Kumaraguru College of Technology

Department of Computer Science and Engineering
Coimbatore– 641006
April 2003

NET BANKING WITH CRM

Project work done at

PENTASOFT TECHNOLOGIES LTD

PROJECT REPORT P- 1023

Submitted in partial fulfillment of the

Requirements for the award of the degree of

Master of Computer Applications

Bharathiar University, Coimbatore.

Submitted by

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CERTIFICATE

This is to certify that the project work entitled

NET BANKING WITH CRM

Submitted to the

Department of Computer Science and Engineering

Kumaraguru College of Technology

In partial fulfillment of the requirements for the award of the degree of Master of Computer Applications is a record of original work done by Sathyatharani K.S, Reg.No.0038M1064 during her period of study in the Department of Computer Science and Engineering, Kumaraguru College of Technology, Coimbatore under my supervision and this project work has not formed the basis of award of any Degree/Diploma Associateship/Fellowship or similar title to any candidate of any university.

Professor and Head **Staff-in-charge**

Submitted for University Examination held on 16.04.2003

Internal Examiner **External Examiner**

16/4/03

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TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. SATHYATHARANI K.S.** Student of **KUMARAGURU COLLEGE OF TECHNOLOGY**, had completed her project in "**Net Banking with CRM**" using **ASP, SQL SERVER 2000** from December 2002 to March 2003 at our organization for the partial fulfillment of **M.C.A** degree awarded by **Bharathiyar University.**

During this period her performance was good and we wish her for future endeavors.

PENTASOFT TECHNOLOGIES LIMITED CHENNAI-600 024.

Date: 29-03-2003
Place: Chennai – 24.

Authorized Signatory
Pentasoft Technologies Limited.

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TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. SATHYATHARANI K.S.** Student of **Kumaraguru College of Technology**, had completed her project in "**Net Banking with CRM**" at our organization and I assure that this project is not submitted by any of the University.

Date: 29-03-2003
Place: Chennai – 24.

Project Guide
Pentasoft Technologies Limited.

DECLARATION

I hereby declare that the project work, '**NET BANKING WITH CRM**' submitted by me (Sathyatharani K.S, 0038M1064) towards the fulfillment of the degree of Master of Computer Applications from Bharathiar University has not formed the basis for the award of any degree, diploma or association of similar titles. The project work is done independently by me under the guidance of Mr.S.G. Sivakumar (Internal Guide) and Mr.S. Karthikeyan(External Guide).

Sathyatharani K.S

Internal Guide

ACKNOWLEDGEMENT

Before I present this project, I wish to express my sincere gratitude to **Dr.K.K.Padmanabhan, Ph.D.,** Principal, Kumaraguru College of Technology, Coimbatore for his encouragement.

I wish to express my sincere thanks to the head of the department **Dr.S.Thangasamy, Ph.D.,** for having given me permission to carry out the project.

I am grateful to **Mr.G. Sathyamoorthy M.com.**, project incharge,Pentasoft Technologies Ltd, Chennai, for giving an opportunity to under take this project.

I wish to thank **Mr.S. Karthikeyan M.C.A**, project guide,Pentasoft Technologies Ltd, Chennai, for those caring support and guidance, which helped me in the completion of this project.

Special thanks are due to **Mr.S.G. Sivakumar, M.C.A.,** my guide and tutor for his continued interest and guidance at all stages of this project.

Finally I thank all those who have contributed in various ways to this project by ways of their valuable suggestions and ideas.

SYNOPSIS

This project work entitled "Net Banking with Customer Relationship Management" is a Web based application which is developed for Pentasoft technologies ltd, Chennai using ASP as the Front End and SQL Server 2000 as the Back End tools.

The objective of this application is to automate the banking operations. On becoming the customers of the bank, they can enjoy the various services offered by the bank which includes accounting, deposit and loans.

Accounting involves deposit and withdrawal transactions on current or savings account. Certain amount can be deposited in his or her account or can be withdrawn from the account. Deposit can be either a fixed deposit or recurring deposit. In case of fixed deposit, a fixed amount of money for a specified period and at a fixed rate of interest is kept with the bank. The advantage of recurring deposit is that interest is calculated on a compound interest basis.

Loans are available for education, business, agriculture, consumer products, housing and vehicle. The customers can avail the loan based on their need by submitting some security documents. The loan must be repaid in installments within a period.

The highlight of the application is the services provided to the customers like viewing periodic transactions, change of contact details, mobile bill pay, giving suggestions and complaints, transferring of money from one account to another.

TABLE OF CONTENTS

1. INTRODUCTION

1.1 Project Overview

The project entitled "Net Banking with Customer Relationship Management" is developed to perform banking operations. A person can enquire various details and he himself can see various details on the system.

On becoming a customer, he is given an user id and password using which he can obtain the services like mobile bill payment, periodic transactions, transfer of amount from one's account to another, give suggestions and complaints, change in contact details like address and phone number. Even a non-customer can give suggestions.

Each customer is identified uniquely by his user id. To open an account he must submit certain details asked by the bank. An account number is given to him. The minimum balance amount must be available in his account. As the customer gives the details like his customer id, account number, and the amount involved in the transaction, the operator enters those details into the net banking system and the transaction of withdrawal or deposit is carried out. The transactions can be done using cheques also.

Interest table is maintained separately. Interest for the deposited amount is calculated and things are done according to the type of the deposit. The rate of interest is applied based on applicable interest rates of the bank at the time of account opening. Only the employee can perform the transactions.

Various details have to be submitted for obtaining the loan facilities. Each loan is identified by unique number. Installment amount and the pay date are calculated based on the interest and repayment period. The corporate and the employee details are maintained separately. The loan is cancelled once the full payment is over.

1.2 Organization File

With technology and business criticality driving the pace in global IT markets, value and speed are the factors that differentiate the leaders. Pentasoft has continuously upgraded skills and services to clients worldwide. Pentasoft has significantly improved the offshore model to increase speed of delivery, which is critical to success today.

Pentasoft is a SEI-CMM level 4 and ISO 9001 certified company. In recognition of the fact that building social and emotional capital is as important as intellectual capital, Pentasoft has set up a modern training campus in Kelambakkam, Chennai, with state-of-the-art facilities.

Its sister concerns are Pentamedia, Media dreams, Pentafour food products. Leading corporate bodies that have benefited from their interactive solutions include Asian paints, Maharaja Group, Government of Andhra Pradesh, NRSA, CMC, Sun TV, IBM and Reserve Bank of India.

The products are available in a variety of industry segments in areas like Manufacturing, Finance, Banking, Insurance, Healthcare, Retail Trade, Data Warehousing, HR, Sales and Inventory.

Achievements

- Major orders from RBI Mint.
- Automation of 129 branches for UCO Bank.
- Total solution on turnkey basis for Metro Railway, Calcutta.
- Major order from TAIB Bank.
- Tie-up to market ORION and MERLIN ERP products in India, Bangladesh, Malaysia, Indonesia, Thailand, Singapore and Australia.
- All star partner award from IBM – Best VAR.

Global Presence

There are various branches of the organization all around the world like Bangalore, Chennai, New Delhi, Hyderabad, Mumbai, Pune, Trivandrum, Mangalore, Kolkotta, Ahmedabad, Secundrabad in India and Detroit, Los Angels (USA), Singapore, Malaysia, Mauritius, London, Melbourne, Dubai, Nepal, Thailand, Canada, Kenya and Japan abroad.

Highlights

- Agreement with Interact Commerce Inc, Arizona, USA for marketing their CRM product "Sales Logic" and Contact Management System "Act".
- Association with a leading Telecom giant in the African region to provide consultancy services in the Telecom segment.
- Partnering with Al Aquili Group of companies in Dubai for onsite implementations support.
- Tie-up with Nitec Corporation, IT subsidiary of Nissho Iwai Corporation, the largest trading conglomerate, for developing business in Japan.
- Tie-up with ID media Ag in Germany for providing support services.
- New products added to, range of Insurance, Banking, Trading etc.
- A 25,000 sq ft software development facility in Hyderabad.

The opportunity and potential unleashed by the sweeping IT revolution is placing India and its lead ayers on the threshold of a second tryst with destiny. Pentasoft is strategically placed to be part of this yst.

System study and analysis

2. SYSTEM STUDY AND ANALYSIS

2.1 Existing System Environment - Limitations

The existing system has got certain limitations. The calculations like that of calculating maturity date and maturity amount is done manually. The interest calculations are also done automatically.

It is very hard to maintain the various details regarding the customers and the person who is likely to become our customers after enquiry processes. The details regarding various branches are maintained separately. A person who has to know the various banking operations has to enquire the bank employee.

Ironically, the customer services are not provided. The customers have very little interaction with the bank. There is no facility for him to view the Transactions he has committed and payment of the mobile bill. There is no chance for him to perform certain operations all by himself like transferring amount from one account to another.

2.2 Proposed System

The proposed system automates the banking operations. The details or maintain for various branches of the bank. The calculations for accounting, the person and loans are done automatically.

And the proposed system concentrates on the customer services. The customers can perform certain operations by themselves. The customer may change his address or phone number, pay the mobile bill, view the transactions and many other operations like giving suggestions and complaints.

