Banking Case Study

MY Bank Ltd., started in April 2004, operates in different locations across the country. There are about thousands of customers holding accounts currently with the bank.

The bank's performance seems to be satisfactorily increasing and the number of customers registered seems to be increasing atleast 1000 per day across different branches.

The increasing size of the customer domain and the load of information to be maintained has urged the management to go for automation of day to day activities of the bank.

The activities of the bank are as follows.

When a person wants to take an account, he fills an application form online. The accountant verifies the address proof from a valid document takes note of the information and issues an account number, acknowledging the open of account. Then the customer is supposed to pay an initial amount of Rs.500 to open the account.

When the customer wants to deposit or withdraw amount, he either does it through an online medium or through a challan which is handed over to the accountant. The challan would contain information like the name of the customer, account number, amount to be deposited / withdrawn and the branch of the bank. If it is deposit, the denomination has to be written and handed over along with the amount.

The accountant verifies the information and updates the transaction in the ledger. Then the account balance is updated and customer is acknowledged with a receipt. For withdrawal, cash is handed over.

Whenever a person wishes to transfer cash to any other account, it can also be done by the same procedure as above (online or challan). But the challan would also contain information about the account to which fund is transferred.

The customer can close his account at any time, but after 6 months from the date of opening the account. When the account is closed, the amount in the account is funded back to the customer.

The bank also facilitates loans (housing loan, personal loan and auto loan). The loans are approved by the bank manager after scanning through the application submitted by the customer. Personal loans are awarded only to account holders who have a deposits more than 5 lakh. A personal home slab is maintained based on the amount of cash available per account. Percentage of loans change from time to time

Reports have to be generated for the bank manger, accountant and also for customers of the bank accordingly.

Mini statements / Detailed statements for customers have to be generated for the last 15 transactions or based on date interval.

Asset Management System

The asset management system (ASM) keeps track of a number of assets that can be borrowed, their ownership, their availability, their current location, the current borrower and the asset history.

Assets include books, software, computers, and peripherals. Assets are entered in the database when acquired, deleted from the database when disposed. The availability is updated whenever it is borrowed or returned.

When a borrower fails to return an asset on time the asset management system sends a remainder to the borrower and informs the asset owner.

The administrator enters new assets in the database, deletes obsolete ones and updates any information related to assets.

The borrower search for assets in the database to determine their availability and borrows and returns assets. The asset owner loans assets to borrowers. Each system has exactly one administrator, one or more asset owners and one or more borrowers. When referring to any of the above actor we use the term “user” .All users are known to the system by their name and their email address. The system may keep track of other attributes such as the owner’s telephone number, title address and position in the organization.

Insurance Management System

Insurance Management System is a stand-alone application that automates the routine tasks of an insurance agent. The System allows the user to add new policies, update policies and delete policies. Only registered agents can perform the following operations

A new Policy can be added with the following details

- Policy ID
- Policy type (General Insurance, Vehicle Insurance, Property Insurance, Accidental Insurance)
- Policy holder’s name
- Amount Insured
- Payment type (Quarterly, Half-yearly, Yearly)

- Maturity period
- Policy expiry date

The system generates a Policy Holder Id for every customer .A Policy can be deleted by giving the Policy Holder ID. Personal information of a customer can be modified at any point of time.

The system should be able to generate the following reports

- List of Policies expiring on a particular date.
- View all policy details of a particular customer
- View Maturity Period of a particular policy.
- View all policies from a particular category
- View details of a particular policy
- View policy details based on the payment type

Project Competency Management

The resource manager of a ABC software company manually tracks the competencies of its employees. This tracking is at project level.

For every project the company executes, it defines the required competencies as per industry standard. E.g. for Technical staffs, the competencies are tracked as per the certifications that they have obtained or need to obtain for the respective technologies.

Competencies of business analyst are tracked as per their domain level certifications. Competencies of project managers are tracked as per their management level certifications. So the system to be developed should allow the resource manager to:

1. Add project details to the system (Project Name, Project ID, Client Name, No. of team members expected, expected roles needed etc.)

2. Add various project roles and details of role for a particular project (roles such as business analyst, technical, project management). Details of role could be RoleID, RoleName, Expected Years of Experience, Expected Certifications required etc.

3. Add and modify details of the project members in a particular project which includes updating status of certification (whether certification obtained or in progress).

4. Generating status report for the mismatching competencies for a particular project (finding from the defined competencies for the roles and the certifications actually obtained).

Projects Tracker

Lee Wen is the CEO of Financial Software Services (FSS) engaged in software development. They have a large body of dedicated clientele. Whenever a client approaches FSS for a software service, Lee Wen negotiates with them the requirements, time required to complete the project (this is specified in terms of person-hours) and fees and finalizes the contract.

Every software developed by FSS goes through four phases viz., Requirements analysis and software specifications (RASS), Software Design (SD), Software Coding (SC), and Software Testing (ST). Once the contract is finalized, the project is given an identification number and name.

Lee Wen also estimates the time required for each phase. He appoints a project leader and team member. Depending on the size of the project there can be two or three or four members in it. All these details are filed. Nowadays, because of increase in business and dearth of experienced professionals a project leader may manage more than one project and a person may be member of more than one project.

Every week project leaders file a project status report giving such details as names of the phase, whether complete or not, how many person-hours were spent on the phase. Every week employees file time sheets giving such details as employee number, name, project id, project name and time spent on it. In case of inconsistencies in times between project status report and time sheets Lee Wen discusses with concerned persons and reconciles the discrepancies. Salaries are paid weekly in FSS. A project leader is paid Rs.200/- per hour and a team member is paid Rs.125/- per hour. Every employee is expected to put in forty working hours per week. In case of overtime, a project leader is paid Rs.250/- per every extra hour and while a team member is paid Rs.150/-. But if an employee works less than thirty five hours in a week a sum Rs.50/- is deducted for every hour less than forty.

Every week two reports are generated. The first report gives for each project, for each phase, estimated phase time, actual phase time; estimated total time, actual time spent so far; estimated cost, actual expenditure so far. The second report gives for each project person how much time he/she spent on a project.
Design a system which can handle the above tasks.