Software Requirements Specification (SRS)

E-BANKING BANK SOLUTIONS

Introduction

This Software Requirements Specification (SRS) describes requirements for BANK Operations. This SRS document describes the software functional and non-functional requirements of the BANK System. This document is intended to be used by the members of the project team that will implement and verify the correct functioning of the system. Unless otherwise noted, all requirements specified here are high priorities and committed for release.

Reference Documents

Document Title	Version No.
BRS	1.0

PURPOSE OF THE SYSTEM

A bank is a financial institution licensed by a government. Its primary activities include providing financial services to customers while enriching its investors. Many financial services were allowed over time. Banks are important players in financial markets and offer financial services such as investment funds.

Under English common law a banker is defined as a person who carries on the business of banking, which is specified as

- Conducting current accounts for his customers
- Paying cheques and others drawn on him
- Collecting cheques for his customers

With years, banks are also adding services to their customers. The Indian banking industry is passing through a phase of customers market. The customers have more choices in choosing their banks. A competition has been established within the banks operating in India.

With stiff competition and advancement of technology, the service provided by banks has become more easy and convenient. The past days are witness to an hour wait before withdrawing cash from accounts or a cheque from north of the country being cleared in one month in the south.

Scope of the System

1. Admin can able to maintenance all the customer information
2. Manager can able accept and close an account
3. Manager can able sanction loans, accept customer requests
4. Customer able to see transactions and generate can e-statement
5. Customer can search for various details as the account's balance, details of]transactions, interest amounts, debits / credits, etc
6. Provides services bills like electricity bill, telephone bill, etc
7. Online tax payments and transfer funds
8. Admin or manager can able the generate the all the reports based on the requirement

THE EXISTING SYSTEM

Existing system is running as semi automated system, the following problems we are faced through existing system.

Data Duplication: The same data gets repeated over and over since the workers find it hard to keep track of the documents, information and transactions

Lack of security: Since data is stored in filing cabinets it is freely available to anyone. if information falls into the wrong hands it can be used against the company and customers and can blackmail them.

Common errors: When entering data customers might have accidentally switched details and data since it is hand written.

Inconsistency of data: There will be unavailability for future use, since data might get misplaced during manual filing. So data won't be preserved properly for future use.

Repetition of work: If there are any changes to be made, the data will have to be entered again. At times the worker would forget to make the changes or forget that they had already altered it and might redo it again, its again time consuming.

Too much paper work: Since everything and every detail are written down manually in paper there will be too much paper work!

Space consuming: Since the data and paper is stored in filing cabinets it consumes too much place, as the amount of work done on paper increases the filing cabinets too increases.

Slow retrieval of data: The information of customers and details are stored in different parts of the site and so takes a long time to retrieve the data. It takes a long time to find the information about a relevant person. In case of a Delivery, the delivery will be held back. This results in a sharp drop in sales, unhappy customers and a bad impression on the banks.

PROPOSED SYSTEM

While most of us have heard about online banking services, more than a majority of us have probably not even tried it out yet. It could possibly be because we are more comfortable working with real people; paper and money instead of its virtual counterpart, as performing transactions over the Internet can be very impersonal. Whatever may be the reason; there are a number of advantages and disadvantages to online banking services.

First let's start off with the advantages of online banking. First and foremost, online banking is very, very, very convenient. It will allow you to pay your bills and make transactions anytime during the day and the week. The bank will never close because you can access it through your laptop or computer. So, no matter in which country you are anywhere in the world, you can go online and handle your finances.

Secondly, online banking is very fast, effective and efficient. Over the Internet, you can make transactions that are typically executed and performed at a much faster pace than at ATM's. Online banking services also give you the option of handling several different bank accounts from one site itself.

Most online banking sites are compatible with programs like Microsoft Money and Quicken, which makes management of assets more effective.

STUDY OF THE SYSTEM

In the flexibility of uses the interface has been developed a graphics concepts in mind, associated through a browser interface. The GUI's at the top level has been categorized as follows

1. **Administrative User Interface Design**
2. **The Operational and Generic User Interface Design**

The administrative user interface concentrates on the consistent information that is practically, part of the organizational activities and which needs proper authentication for the data collection. The Interface helps the administration with all the transactional states like data insertion, data deletion, and data updating along with executive data search capabilities.

The operational and generic user interface helps the users upon the system in transactions through the existing data and required services. The operational user interface also helps the ordinary users in managing their own information helps the ordinary users in managing their own information in a customized manner as per the assisted flexibilities.