The proposed system consists of the following features:

- *Web –based*: The system is a web based application. The application provides a user friendly environment for the customers.
- *Operator Friendly*: The system provides user friendly at the employee side. The employee can perform his operations according to the requirements of the customer.
- *Security*: Multi level security where critical information may / will be hidden from other users. The application should implement two levels of security. Secure Sockets Layer (SSL) can be implemented at the core level and the data base level security can be set for validating the user name and password. Password level security can be set and the user level for logging in purpose to prevent misuse of the application.
- *Customizable* : The information view can be customized as per the requirements of that day. The services provided by the bank can be changed as per the requirements.
- *CRM* : The system is capable of implementing Customer Relationship Management (CRM). CRM aims at achieving customer empowerment and satisfaction and maximize customer loyalty and revenue. CRM systems provides a chance to understand better about customer wants and needs.
- *Provide Access Anywhere* : Access to services will be every hour of every day, from where ever the customer chooses. The system is a web based process. The customers may be able to give the suggestions or problems.
- *Enable customers help themselves*: customers will have access to information and can choose self – service. Many customers will prefer to find information or initiate transaction on their own.
- *Knowing the customers*: The bank have to know the customer needs and wants through every customer contact. The Bank may capitalize on the knowledge gained by them, so that they are capable of building better relationships with their customers and to cater as per the needs.
- *Enable employees to deliver great device*: The employees of the bank are the cornerstone to great service and must be enabled with the right tools, processes and information so that they are empowered to help the customer with various transactions as per they need. They must be able to enhance speedy customer service by all means.

The goal of the proposed system is

- Increase the availability for employees or customers.

- Extend the information supply to all.
- Process requires more efficiently.

All this is to ensure

- Increase customer's satisfaction.
- Long –term customer loyalty.
- Differentiation from competitors.

Description of the Modules

Customer :

The customer module contains the details of the customers of the bank. It includes various details regarding the customers like their name, address and other contact details. All these details are collected through the inquiry form. The joint applicant's details are also collected. The address of the customer is verified when his account is opened through his ration card. His photos and reference details are obtained. As the new customer comes in, a unique id created for him through which he can be identified.

The details in the inquiry form remains even if he is not becoming our customer for future prediction. The applicant is inquired for which facility is required. It includes various things like the account opening, current or savings and deposit and also loans. An organization can have its employees as our customer.

Bank :

The bank details are stored and maintained. The bank contains various branches. They are all connected through the network. The bank details must be maintained with the highest security. Only the manager of the various branches can modify or read any detail stored in the bank table.

Through the customer id provided to the customer, we can identify to which branch the customer belongs to. The overall amount involved in the bank is maintained. The required reports can be obtained only by the higher authority. The employee table contains the details of the employees of the bank. It helps in giving specific id to them for them to facilitate customer care.

Account :

The account module involves all the accounting details. There are two types of accounts. It includes the main savings and current accounting. The saving accounts require a minimum balance to be maintained. Two main operations are involved in both the cases which are the deposit and the withdrawal.

The customer gives in his account number and the amount involved in the transaction. When the customer does withdrawing the minimum balance is checked. The mode of pay can be cash, demand draft, and cheque. All these details are also maintained in a separate table. When the account is opened, the customer is given an id and the account number which are unique. All the transactions are stored in the transaction table of the account.

Deposit :

This module consists of all the depositing activities. The deposit can be either fixed or recurring. The recurring deposit involves monthly transactions. The amount is deposited by the customer in one of the following methods. The customer can get monthly interest in the recurring deposit. Loans can be availed over the fixed deposit. The interest details can be obtained from the interest table. The mode of pay also varies. Those details are also stored in a separate table.

The maturity date is calculated from the details given in both the cases. The table is updated after each transaction. Number of years of deposit is of important criteria. All the details regarding the customer are maintained in the customer table. When the account is opened the option is got whether accounting or deposit.

Loan :

The loan module involves all the loans available in the bank. The various loans available are

- vehicle
- education
- housing
- consumer products
- business

- agriculture

All the security documents are obtained from the customer and verified. The value of the asset is considered and the allowable loan is granted. That amount is sanctioned to the customer. The installment amount and the period are also found. The customer has to pay accordingly. The interest detail is obtained from the interest table. Each loan is of a different kind of its own. Loan number is provided to identify a particular loan. The customer is identified through the id. Annual income of the customer is also collected.

CRM (Customer Relationship Management):

Customer care is of an important concern. A good relationship between the customer and the bank is essential. The CRM module provides various facilities to the customer like

- The customer can view the balance in his account.
- He can view his transactions done on a date and so
- Transferring amount from one account to another
- Paying of the mobile bill
- Change of address
- Complaints
- Suggestions (non customers also)
- View various schemes (non customers also)

2.3 Requirements on new system

Functional Requirements

On becoming the customer of the bank, he is given a user id and password to logon to the system. Thus he can get the benefit of all the services offered by the bank Even before becoming the customer, he can view the details of the product also. The employee can perform operations on new customer registry, accounting, loan, deposit once they login. The customers are provided with the information on the loan details etc.,

Information processing required:

- Verification of customer details.
- Validation of the password.
- Checking the minimum balance in the account.
- Checking for duplicate entries at all these stages.
- Checks on the loan payment date.
- The interest calculated on the deposit amount must be validated.
- The amount reduction from the account on mobile bill pay.
- Customers can change only their contact details.

Performance requirements

Security:

The application should implement two levels of security. Secure Sockets layer(SSL) can be implemented at the core level and database level security can be set for validating the username and password. Password level security can be set and user level for logging in purpose to prevent misuse of the application.

Availability:

The application must be available for the bank hours. There must be a backup server in case the main server fails.

Capacity:

The application will be accessed by many users and the database is capable of handling multiple requests at the same time.

Response time:

The response time for the application depends on the network traffic and the internet connection speeds of the client. The server must be able to handle requests from various sources and respond with the fastest possible speed.

Design Constraints

Hardware Requirements:

- A server that will run the application.
- Computers and other devices for the development.

Software Requirements:

OS : Windows 95/98/NT/2000/XP

Server : Windows NT/2000 running IIS

Client : Internet Explorer 5 or above

Development : Internet Explorer 5 or above with support for ASP, HTML and Scripting languages.

User interface screen formats

The users, both the employees and customers are provided with screens login, enter details of requests and for all other services offered. The screens will be designed in HTML using the scripting languages such as JavaScript, VBScript. The client will be a thin-client with only the web browser at their end and all the processing will be server side using ASP.

Other Requirements

Operations required by the user:

Customer login

On becoming a customer, he must be given a user id and password using which he can enter the screen where he can perform various operations.

Employee login

The employee of the bank who is responsible for performing various banking operations enters in using their user id and password.

Data input

The employee must enter all the necessary details in the respective form. The customer also has to supply all the required information.

2.4 User Characteristics

The application is developed keeping the customers in mind. The customers who wish to access the services must be able to use the system and must be aware of certain operations so that he can use the system all by himself. The same holds for the employees.

- The users select their own options as per their need.
- The users can logout from any page if he wishes to do so.
- Mainly, the customers must be able to give suggestions and complaints.
- The enquirers must be able to access the system to know more information.

Programming environment

3. PROGRAMMING ENVIRONMENT

3.1 Hardware Configuration

Hardware Set Up profile

Client Side

- Pentium 166 MHz Machine
- 32 MB RAM
- Cache memory 256 KB
- Network Interface Card, TCP/IP

Server Side

- Pentium II Machine 233 MHz
- 64 MB RAM
- Network Interface Card, TCP/IP

Hardware Requirements

Processor type	: Pentium II Processor
RAM	: 32 Megabytes
C: Hard Disk Drive	: 2 GB
A: Diskette Drive	: 1.44 Megabytes
Keyboard	: SAMSUNG
Mouse	: Logitech
Monitor type	: MICROTEK

3.2 Software Configuration

Technology

OS : Windows 95/98/NT/2000/XP

Server : Windows NT/2000 running IIS

Client : Internet Explorer 5 or above

Development: Internet Explorer 5 or above with support for ASP, HTML and Scripting languages.

Software Specification

Client side

- Windows 95
- Internet Explorer, Netscape Navigator
- Internet Connection Tool

Server side

- Windows NT 4.0
- Web Explorer
- SQL Server 2000 as Backend
- Active Server Pages for Server side Scripting

Software Requirements

Operating System	: Windows 95/98/NT/2000/XP
Front End Tool	: ASP
Back End Tool	: Microsoft SQL Server 2000
GUI Tool	: Visual Interdev
Project Management Tool	: Microsoft Word

3.3 Description of Software and Tools used

ASP

ASP is a platform originally designed for use with Microsoft's IIS. ASP provides some programming objects and can be used with JavaScript or VBScript. JavaScript is a popular language for client-side scripting, because it is supported on both Netscape's and Microsoft's web browsers. For server-side programming VBScript is mostly used and ASP works with HTML. The Internet is rapidly growing global communication network of interconnected computers. As the Internet evolved in later stages, HTML is used to provide static web pages through WWW. ASP can create dynamic web content using such features as advanced state management, server side scripting, and server components. ASP contains two parts: programmatic code and embedded HTML. The programmatic code is written in a number of scripting languages. Scripting language is a particular syntax used to execute commands on a computer. A program composed of commands from a particular scripting language is referred to as a script. Some popular web related scripting languages include VBScript, JavaScript, PerlScript and Python.

Active Server Pages introduced the concept of using ActiveX interfaces or discrete component objects within web scripts, rather than running external executable programs as had previously been the norm in other web scripting languages (such as Perl). Thus ASP can effectively access anything on the web server, or a connected network, which provides a suitable interface. ASP involves the windows 2000, and the Internet server software that comes with windows 2000 – Internet Information Server (IIS).

Probably the most obvious development tool for working with ASP is Microsoft's own Visual Studio package; or just Visual InterDev on its own. Visual InterDev, especially in the latest version, provides a whole range of editing, debugging and code building tools. As well as Visual InterDev, Visual Studio contains Visual Basic and Visual C++, both of which are ideal for building our own Active Server Components for the use in our web applications.

Features

- ASP is now much faster at processing ASP pages that don't contain any script.
- Allows page transfers to be made on the server without requiring a new client request.
- Configurable error handling is now available, by providing a single custom ASP page that is automatically called (with the Server Transfer method).

- ASP script and client – side script can be encoded using BASE64 encryption.
- Server scriptlets are used for easy implementation of web application's business logic script procedures as reusable components, as well as using them in other COM complaint programs.

