR(50)	NOT NULL
BRID	CHAR(3)	NOT NULL, Foreign Key
PID	CHAR(2)	Foreign Key; NOT NULL
DATE OF OPENING	DATETIME	NOT NULL
CLEAR BALANCE	MONEY	NULL ALLOWED
UNCLEAR BALANCE	MONEY	NULL ALLOWED
STATUS	CHAR(1)	'O' for 'OPERATIVE', 'I' for 'INOPERATIVE', 'C' for 'CLOSED'; NOT NULL; DEFAULT value is 'O' (OPERATIVE)

PRODUCT MASTER

<i>Column Name</i>	<i>Data Type</i>	<i>Remarks</i>
PID	CHAR(2)	Primary Key
PRODUCT NAME	VARCHAR(15)	NULL not allowed

REGION MASTER

<i>Column Name</i>	<i>Data Type</i>	<i>Remarks</i>
RID	INTEGER	Primary Key
REGION NAME	CHAR(6)	NOT NULL

BRANCH MASTER

<i>Column Name</i>	<i>Data Type</i>	<i>Remarks</i>
BRID	CHAR(3)	Primary Key
BRANCH NAME	VARCHAR(30)	NOT NULL
BRANCH ADDRESS	VARCHAR(50)	NOT NULL
RID	INT	Foreign Key; NOT NULL

USER MASTER

<i>Column Name</i>	<i>Data Type</i>	<i>Remarks</i>
USERID	INTEGER	Primary Key
USER NAME	VARCHAR(30)	NOT NULL
DESIGNATION	CHAR(1)	'M' for 'MANAGER', 'T' for 'TELLER', 'C' for

		'CLERK'; NOT NULL.
--	--	--------------------

TRANSACTION MASTER

Column Name	Data Type	Remarks
TRANSACTION NUMBER	INTEGER(4)	Primary Key; Identity, seed=1, Increment=1;
DATE TRANSACTION	OF DATETIME	NOT NULL
ACID	INTEGER	Foreign Key; NOT NULL
BRID	CHAR(3)	Foreign Key; NOT NULL
TXN_TYPE	CHAR(3)	'CW' for 'CASH WITHDRAWAL', 'CD' for 'CASH DEPOSIT', 'CQD' for 'CHEQUE DEPOSIT'; NOT NULL
CHQ_NO	INTEGER	NULL ALLOWED
CHQ_DATE	SMALLDATETIME	NULL ALLOWED
TXN_AMOUNT	MONEY	NOT NULL
USERID	INTEGER	Foreign Key; NOT NULL

I. BUSINESS INTEGRITY RULES (PK, UK, FK, CHECK CONSTRAINTS & TRIGGERS)

1. Account ID, Branch ID, Product ID and Region ID fields should be UNIQUE

2. Date of Transaction (DOT) and Date of Opening (DOO) should be the current date
3. A Cheque which is more than six months old should not be accepted
4. No Transactions should be allowed on Accounts marked "Inoperative"
5. When a Transaction is altered, the difference between the old amount and the new amount cannot be more than 10%, if the transaction has been effected by the teller
6. More than three Cash Withdrawal transactions in a single account on the same day should not be allowed
7. Cheque Number and Cheque Date columns should not be 'NULL', if the Transaction type is 'Cheque Deposit'
8. A product should not be removed, if there are accounts attached to it (Similar checks are required wherever appropriate)
9. Transaction Amount should not be negative
10. Transaction Type should only be 'CW' or 'CD' or 'CQD'
11. An account should not be closed, if its related Cheques are in transit (i.e. if the Cleared and Uncleared balances are not equal)
12. Uncleared balance should not be less than Cleared balance
13. Minimum balance for Savings Bank should be Rs. 1,000/=
14. When there is an insert/update in the transaction amount for an account, Balance (Clear & Unclear) in the 'Account Master' should be updated implicitly.
15. If there is no minimum balance in the account, withdrawal should be prohibited and an appropriate message should be displayed.
16. If the cash deposit transaction amount is greater than Rs. 50,000/=-, the same should be inserted into the 'High Value Transaction' table.
17. Total no. of transactions per month to be less than 5. If it exceeds Rs. 50/= to be debited.
18. Total cash withdrawals allowed in a day is Rs.50, 000/-. When this is exceeded, a charge of 1% is to be debited.

II. VIEW REQUIREMENTS

1. Only the Account Number, Name and Address from the 'Account Master'

2. Account Number, Name, Date of last Transaction, total number of transactions in the Account
3. Branch-wise, Product-wise, sum of Uncleared balance
4. Customer-wise, number of accounts held
5. TransactionType-wise, Account-wise, sum of transaction amount for the current month

III. QUERY REQUIREMENTS

1. List the transactions that have taken place in a given Branch during the previous month
2. Give the branch-wise total cash deposits that have taken place during the last 5 days
3. Give the branch-wise total cash withdrawals during the last month, where the total cash withdrawals are greater than Rs 1,00,000
4. List the names of the account holders with corresponding branch names, in respect of the maximum and minimum Cleared balance
5. List the names of the account holders with corresponding branch names, in respect of the second-highest maximum and minimum Cleared balance
6. List the name of the account holder who has the second-highest cleared balance in the branch having the account with the maximum cleared balance.
7. Give the TransactionType-wise, branch-wise, total amount for the day
8. Give the names of the account holders who have not put thru not even a single Cash deposit transaction during the last 15 days
9. List the product having the maximum number of accounts
10. List the product having the maximum monthly, average number of transactions (consider the last 6 months data)
11. List the product showing an increasing trend in average number of transactions per month.
12. List the names of the account holders and the number of transactions put thru by them, in a given day.
13. List the account holder's name, account number and sum amount for customers who have made more than one cash withdrawal transaction in the same day (Consider the transactions in the last 20 days for this query)

14. List the account holder's name, account number and amount for customers who have made at least one transaction in each transaction type in the last 10 days
15. List the number of transactions that have been authorized by the Manager so far today
16. Considering all transactions which took place in the last 3 days, give the region-wise, branch-wise breakup of number of transactions only for those regions where the total number of transactions exceeds 100.
17. List the names of the clients who have accounts in all the products
18. List the accounts that are likely to become "Inoperative" next month
19. List the user who has entered the maximum number of transactions today
20. Given a branch, list the heaviest day in terms of number of transactions/value of Cash Deposits during the last one month
21. List the clients who have not used their cheque books during the last 15 days
22. List the transactions that have happened wherein the transacting branch is different from the branch in which the account is opened, but the Region is the same
23. List the transactions that have happened wherein the transacting branch is different from the branch in which the account is opened, and the two branches belong to different regions
24. List the average transaction amount, TransactionType-wise for a given branch and for a given date
25. Provide the following information from the 'Account Master' table:
 - Product-wise, month-wise, number of accounts
 - Total number of accounts for each product
 - Total number of accounts for each month
 - Total number of accounts in our bank

IV. STORED PROCEDURES

INDIAN BANK

List of Transactions from 01/02/2007 to 28/02/2007

Go Online Trainings

Mobile No: +91-9000075637/9642143942

Product Name :

Account No :

Branch :

Customer Name:

Cleared Balance :

SL.NO	DATE	TXN TYPE	CHEQUE NO	AMOUNT
RUNNINGBALANCE				

Total Number of Transactions :

Cash Deposits :

Cash Withdrawals :

Cheque Deposits : ...

Dates when the Balance dropped below the Minimum Balance for the Product:

Closing Balance :

***** End of Document *****