NUMBER OF MODULES

The system after careful analysis has been identified to be presented with the following modules:

The Modules involved are

1. Bank Administrator
2. Bank Manager
3. Customers
4. Search
5. Reports
6. Authentication

Bank Administrator

Administrator is a super user treated as owner of this site. He can have all the privileges. The admin services are some reusable components for the MAS and common services like user authentication, user service role mapping and user management.

Administration can keep track the following tasks:

- **Add Mangers**

  Admin can Add new Managers to the branch and he can edit the Managers.

- **Add Branches**
  Administrator adds new branches to the bank and admin can change ane update the branch details which are already exist.
- **Add New Loans**
  Administrator can add new types of loans which are required for the situation and he can fix the maximum amount for that particular loan type.
- **Add Areas**
  Administrator adds new areas. The bank supposed to start a new branch in other country or in the same country he can add country and location where he wants to start a branch.

Bank Manager

The working employee on a Bank with some special powers is called Bank Manager. They can perform different functionality on the particular bank branch.

- Manager can receive the new account request and he can view the old accounts under his bank branch.
- Manager can manage the bank users request for new loans, request for new card(Credit/Debit) and requests for new check books.
- Manager can view the transaction details like username, transaction date and amount Deposited etc..

Users

- User can change his personal information and he can change the nominee details of his account
- User can send request for new loans, new cards like credit and debit cards, new check book and he can request for reactivation of his account.
- User can transfer the amount to another account.

Search

- Various types of search like Account details, Transaction details, card details and loan details and these search is maintained by the user.

Reports

Different kind of reports is generated by the system.

- Different types of reports on Managers, Branches these reports maintained by the administrator.
- Different types of reports on Requests, Payments, Customers, Nominee details these reports maintained by the Bank Branch Manager.

Authentication

- The process of identifying an individual usually based on a username and password.
- In security systems, authentication is distinct from authorization, which the process of giving individuals access to system object based on their identity.
- Authentication merely ensures that the individual is who he or she claims to be, but says nothing about the access rights of the individual.

INPUTS AND OUTPUTS

The major inputs and outputs and major functions of the system are follows:

Inputs:

- Admin/Manager enters user id and password for login.
- User enters his user id and password for login.
- New user gives his completed personnel, address and phone details for registration.
- Admin gives different kind of user information for search the user data.
- Administrator giving information to generate various kinds of reports.

Outputs:

- Admin can have his own home page.
- Users enter their own home page.
- The new user's data will be stored in the centralized database.
- Admin get the search details of different criteria.
- Different kind of reports is generated by administrator.

Functional components of the project

Following are the functional needs of the system. More functionality can be added to enhance the application.

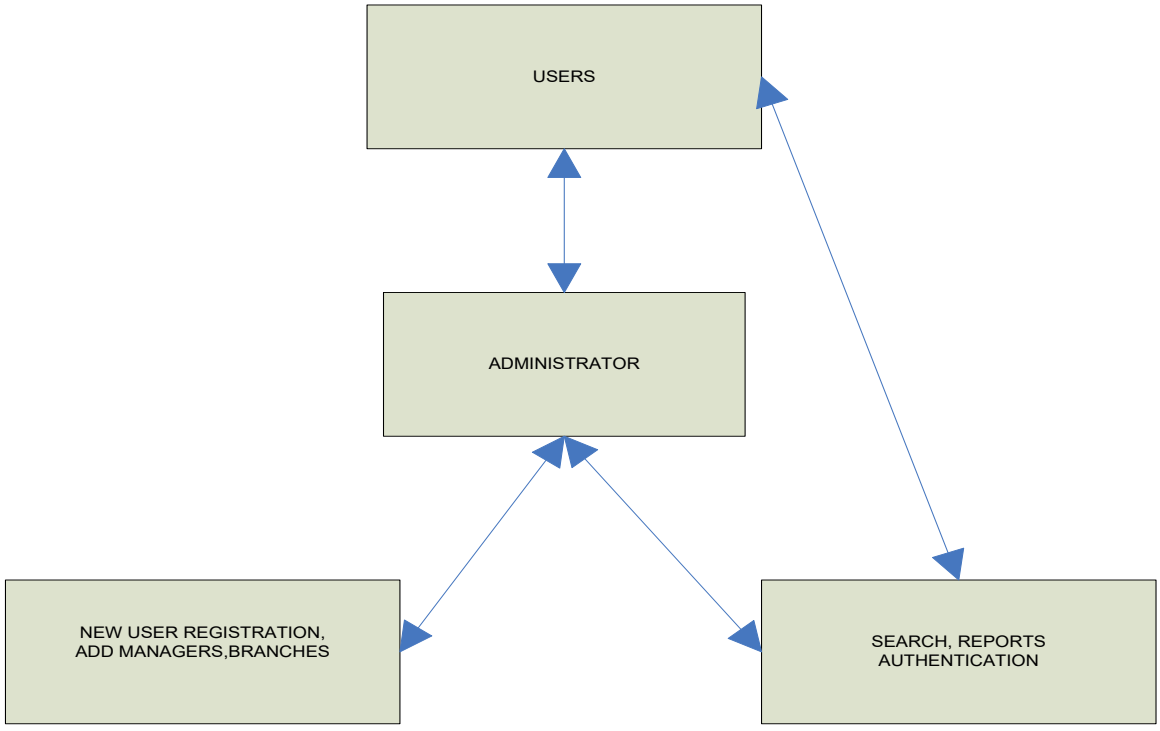
1. Customer must have a valid User Id and password to login to the system