- Many of the Active Server components that come with ASP includes new Browser capabilities component, XML Parser.
- ASP senses when external resources block requests that are executing, and automatically provides more thread to simultaneously execute additional request and to continue normal processing.
- ASP has offered optional output buffering for sometime.

ASP objects

An object is something that typically has methods, properties, or collections. An object's methods determine the things we can do with the object. An object's properties can be read or set to specify the state of the object. An object's collections constitute different sets of key and value pairs related to the object. The various objects are

- Application object
- Object Context object
- Request object
- Response object
- Server object
- Session object
- ASP Error object

Application object:

The Application object is used to share information among all users of a given application. An ASP-based application is defined as all the .asp files in a virtual directory and its subdirectories. Because more than once can share the Application object, there are Lock and Unlock methods to ensure that multiple users do not try to alter a property simultaneously.

Object Context object:

The Object Context object is used to commit or abort a transaction, managed by Component Services that has been initiated by a script contained in an ASP page.

Request object:

When a browser asks for a page from a server, it is called a request. The ASP Request object is used to get information from the user.

Response object:

Response object is used to send output to the client.

Server object:

The server object provides access to methods and properties on the server. Most of these methods and properties serve as utility functions.

Session object:

We can use the Session object to store information needed for a particular user-session. Variables stored in the Session object are not discarded when the user jumps between pages in the application; instead, these variables persist for the entire user-session.

The Web server automatically creates a Session object when a user who does not already have a session requests a Web page from the application. The server destroys the Session object when the session expires or is abandoned.

ASP Error object:

We can use the ASP Error object to obtain information about an error condition that has occurred in script in an ASP page. The ASP Error object is returned by the Server.GetLastError method. The ASP Error object exposes read-only properties.

Communicating with a Database Using ActiveX Data Objects (ADO)

ActiveX Data Objects (ADO) comes with ASP and allows pages to be easily connected to database. ADO works with any OLEDB source, which includes ODBC-complaint sources. So it will work with most databases currently being used. The ADO model contains six objects.

The Connection object connects to the data source. Obtaining a connection is the first step to working with databases. The Recordset object allows working with the data in a table. The Recordset object contains a set of rows from a table. It can be used to read through the rows of a table, modify the rows of a table, or collect new data to be added to the table.

The Error object represents an error generated by the data sources. The errors collection is used when a single failed method call is allowed to generate multiple errors. The Field object represents a single column in a table. The command object provides another way to create a Recordset object. It combines the Recordset object and the Connection object. The Parameters collection contains any parameters needed by the command. The parameters are stored in a parameter object.

SQL SERVER

SQL Server 2000 is a sophisticated, feature-rich relational database engine. MS SQL Server is a client/server relational database management system (RDBMS) designed for high-performance, high volume, mission critical databases in a number of application areas including Online Transaction Processing(OLTP), data warehousing, e-commerce applications.

The query analyzer is one of the graphical tools provided by MS SQL Server 2000. The query analyzer can be used to automate functionality by using scripts, triggers, functions and stored procedures. Although it is possible to create and execute queries using the SQL statements in Enterprise Manager, its greatest strength is only as a database administration tool. The query analyzer on the other hand is a programming tool. The query analyzer provides us with powerful tools for writing and debugging complex sets of transact SQL statements in various forms. It also provides a means to analyze the performance of queries via execution plans.

Security within SQL Server 2000 is managed via several security objects. Even though an individual has been granted access to a SQL Server instance by being assigned a login, the individual will not necessarily have access to a specific database unless he or she has been made a user of that database.

User-defined functions are new to SQL Server 2000. They are more powerful than stored procedures and can be used in places stored procedures cannot, such as table definitions and the FORM clause of a SELECT statement.

SQL Server supports two different login security modes for ensuring that only authorized individuals have access to sensitive data – windows authentication and SQL Server authentication.

Internet Integration

SQL Server is an ideal database engine for powering Websites. With Internet Information Server, SQL Server can add database capabilities to web sites. Through tight integration with Internet Information Server, SQL Server can be queried and updated via popular web browsers. SQL Server's native ODBC lets it interoperate smoothly with the Internet Information Server. SQL Server Web Assistant let's one automatically update HTML pages on the fly, either data triggered or scheduled using SQL Server's built-in scheduling system.

Transaction Processing

Consistency and recoverability of a database are guaranteed in case of system failure, even in the middle of complex updates by more than one user. SQL Server treats all database changes inside a transaction as a single unit of work. By definition, either an entire transaction is completed safely and all the resulting changes are reflected in the database, or the transaction is rolled back and all changes to the database are undone. Using a two phase commit protocol, SQL Server can even supports synchronized transactions, which span more than one server, helping to guarantee that all the servers on the network will be maintained in a consistent state.

Implicit Concurrency Control

Another benefit of SQL Server's transaction processing design is implicit concurrency control. SQL Server employs Dynamic Locking, a locking architecture that keeps concurrent users from interfering with each other during queries and updates. Page-level locking is the default, with optional insert row-level locking. All SQL Server locking is implicit-the programmer does not have to worry about locking commands. The process of obtaining a lock is

exceptionally fast since lock information is stored in a memory resident table. Multiple levels of locking are supported, and SQL Server always picks the least restrictive lock needed to support the operation.

SQL Server's built-in intelligence is capable of supporting both ad hoc and programmed updates to the database using any available software with complete safety-a crucial requirement if a server is to be an open platform for popular client applications.

High Availability (Dynamic backup and automatic recovery)

SQL Server avoids costly downtime for routine maintenance tasks. Nothing is more detrimental to productivity than network resources that become periodically unavailable. SQL Server's Dynamic backup allows one to backup database even while user are actively reading and writing to them – a fundamental requirement for mission-Critical applications. In case of system failure(Operating system Crashes, Power Outages, etc), SQL Server's automatic recovery mechanism recovers all databases to the last state of consistency in a matter of minutes, with no administrator intervention. The applications can be up and running again right away. SQL Server's high availability design even allows one to perform database design or diagnostics while the system is on-line.

Client-Server Architecture

It makes it possible for multiple front-ends to share information, enabling one to choose the most appropriate tool for the job. SQL Server makes efficient use of networks. Because database queries are processed at a centralized server, network traffic is reduced.

Rich, Windows-Based system administration

SQL Enterprise Manager provides graphical management of database objects such as tables, views, stored procedures and triggers. Visual Basic-based scripting can extend these capabilities to automate remote operations across multiple servers.

Network Independence

Unlike database severs, which run only on proprietary operating systems or support only proprietary network protocols, SQL Server is network independent. Because SQL Server relies on open industry standards, it can run most popular networks.

Scrollable Cursor Support

SQL Server's cursors support simplifies development of rich data browsing applications with capabilities such as forward/backward scrolling, positioned updates and deletes and flexible concurrency control options.

Single Process, Multithread Architecture

Microsoft SQL Server provides consistently high performance in c Client/Server DBMS. It is optimized for Windows NT, and uses a very efficient design that incorporates multiple native threads within a single process to handle user requests – allowing queries to be processed in parallel with very little overhead and no runtime memory allocation. This architecture is also memory efficient. The major advantage is the throughput. SQL Server does not slow down as multiple users are added to the network.

Client Advantage

- Easy to use
- Supports multiple hardware platform
- Supports multiple software applications
- Familiar to the user

Server Advantage

- Reliable
- Sophisticated Locking
- Fault tolerant
- High-performance hardware
- Centralized control

System design and development

4. SYSTEM DESIGN AND DEVELOPMENT

4.1 Input Design

Input design is the part of the overall system design which requires very careful attention. Most expensive part in this is the collection of input data in terms of equipments and persons involved. If a data going into a system is incorrect then processing and output will magnify these errors.

Several stages during input design that are to be carried out are,

- Data recording
- Data verification
- Data correction

The users are provided with screens to login, enter details of requests, and view the status of the requests and post comments on the services offered to them. The screens will be designed in HTML using scripting languages such as JavaScript, VBScript etc. the client will be a thin – client with only the web browser at their end all the processing will be server side using ASP.

The employee types in his user id and password and can perform operations on according, deposit and loans. When a person comes in for enquiry, the details regarding him are entered by the employee.

In addition, the customers can type in their user id and password and obtain the services provided to him like viewing periodic transactions, paying of mobile bill, change in contact details, and transfer from one account to another, giving suggestions and complaints. They can logout from any page, as per their requirement.

Screens

The system provides numerous highly controlled user interfaces some of the user interfaces are

General Screens

Bank form : Gives the details regarding the bank.

Banking form : Banking operations are described briefly.

Accounting form: this form describes the current and savings account.

Deposit form : This form describes fixed and recurring deposit.

Loan form : The enquirer can know about the various loans he can avail.

Business loan form: The details regarding business loan is given.

Education loan form: The details regarding education loan is given.

Agriculture loan form: The details regarding agriculture loan is given.

Consumer product loan form: The details regarding consumer product loan is given.

Vehicle loan form: The details regarding vehicle loan is given.

Housing loan form: The details regarding housing loan is given.

Suggestions: Anybody can give in their suggestions through this form.

Flash news: current news is displayed in this form.

Employee Screens

Login form: The employee logins through this form.

New customer form: The employee enters the enquirer's details in this form.

Account opening form: The employee uses this form to open an account for the customer.

Account transaction form: To perform the accounting operations the employee uses this form.

Fixed deposit form: The input for fixed deposit is given via this form.

Recurring deposit form: The input for recurring deposit form is given via this form.

Loan form: The employee uses this form to sanction loan to the customer.

Vehicle loan form: Vehicle Loan details are entered in this form.

Housing loan form: Housing loan details are entered in this form.

Education loan form: Education loan details are entered in this form.

Business loan form: Business loan details are entered in this form.

Agriculture loan form: Agriculture loan details are entered in this form.

Staff details form: The details regarding the employees of the bank are entered using this form.

Bank details form: Bank details are entered using this form.

Corporate details form: The corporate details are stored via this form

Password creation form: Password for the employee is created and changed, using this form.

Customer screens

Login form: The customer login through this form.

Transfer form: To transfer one account to another, this form used.

Complaint form: To post in the complaints, this form used

Suggestion form: The customers can give suggestions, through this form.

Bill pay form: The mobile bill pay information is entered via this form.

Password creation form: Password for the employee is created and changed, using this form.

4.2 Output Design

System analyst has two specific objectives at this stage:

- To interpret the results of the computer part of the system to users in a form which they can understand and which meets their requirements.
- To communicate the output design specification to programmers in a way that is ambiguous, comprehensive and capable of being translated in to programming language.

Output from the system can be taken as reports to know the various details on customers and to learn about the status of bank. It includes

- The list of enquiries, customers.
- Periodic view of the suggestions and complaints.
- The list of accounts holders, in the bank based on amount, maturity date, and start date.
- The depositors of the bank can be viewed, based on amount, maturity date, and start date.
- The customers who has availed loan from the bank by the type of loan can be existed.
- Corporate details are listed.
- Bank details are listed.
- Periodic transactions can be enlisted.

4.3 Database design

ENQUIRY TABLE

FIELD NAME	TYPE	DESCRIPTION
IDATE	DATETIME	Date of inquiry
APP_NO	VARCHAR(7)	Primary key, Applicant no
APP_NAME	VARCHAR(30)	Applicant name
DOB	DATETIME	Date of birth of applicant
MADDRESS	VARCHAR(40)	Mailing address
PADDRESS	VARCHAR(40)	Permanent address
EMAIL	VARCHAR(25)	Email ID
TEL_NO	INTEGER	Telephone number
MOBILE_NO	INTEGER	Mobile number
MSP	VARCHAR(10)	Mobile service provider
OCCUPATION	VARCHAR(15)	Occupation of the applicant
CORP_NO	VARCHAR(7)	Corporate id
J_APP	VARCHAR(30)	Joint applicant name
JDOB	DATETIME	Date of birth of japplicant
TAX	VARCHAR(1)	Tax assessee or not
INQUIRY	VARCHAR(10)	Inquiry type
STATUS	VARCHAR(1)	On becoming customer

ACCOUNT OPENING

FIELD NAME	TYPE	DESCRIPTION
ODATE	DATETIME	Date of opening the account
APP_NO	VARCHAR(7)	Foreign key, Applicant no
CUST_ID	VARCHAR(30)	Customer id
ACC_TYPE	VARCHAR(10)	Account type
ACC_NO	VARCHAR(7)	Primary key, Account no
BALANCE	MONEY	Balance in the account
NOMINEE	VARCHAR(30)	Name of the first reference
NOMINEEDET	VARCHAR(30)	Detail of the first reference
REFERENCE	VARCHAR(30)	Name of the second reference
REFERENCEDET	VARCHAR(30)	Detail of the second reference
PHOTO	VARCHAR(1)	Photos submitted or not

CUSTOMER TABLE

FIELD NAME	TYPE	DESCRIPTION
CDATE	DATETIME	Date of inquiry
CUST ID	VARCHAR(7)	Primary key, Customer id
APP NO	VARCHAR(7)	Foreign key, Applicant no
APP NAME	VARCHAR(30)	Applicant name
DOB	DATETIME	Date of birth of applicant
MADDRESS	VARCHAR(40)	Mailing address
PADDRESS	VARCHAR(40)	Permanent address
EMAIL	VARCHAR(25)	Email ID
TEL NO	INTEGER	Telephone number
MOBILE NO	INTEGER	Mobile number
MSP	VARCHAR(10)	Mobile service provider
OCCUPATION	VARCHAR(15)	Occupation of the applicant
CORP NO	VARCHAR(7)	Corporate id for its employees
J APP	VARCHAR(30)	Joint applicant name
JDOB	DATETIME	Date of birth of japplicant
REFERENCE	VARCHAR(30)	Name of the first reference
REFERENCEDET	VARCHAR(40)	Detail of the first reference
NOMINEE	VARCHAR(30)	Name of the second reference
NOMINEEDET	VARCHAR(40)	Detail of the second reference
TAX	VARCHAR(1)	Tax assessee or not
INQUIRY	VARCHAR(10)	Inquiry type
STATUS	VARCHAR(1)	On becoming customer

ACCOUNT TRANSACTION

FIELD NAME	TYPE	DESCRIPTION
ADATE	DATETIME	Date of the transaction
ACC NO	VARCHAR(7)	Foreign key, Account number
WITH_DEP	VARCHAR(7)	Withdrawal or deposit
AMOUNT	MONEY	Amount in the operation
MOP_ID	VARCHAR(7)	Foreign key, mode of pay id

FIXED DEPOSIT

FIELD NAME	TYPE	DESCRIPTION
FDATE	DATETIME	Date of the deposit
APP NO	VARCHAR(7)	Foreign key, Applicant no
CUST ID	VARCHAR(7)	Foreign key, Customer id
ACC NO	VARCHAR(7)	Foreign key, Account no
AMOUNT	MONEY	Amount deposited
FDTYPE ID	VARCHAR(7)	Foreign key, fixed deposit type id
MOP ID	VARCHAR(7)	Foreign key, mode of pay id

RECURRING DEPOSIT

FIELD NAME	TYPE	DESCRIPTION
RDATE	DATETIME	Date of the deposit
APP_NO	VARCHAR(7)	Foreign key, Applicant number
CUST_ID	VARCHAR(7)	Foreign key, Customer id
ACC_NO	VARCHAR(7)	Foreign key, Account no
RDTYPE_ID	VARCHAR(7)	Foreign key, recurring deposit id
AMOUNT	MONEY	Amount deposited
LPDATE	DATETIME	Last pay date
MOP_ID	VARCHAR(7)	Foreign key, mode of pay id

INTEREST TABLE

FIELD NAME	TYPE	DESCRIPTION
RATE_CODE	VARCHAR(7)	Primary key, Rate of interest code
YEAR	DATETIME	Year according to which the interest is calculated
PERCENT	DECIMAL(5,2)	Percentage of interest

MODE OF PAY TABLE

FIELD NAME	TYPE	DESCRIPTION
DDCHE NO	VARCHAR(12)	Primary key, DD or cheque number
BANK	VARCHAR(20)	Name of the bank
AMOUNT	MONEY	Amount specified
MDATE	DATETIME	Date of the DD or the cheque
TO_FROM	VARCHAR(20)	To or from which account

LOAN TABLE

FIELD NAME	TYPE	DESCRIPTION
LDATE	DATETIME	Date the loan is availed
APP_NO	VARCHAR(7)	Foreign key, applicant no
CUST_ID	VARCHAR(7)	Primary key, Customer number
INCOME	MONEY	Annual income
TYPE	VARCHAR(15)	Type of the loan

VEHICLE LOAN

FIELD NAME	TYPE	DESCRIPTION
VDATE	DATETIME	Date the loan is lend
CUST_ID	VARCHAR(7)	Foreign key, customer id
VLOAN_NO	VARCHAR(7)	Primary key, loan number
VNAME	VARCHAR(15)	Name of the vehicle
VVALUE	MONEY	Value of the vehicle
SA_LOAN	MONEY	Loan sanctioned
REPAY	INTEGER	Repayment period
BALANCE	MONEY	Balance amount
IAMOUNT	MONEY	Installment amount

VEHICLE REGISTRATION

FIELD NAME	TYPE	DESCRIPTION
RDATE	DATETIME	Date the details is submitted
CUST_ID	VARCHAR(7)	Foreign key, customer id
RC_NO	VARCHAR(10)	RC no of the vehicle
REG_NO	VARCHAR(10)	Primary key, Registration no
PAY_DATE	DATETIME	Date of payment
SUB_DET	VARCHAR(1)	All security details are submitted

EDUCATION LOAN

FIELD NAME	TYPE	DESCRIPTION
EDATE	DATETIME	Date the loan is lend
CUST ID	VARCHAR(7)	Foreign key, customer number
ELOAN NO	VARCHAR(7)	Primary key, loan number
COURSE	VARCHAR(20)	Name of the course
C DURA	INTEGER	Course duration
INSTITUTE	VARCHAR(20)	Institute of study
FEE	MONEY	Fee each semester
RP_METHOD	VARCHAR(20)	Repay method
SLOAN	MONEY	Loan sanctioned
SUB DET	VARCHAR(1)	Security details submitted or not

BUSINESS LOAN

FIELD TYPE	TYPE	DESCRIPTION
BDATE	DATETIME	Date the loan is lend
CUST_ID	VARCHAR(7)	Foreign key, customer id
BLOAN NO	VARCHAR(7)	Primary key, loan number
VASSET	MONEY	Value of the asset
ADOC_NO	VARCHAR(10)	Asset document no
BDOC_NO	VARCHAR(10)	Business document no
MOP_ID	VARCHAR(7)	Foreign key, cheque leaves details
SLOAN	MONEY	Loan sanctioned
RP_PERIOD	INTEGER	Repayment period
IAMOUNT	MONEY	Installment amount
BALANCE	MONEY	Balance amount
PDATE	DATETIME	Pay date
SUB_DET	VARCHAR(1)	Security details submitted or not

AGRICULTURE LOAN

FIELD NAME	TYPE	DESCRIPTION
GDATE	DATETIME	Date the loan is sanctioned
CUST_ID	VARCHAR(7)	Foreign key, customer id
ALOAN_NO	VARCHAR(7)	Primary key, loan number
FAREA	INTEGER	Field area
FVALUE	MONEY	Field value
FLOCALITY	VARCHAR(30)	Field locality
FDOC_NO	VARCHAR(10)	Field document number
SLOAN	MONEY	Loan sanctioned
RP_PERIOD	INTEGER	Repayment period
IAMOUNT	MONEY	Installment amount
BALANCE	MONEY	Balance amount
PDATE	DATETIME	Pay date
SUB_DET	VARCHAR(1)	Security details submitted or not