2. If a wrong password is given thrice in succession, that account will be locked and the customer will not be able to use it. When an invalid password is entered a warning is given to the user that his account is going to get locked.
3. After the valid user logs in he is shown the list of accounts he has with the bank.
4. On selecting the desired account he is taken to a page which shows the present balance in that particular account number
5. User can request details of the last 'n' number of transactions he has performed.

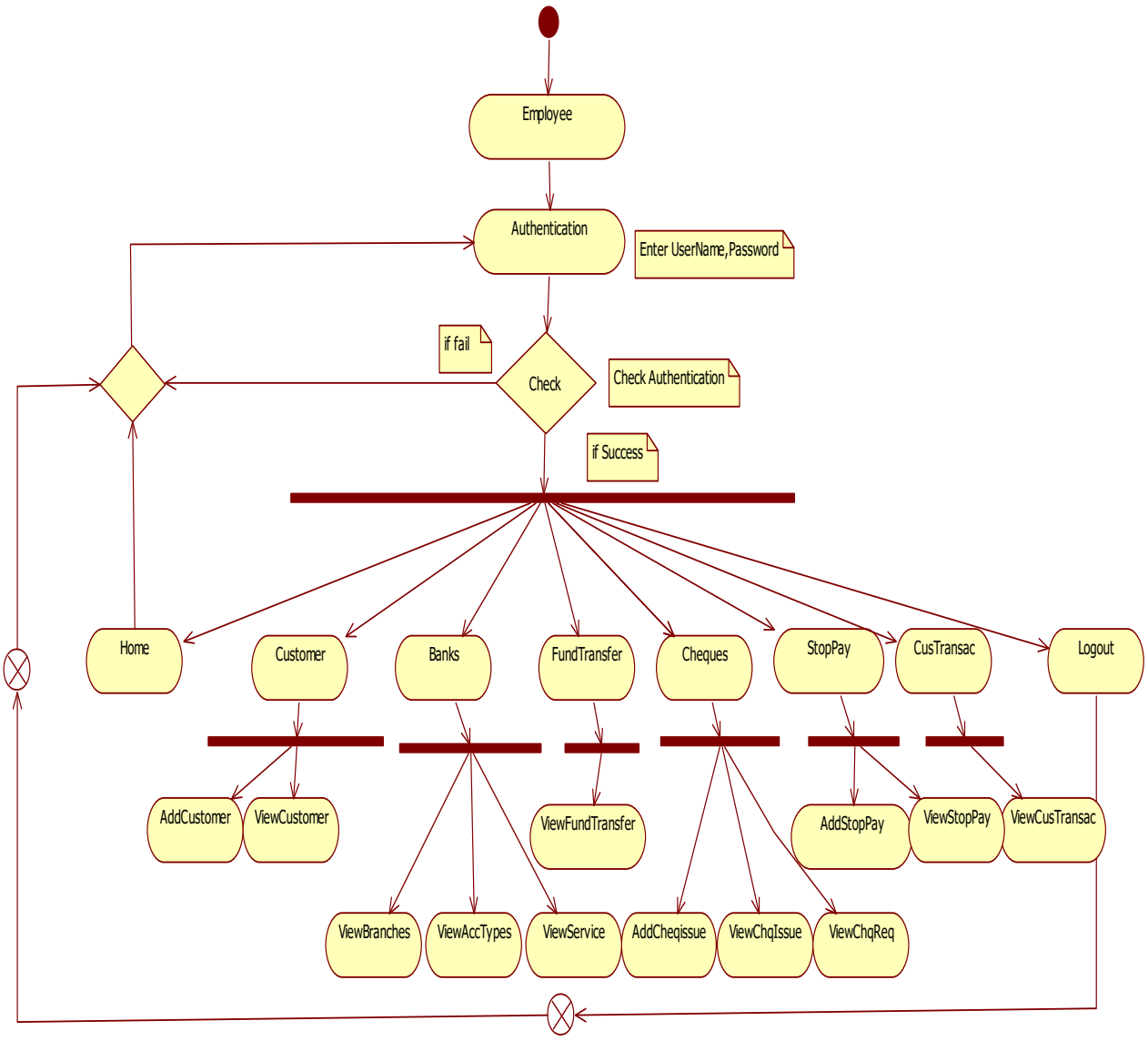
A report can also be taken of this

6. User can make a funds transfer to another account in the same bank. User is provided with a transaction password which is different from the login password.
7. User can transfer funds from his account to any other account with this bank. If the transaction is successful a notification should appear to the customer, in case it is unsuccessful, a proper message should be given to the customer as to why it failed.
8. User can request for cheque book/change of address/stop payment of cheques
9. User can view his monthly as well as annual statements. He can also take print out of the same.

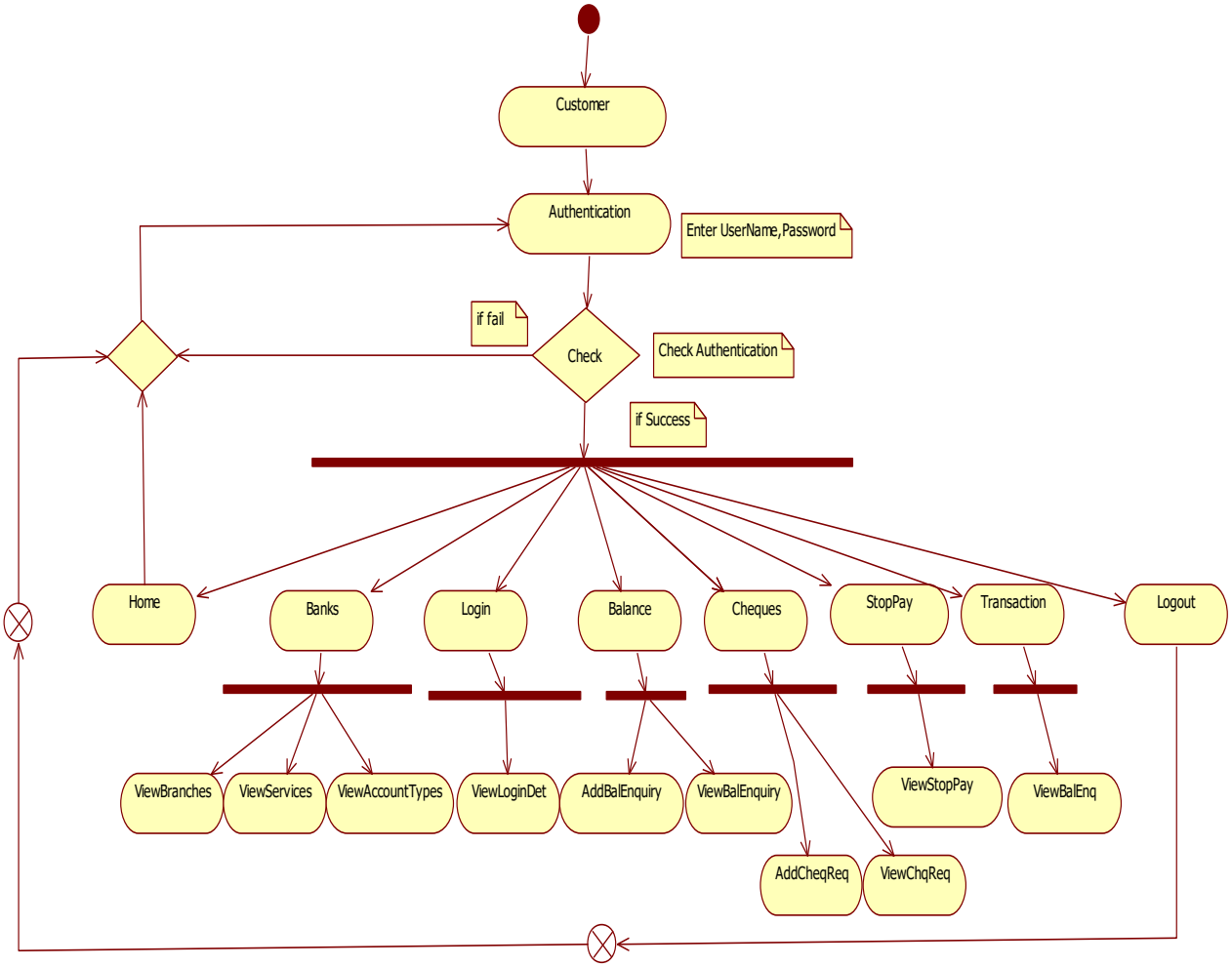
CONTEXT LEVEL DIAGRAM



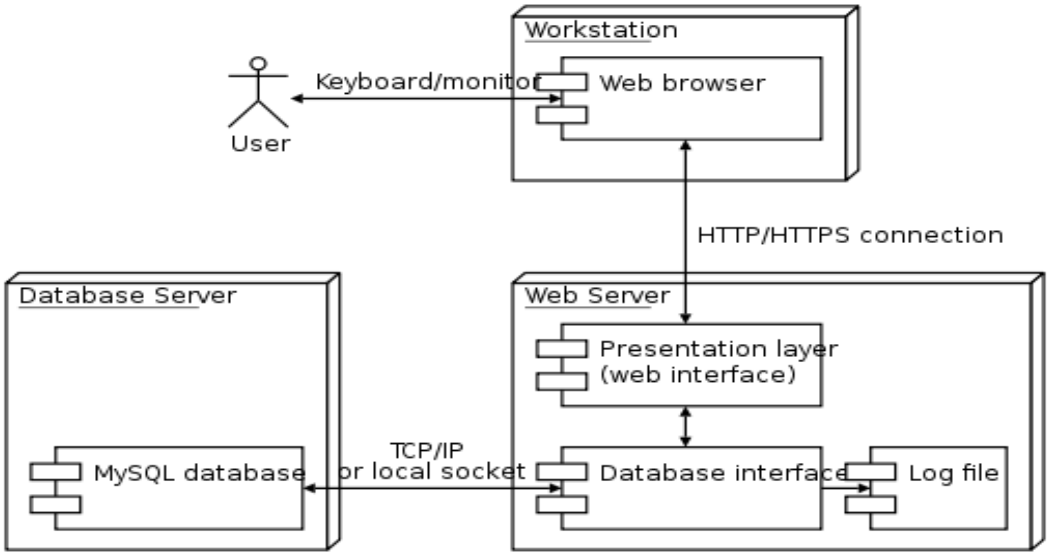
Employee Activity Diagram:



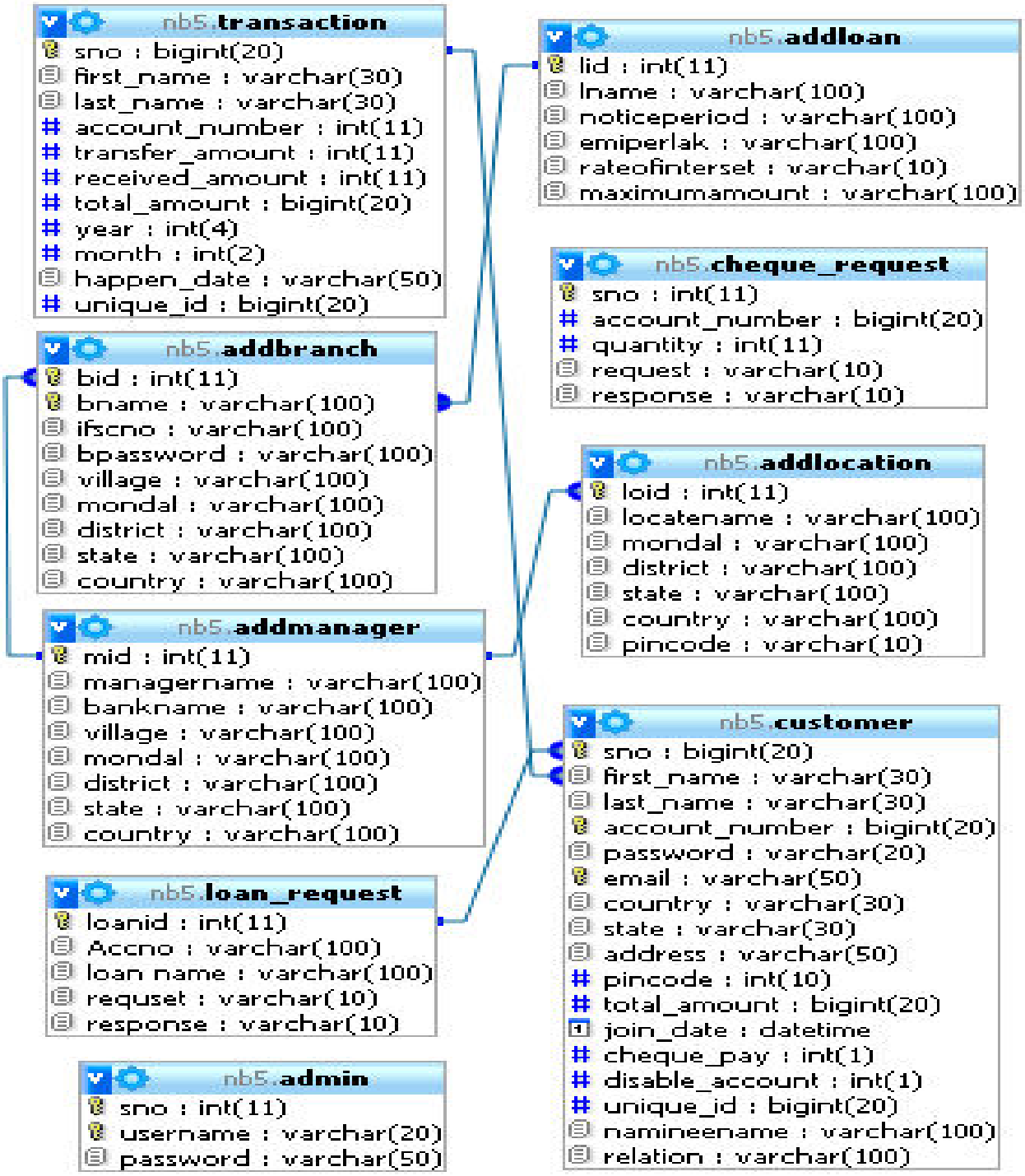
Customer Activity Diagram:



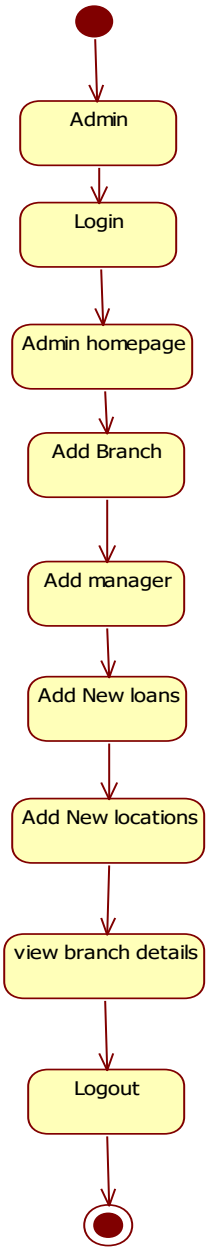
Deployment Diagrams



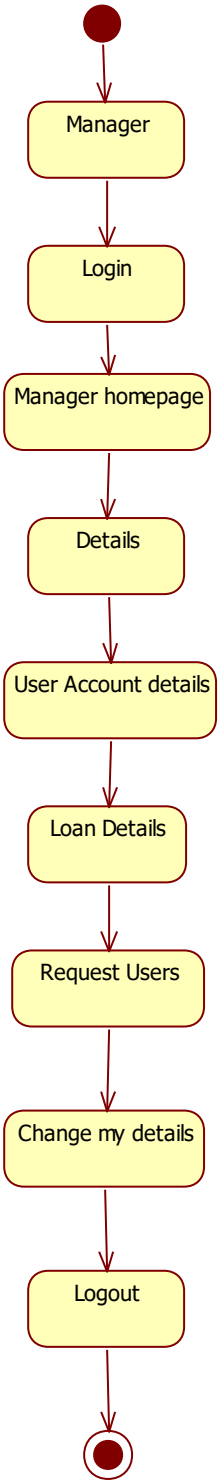
Validation Details



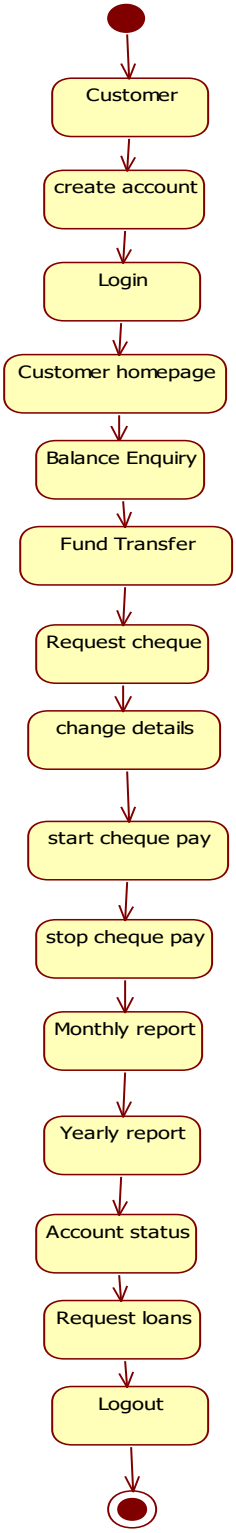
Admin State chart Diagram:



Manager State Chart Diagram:



Customer State Chart Diagram:



APPLICATION DEVELOPMENT:

N-Tier Applications:

N-Tier Applications can easily implement the concepts of Distributed Application Design and Architecture. The N-Tier Applications provide strategic benefits to Enterprise Solutions. While 2-tier, client-server can help us create quick and easy solutions and may be used for Rapid Prototyping, they can easily become a maintenance and security night mare

The N-tier Applications provide specific advantages that are vital to the business continuity of the enterprise. Typical features of a real life n-tier may include the following:

- Security
- Availability and Scalability
- Manageability
- Easy Maintenance
- Data Abstraction

The above mentioned points are some of the key design goals of a successful n-tier application that intends to provide a good Business Solution.

Definition:

Simply stated, an n-tier application helps us distribute the overall functionality into various tiers or layers:

- Presentation Layer
- Business Rules Layer
- Data Access Layer
- Database/Data Store

Each layer can be developed independently of the other provided that it adheres to the standards and communicates with the other layers as per the specifications.

This is the one of the biggest advantages of the n-tier application. Each layer can potentially treat the other layer as a 'Block-Box'.