CONSUMER PRODUCT LOAN

FIELD NAME	TYPE	DESCRIPTION
PDATE	DATETIME	Date the loan is lend
CUST_ID	VARCHAR(7)	Foreign key, customer id
CLOAN_NO	VARCHAR(7)	Primary key, loan number
PNAME	VARCHAR(15)	Product name
PVALUE	MONEY	Product value
SLOAN	MONEY	Loan sanctioned
RP_PERIOD	INTEGER	Repayment period
IAMOUNT	NUMBER	Installment amount
BALANCE	NUMBER	Balance amount
PDATE	VARCHAR(10)	Pay date
SUB_DET	VARCHAR(1)	Security details submitted or not

HOUSING LOAN

FIELD NAME	TYPE	DESCRIPTION
HDATE	DATETIME	Date the loan is lend
CUST_ID	VARCHAR(7)	Foreign key, customer id
HLOAN_NO	VARCHAR(7)	Primary key, loan number
LVALUE	INTEGER	Land value
LADDRESS	VARCHAR(30)	Land address
LDOC_NO	VARCHAR(10)	Land document number
MOP_ID	VARCHAR(7)	Foreign key, cheque leaves details
SLOAN	MONEY	Loan sanctioned
RP_PERIOD	INTEGER	Repayment period
IAMOUNT	MONEY	Installment amount
PDATE	DATETIME	Pay date
BALANCE	MONEY	Balance amount
SUB_DET	VARCHAR(1)	Security details submitted or nor

RECURRING DEPOSIT TYPE

FIELD NAME	TYPE	DESCRIPTION
RD_ID	VARCHAR(7)	Primary key, recurring deposit id
NO_YRS	INTEGER	Number of years of deposit
AMOUNT	MONEY	Amount deposited
MON_PAY	MONEY	Monthly payment amount
RATE_CODE	VARCHAR(7)	Foreign key, rate of interest

FIXED DEPOSIT TYPE

FIELD NAME	TYPE	DESCRIPTION
FD_ID	VARCHAR(7)	Primary key, Fixed deposit id
NO_YRS	INTEGER	Number of years
AMOUNT	MONEY	Amount deposited
RATE_CODE	VARCHAR(7)	Foreign key, rate of interest code

STAFF DETAILS

FIELD NAME	TYPE	DESCRIPTION
EMP_ID	VARCHAR(7)	Primary key, Employee id
EMP_NAME	VARCHAR(30)	Name of the employee
SEX	VARCHAR(1)	Sex of the employee
DOB	DATETIME	Date of birth
ADDRESS	VARCHAR(40)	Address of the employee
DESIGNATION	VARCHAR(15)	Designation of the employee

CORPORATE TABLE

FIELD NAME	TYPE	DESCRIPTION
CORP_ID	VARCHAR(7)	Primary key, corporate id
CNAME	VARCHAR(20)	Name of the organization
ADDRESS	VARCHAR(30)	Address of the organization
PHONE	INTEGER	Phone number
FAX	INTEGER	Fax number

BANK DETAILS

FIELD NAME	TYPE	DESCRIPTION
BRANCH_CODE	VARCHAR(7)	Primary key, code of the bank branch
BADDRESS	VARCHAR(30)	Address of that branch
TELE_NO	INTEGER	Telephone number
FAX	INTEGER	Fax number
TRAN_AMT	MONEY	Total transaction amount

PASSWORD CREATION

FIELD NAME	TYPE	DESCRIPTION
CUST_ID	VARCHAR(7)	Foreign key, Customer id
USER_ID	VARCHAR(15)	Primary key, User id
PASSWD	VARCHAR(15)	Password set
HINT	VARCHAR(25)	Hint question
ANSWER	VARCHAR(10)	Answer to the hint

LOAN PAYMENT

FIELD NAME	TYPE	DESCRIPTION
LOAN_NO	VARCHAR(7)	Loan number
CUST_ID	VARCHAR(7)	Foreign key, Customer id
IAMOUNT	AMOUNT	Installment amount
PDATE	VARCHAR(10)	Pay date

COMPLAINTS TABLE

FIELD NAME	TYPE	DESCRIPTION
DATE	VARCHAR(10)	Date the complaint is made
COMP_ID	VARCHAR(7)	Primary key, Complaint id
CUST_ID	VARCHAR(7)	Foreign key, Customer id
COMPLAINT	VARCHAR(30)	Complaint made
STATUS	VARCHAR(1)	Status

SUGGESTION TABLE

STATUS	VARCHAR(1)	Status
SUGGESTION	VARCHAR(30)	Suggestion made
ADDRESS	VARCHAR(30)	Address
NAME	VARCAHR(30)	Name of the customer
SUG_ID	VARCHAR(7)	Primary key, Suggestion id
DATE	VARCHAR(10)	Date the suggestion is made

BILL PAY TABLE

FIELD NAME	TYPE	DESCRIPTION
DATE	VARCHAR(10)	Date the bill is requested to be paid
CUST_ID	VARCHAR(7)	Foreign key, Customer id
MOBILE_NO	INTEGER	Mobile number
AMOUNT	MONEY	Amount to be paid

4.4 Process Design

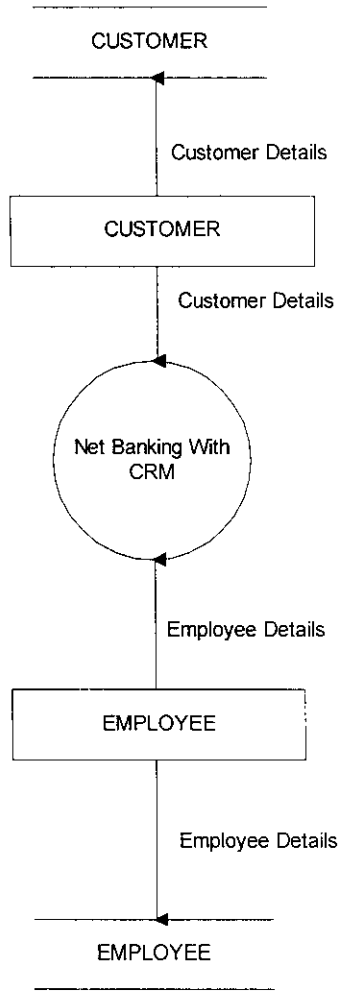
Data Flow Diagram

A Data Flow Diagram is a graphical technique that depicts information flow and transformation that are applied as data move from input to output. In this graph the nodes represent the processing activities and the arcs specify the data items to be transmitted between processing nodes. The data flow diagram may be used to represent system software at any level of abstraction.

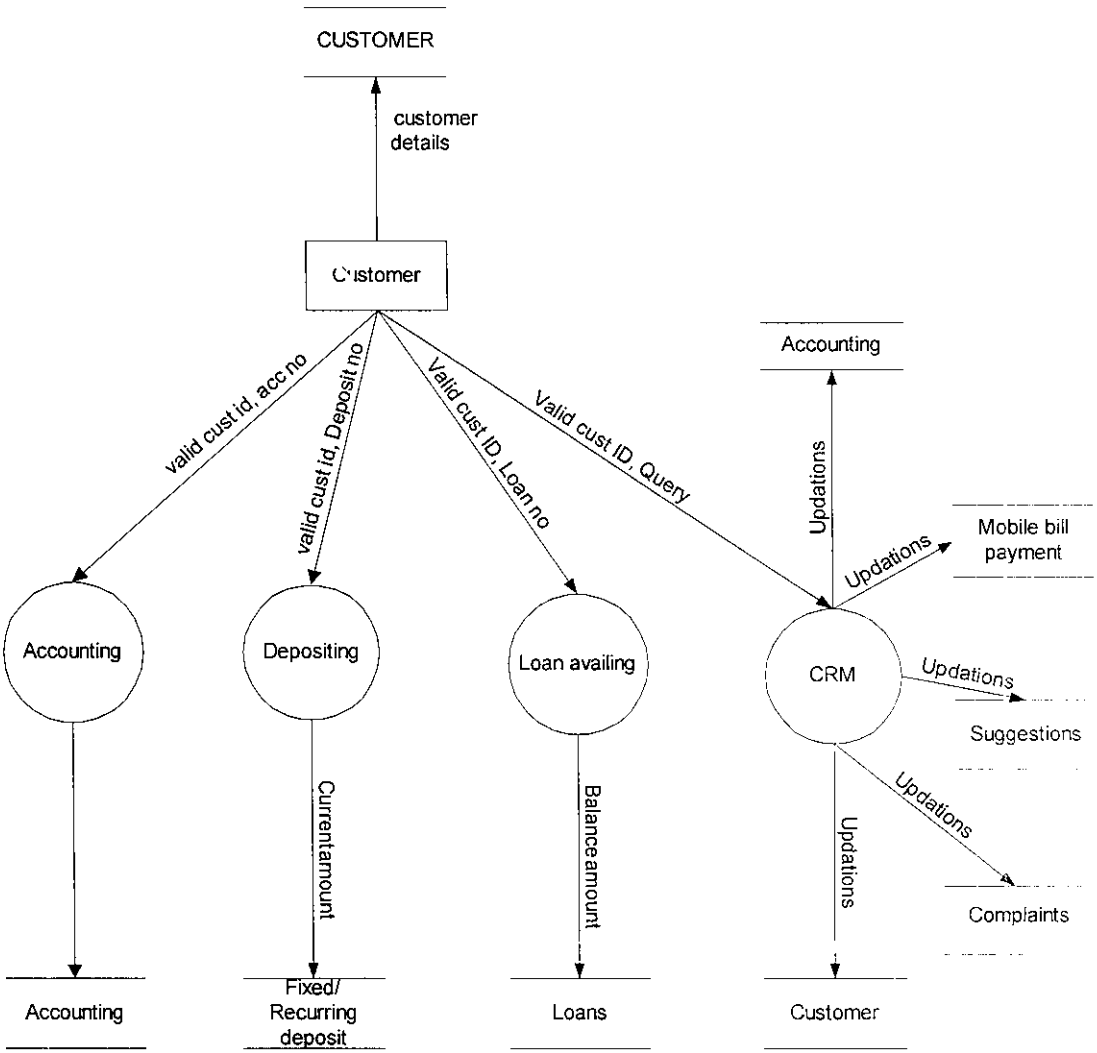
The DFD provides a mechanism for functional modeling as well as information flow modeling. The DFD might represent data flow between concurrent processes or a data flow in a distributed computing system where each node represents a geographically remote processing unit. Unlike flow charts, data flow diagrams do not indicate the decision logic or the conditions under which the various processing nodes in the diagram might be activated. DFD are an excellent means of communicating with the customers during the requirement analysis and they are also useful for representation of external and top level internal design specifications, naming conventions. Data flow oriented design is an architectural design method that allows a convenient transition from the analysis model to a design description of program structure.