In other words, each layer does not care how other layer processes the data as long as it sends the right data in a correct format.

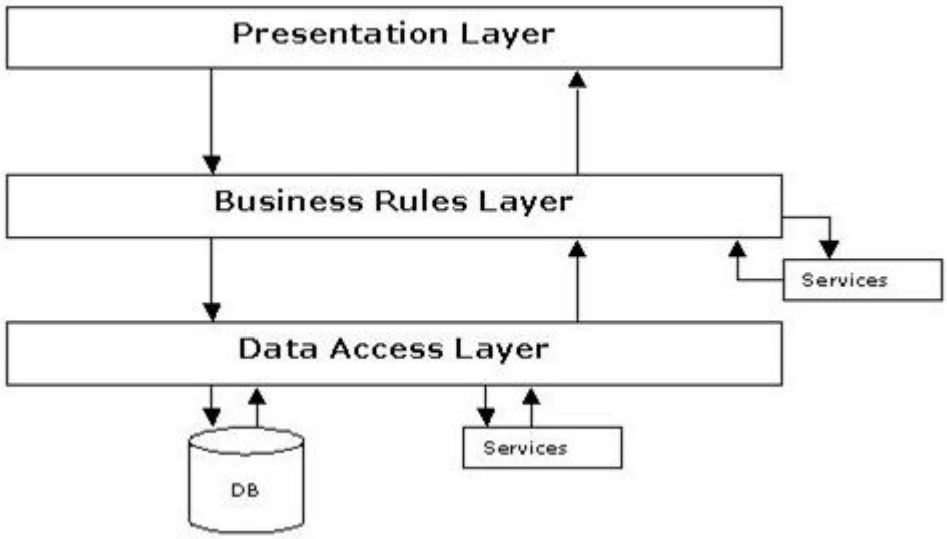


Fig 1.1-N-Tier Architecture

1. **The Presentation Layer:**
   Also called as the client layer comprises of components that are dedicated to presenting the data to the user. For example: Windows/Web Forms and buttons, edit boxes, Text boxes, labels, grids, etc.
2. **The Business Rules Layer:**
   This layer encapsulates the Business rules or the business logic of the encapsulations. To have a separate layer for business logic is of a great advantage. This is because any changes in Business Rules can be easily handled in this layer. As long as the interface between the layers remains the same, any changes to the functionality/processing logic in this layer can be made without impacting the others. A lot of client-server apps failed to implement successfully as changing the business logic was a painful process.
3. **The Data Access Layer:**

   This layer comprises of components that help in accessing the Database. If used in the right way, this layer provides a level of abstraction for the database structures. Simply put changes made to the database, tables, etc do not affect the rest of the application because of the Data Access layer. The different application layers send the data requests to this layer and receive the response from this layer.
4. **The Database Layer:**
   This layer comprises of the Database Components such as DB Files, Tables, Views, etc. The Actual database could be created

using Mysql, Oracle etc.