The design phase is mainly concerned with the identifying software components, specifying relationships among components specifying software structures.

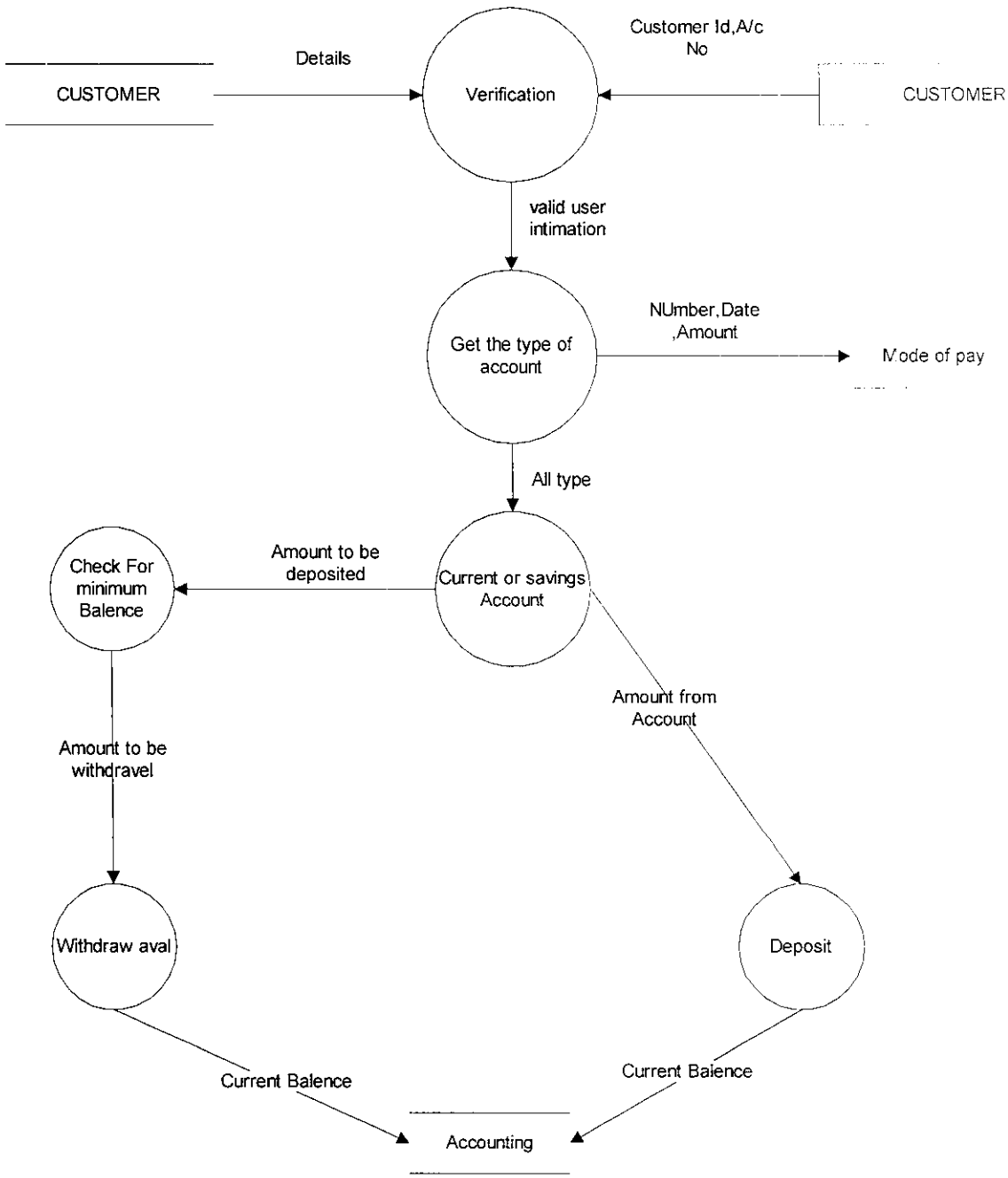
Net banking With CRM Level 1



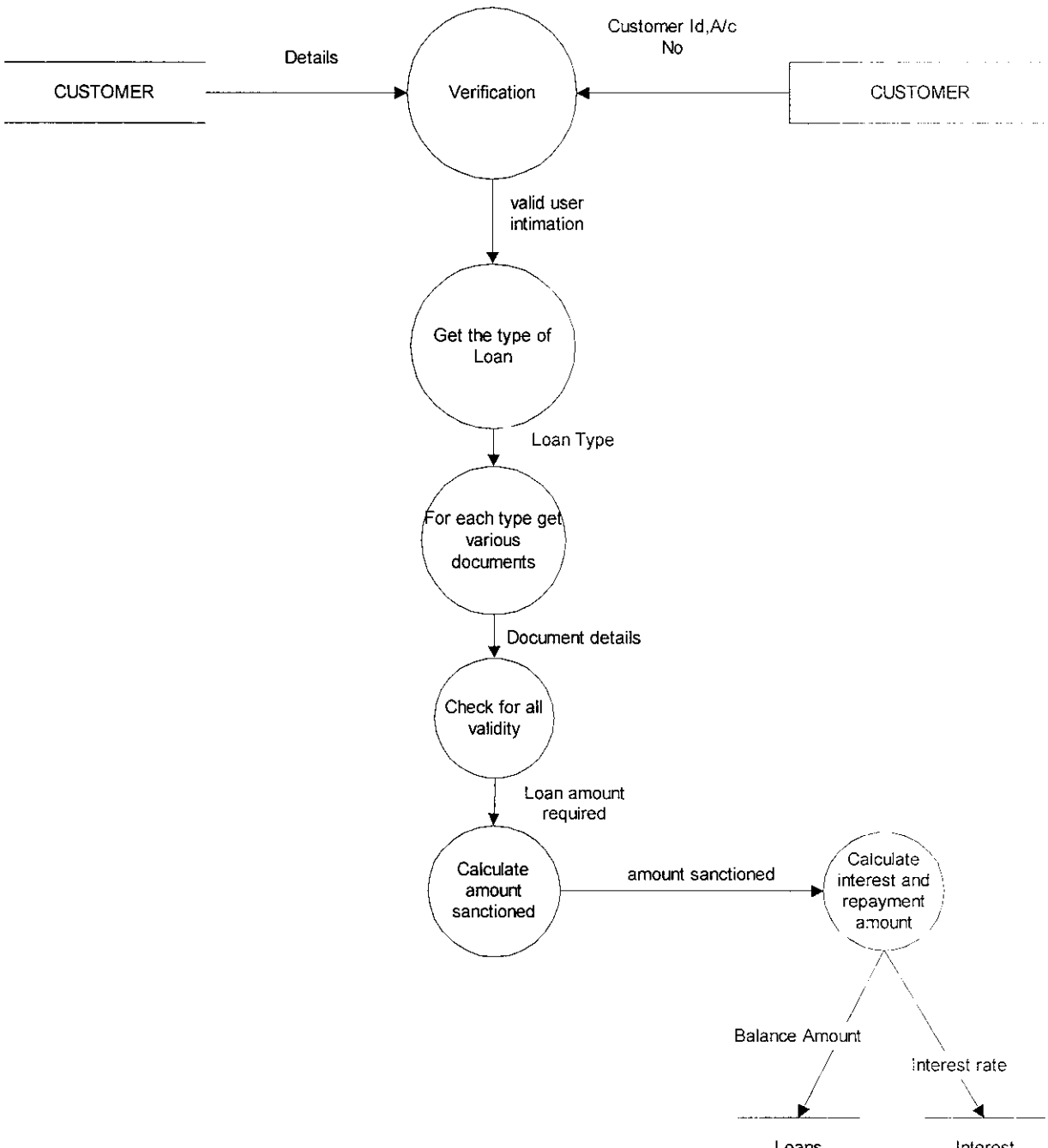
Net banking With CRM Level -1



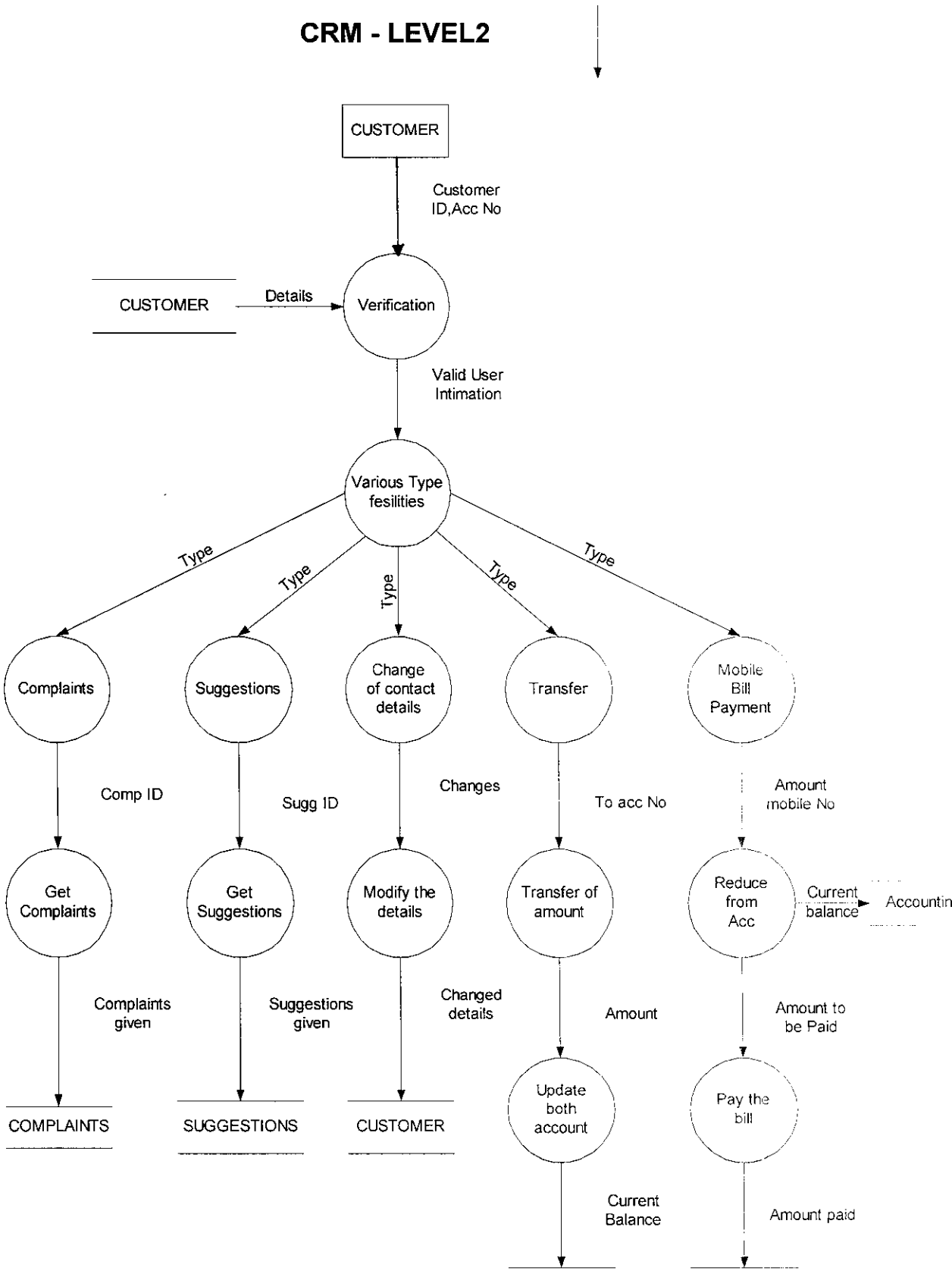
Accounting Level 2



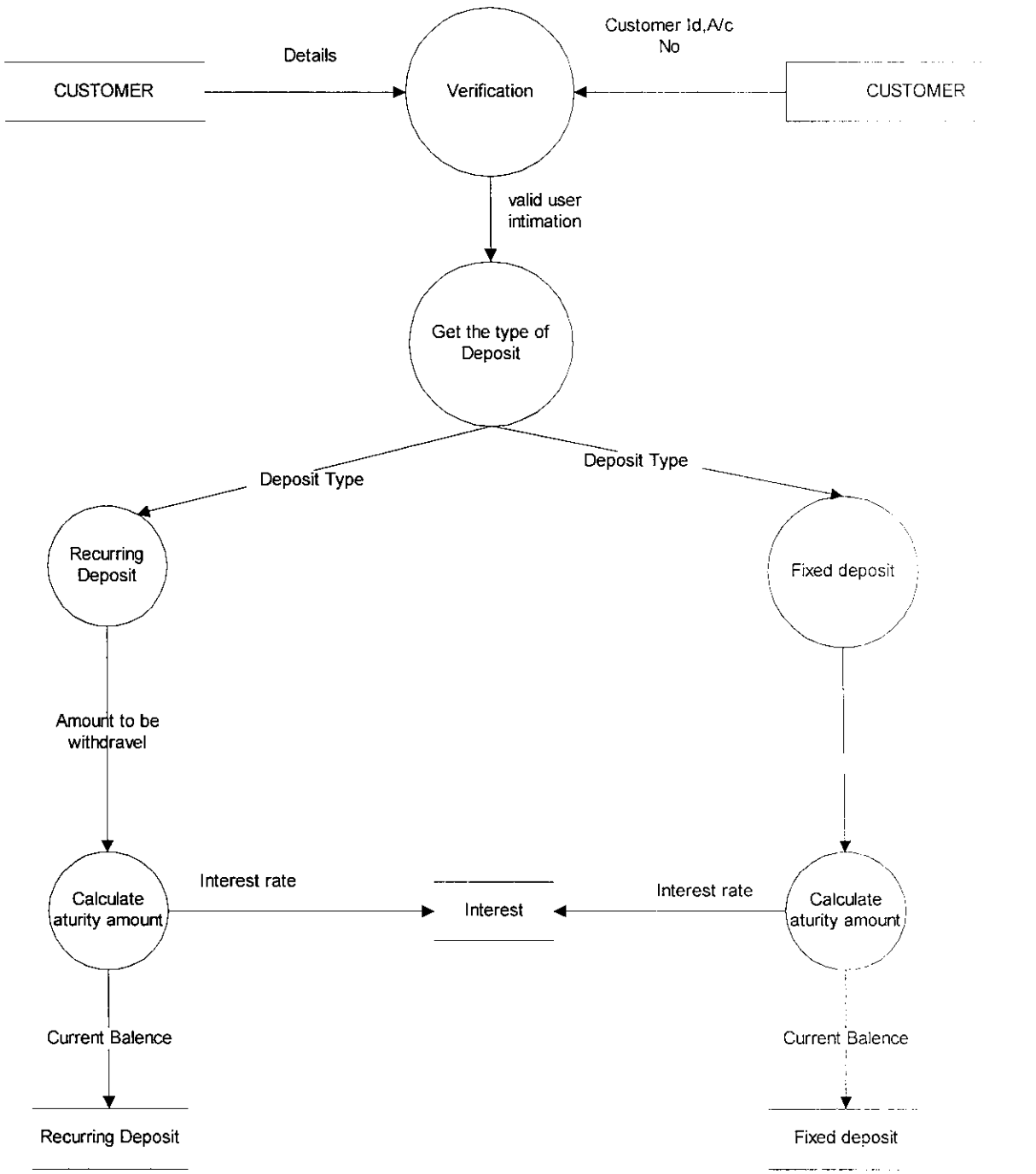
Loans Level 2



CRM - LEVEL2


CUSTOMER
Customer ID,Acc No
CUSTOMER
Details
Verification
Valid User Intimation
Various Type fesilities
Type
Type
Type
Type
Type
Complaints
Suggestions
Change of contact details
Transfer
Mobile Bill Payment
Comp ID
Sugg ID
Changes
To acc No
Amount mobile No
Get Complaints
Get Suggestions
Modify the details
Transfer of amount
Reduce from Acc
Current balance
Accountin
Complaints given
Suggestions given
Changed details
Amount
Amount to be Paid
COMPLAINTS
SUGGESTIONS
CUSTOMER
Update both account
Pay the bill
Current Balance
Amount paid

Deposit Level 2



System implementation and testing

5. SYSTEM IMPLEMENTATION AND TESTING

5.1 System Implementation

Implementation is the key stages in achieving a successful new system because it involves a lot of upheaval in the user department. It must therefore be carefully planned and controlled. Normally, this involves setting a coordinating committee, which will act as a sounding board for ideas, complaints and problems.

Apart from planning the two other major tasks of preparing for implementation and education and training of users and testing of the system. Education of the users should really have taken place much earlier in the project when they were being involved in the investigation and design work, at the Implementation stage the emphasis must be on training in new skills to the staff so they could be able to cope up with the new system. Once the staff has been trained, system can be tested. The whole system should be tested for flaws. Once the coordinating committee is satisfied with the training and the testing, changeover can begin.

5.2 System Testing

A strategy for software testing integrates software test case design methods into a well-planned series of steps that results in the successful construction of software. A software testing strategy should be flexible enough to promote the creativity and customization that are necessary to adequately test all large software based systems. It should also promote reasonable planning and progresses.

Testing is a vital to the success of the system. System testing makes a logical assumption that is all parts of the system are correct; the goal will be successfully achieved.

Objectives of Testing

- Testing is the process of executing a program with the intent of finding an error.
- A good test case is one that has a high probability of finding an as yet undiscovered error.
- A successful test is one of that uncover an as yet an undiscovered error.

The system as a whole is tested for the following

- Validation of inputs
- Sequential tests
- Consistency of application

The objective of testing is to discover errors. To fulfill these objectives a series of tests were planned and executed.

Module Testing

Each module is tested for errors. Module testing is done to check whether each module is working as per the requirements under various conditions.

Login Testing

The login process was tested with both authorization and unauthorized login. Access was denied for invalid login ids and incorrect passwords. Passwords were changed and addition and deletion of users were done. The results were as expected.

Display Testing

Display testing was conducted to ensure that all the display procedures are working properly. The display information is checked whether the information is properly displayed in various modules.

Unit Testing

Here, each individual program was tested using the test data. The outputs as per the requirements were found satisfactory. Thus it was possible to conclude that every program in the software was functionally correct. The interrelated modules were also tested in an exhaustive fashion that will make the whole software work properly.

Integration Testing

The individual programs are combined together to form modules. Integrated tests were performed on each of the modules and again the validity was checked. After that, all modules were brought under a single module and the integrity test found to be successful.