In an n-tier application, the entire application can be implemented in such a way that it is independent of the actual Database. For instance, you could change the Database Location with minimal changes to Data Access Layer. The rest of the Application should remain unaffected

PERFORMANCE REQUIREMENTS:

Performance is measured in terms of the output provided by the application. Requirement specification plays an important part in the analysis of a system. Only when the requirement specifications are properly given, it is possible to design a system, which will fit into required environment. It rests largely in the part of the users of the existing system to give the requirement specifications because they are the people who finally use the system. This is because the requirements have to be known during the initial stages so that the system can be designed according to those requirements. It is very difficult to change the system once it has been designed and on the other hand designing a system, which does not cater to the requirements of the user, is of no use.

The requirement specification for any system can be broadly stated as given below:

- The system should be able to interface with the existing system
- The system should be accurate
- The system should be better than the existing system

The existing system is completely dependent on the user to perform all the duties.

FEASIBILITY REPORT:

Preliminary investigation examine project feasibility, the likelihood the system will be useful to the organization. The main objective of the feasibility study is to test the Technical, Operational and Economical

feasibility for adding new modules and debugging old running system. All system is feasible if they are unlimited resources and infinite time. There are aspects in the feasibility study portion of the preliminary investigation:

- Technical Feasibility
- Operation Feasibility
- Economical Feasibility

Technical Feasibility

The technical issue usually raised during the feasibility stage of the investigation includes the following:

- Does the necessary technology exist to do what is suggested?
- Do the proposed equipments have the technical capacity to hold the data required to use the new system?
- Will the proposed system provide adequate response to inquiries, regardless of the number or location of users?
- Can the system be upgraded if developed?
- Are there technical guarantees of accuracy, reliability, ease of access and data security?

Earlier no system existed to cater to the needs of 'Secure Infrastructure Implementation System'. The current system developed is technically feasible. It is a web based user interface for audit workflow at NIC-CSD. Thus it provides an easy access to the users. The database's purpose is to create, establish and maintain a workflow among various entities in order to facilitate all concerned users in their various capacities or roles. Permission to the users would be granted based on the roles specified. Therefore, it provides the technical guarantee of accuracy, reliability and security. The software and hardware requirements for the development of this project are not many and are already available in-house at NIC or are available as free as open source. The work for the project is done with the

current equipment and existing software technology. Necessary bandwidth exists for providing a fast feedback to the users irrespective of the number of users using the system.

Operational Feasibility

Proposed projects are beneficial only if they `can be turned out into information system. That will meet the organization's operating requirements. Operational feasibility aspects of the project are to be taken as an important part of the project implementation. Some of the important issues raised are to test the operational feasibility of a project includes the following: -

- Is there sufficient support for the management from the users?
- Will the system be used and work properly if it is being developed and implemented?
- Will there be any resistance from the user that will undermine the possible application benefits?

This system is targeted to be in accordance with the above-mentioned issues. Beforehand, the management issues and user requirements have been taken into consideration. So there is no question of resistance from the users that can undermine the possible application benefits.

The well-planned design would ensure the optimal utilization of the computer resources and would help in the improvement of performance status.

Economic Feasibility

A system can be developed technically and that will be used if installed must still be a good investment for the organization. In the economical feasibility, the development cost in creating the system is evaluated against the ultimate benefit derived from the new systems. Financial benefits must equal or exceed the costs. The system is economically

feasible. It does not require any addition hardware or software. Since the interface for this system is developed using the existing resources and technologies available at NIC, There is nominal expenditure and economical feasibility for certain.

Specifications:

Software Specifications

- **Operating System** : Windows
- **Database Server** : MySQL
- **Client** : Java Script
- **Tools** : Xampp
- **User Interface** : HTML with Ajax
- **Code Behind** : PHP
- **Web server** : Apache

Hardware Specification:

- **Processor** : Dual Core
- **RAM** : 1GB Ram

Hard Disk : PC with 20GB