This system was validated in such a way that even the slightest deviation in inputting the data will invoke error messages and provide guide lines regarding the input. Strategies for integrating software component into a functioning product include the bottom-up, the top-down, and the sandwich strategies.

Bottom-up integration consists of unit testing, followed by subsystem testing, followed by testing of the entire system. Unit testing has the goal of discovering errors in the individual modules of the system.

The primary purpose of the subsystem testing is to verify operation of the interfaces between modules in the subsystem.

Top-down integration starts with the main routine and one or two immediately subordinate routines in the system structure. Top-down integration requires the use of program stubs to simulate the effect of lower-level routines that are called by those being tested.

Sandwich integration is predominately top-down, but bottom-up techniques are used on some modules and subsystems. This solves many of the problems encountered in pure top-down testing and retains the advantages of top-down integration at the subsystem and system level.

Acceptance Testing

Acceptance testing involves planning and execution of functional test, performance tests and stress testes in order to demonstrate that the implemented system satisfies its environment. In addition to functional and performance tests, stress tests are performed to determine the limitations of the system.

Acceptance tests will incorporate test cases developed during unit testing. Additional test cases are added to achieve the desired level of functional, performance, and stress testing of the entire system

5.3 Refinements Based on Feedback

This application is provided with two set of feedbacks. They are

- Suggestions
- Complaints

The feedbacks are received from the customers. The suggestions as well as complaints can be got from the customer. The enquirer can give the suggestion only. From the feedback we may be able to get valuable suggestions from the customers. The suggestions may be implemented in the system. Also, the complaints are organized, analyzed and interpreted. These processes help to identify the problems which are encountered by the users, giving the reasons for the problems and offering possible solutions by rectifying the problem.

Conclusion

6. CONCLUSION

The product "**Net Banking with CRM**" provides automation of the banking operations. The application developed has many features that enhance the easy operation of the system. The activities like accounting, deposit and loans are performed.

The employees find it easy to enter in all details and maintain them and perform various operations. This has removed the difficulty of maintaining manual records. The product is built as customer- oriented. The customers are also allowed to use the system in order to perform certain functions.

The customers can give feed back in form of complaints and suggestions that will definitely help the bank to improve them in all the necessary aspects. There are a lot of chances to increase the number of customers by providing quality service. Basically, banking process is complex and many find the processing to be time consuming. The system developed, eradicates all these.

The person, who does not know to operate the system, may find it difficult at the beginning to use it. They may be trained to do it initially. In addition, the interconnection between the systems of various branches must be done efficiently in order to obtain the full effectiveness of the system.

Scope for further development

7. SCOPE FOR FURTHER DEVELOPMENT

The system can be developed further .The operations can be made online. For the future customers, they may be provided with the facility of registering their details online by themselves. Also, the process of sending mails to the customers to remind them of their payment date, amount can be enhanced.

Also, the customers may be allowed to post in their complaints and suggestions anywhere, anytime .Thus the system developed can be implemented in such a way that the customer services can be provided online.

Change over

Once all the preparatory work of implementation had taken place the system has been tested and the staff trained –the change over from old to new system began. Change over is the state of moving over from old manual system to new computer-based system.

In order for the change over, the clerical file had to be converted into computer format and media and then input to the computer to form the new computer files. When the files have been set up on the computer, the changeover properly takes place. There where several possible methods to achieve this, e.g. direct changeover, parallel running and staged changeover.

The implementation coordinating committee chose the most appropriate method that is the direct changeover in our case of execution. The users are satisfied with the results and the new system is working properly under the system analyst.

Creating an Effective Change Management Plan

Planning and managing change, both cultural and technological, will be one of the most challenging elements of the project. Understanding the key areas of change management, and the associated traps and pitfalls and other areas have to be encountered, which is critical to the success. The transition to new tools and technology, including key areas to be considered when planning major technical improvements and system changes.

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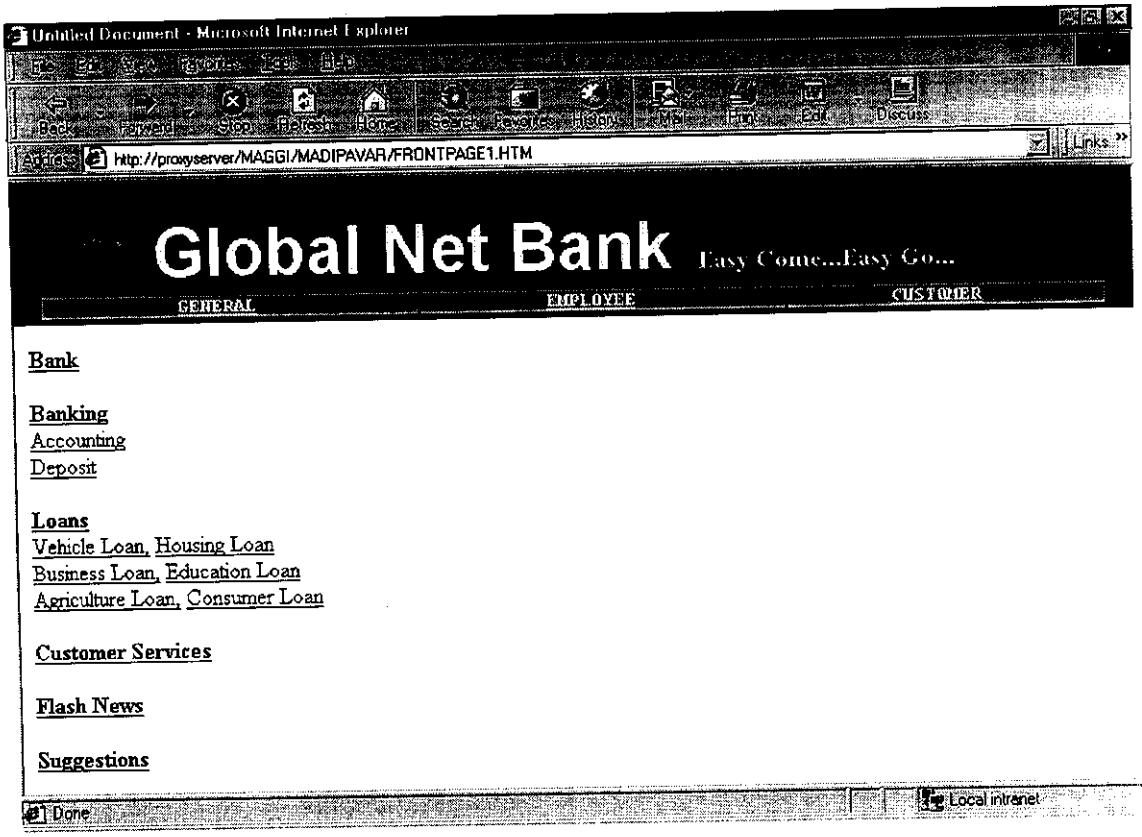
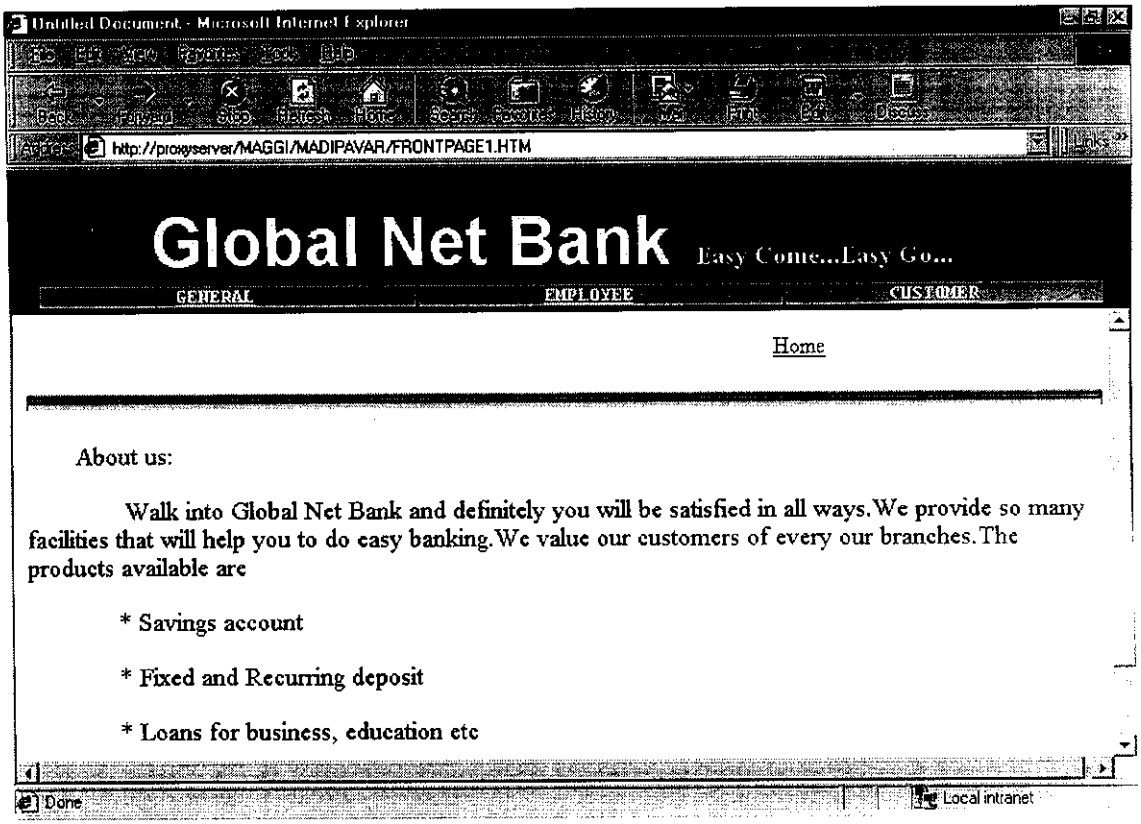
Annexure

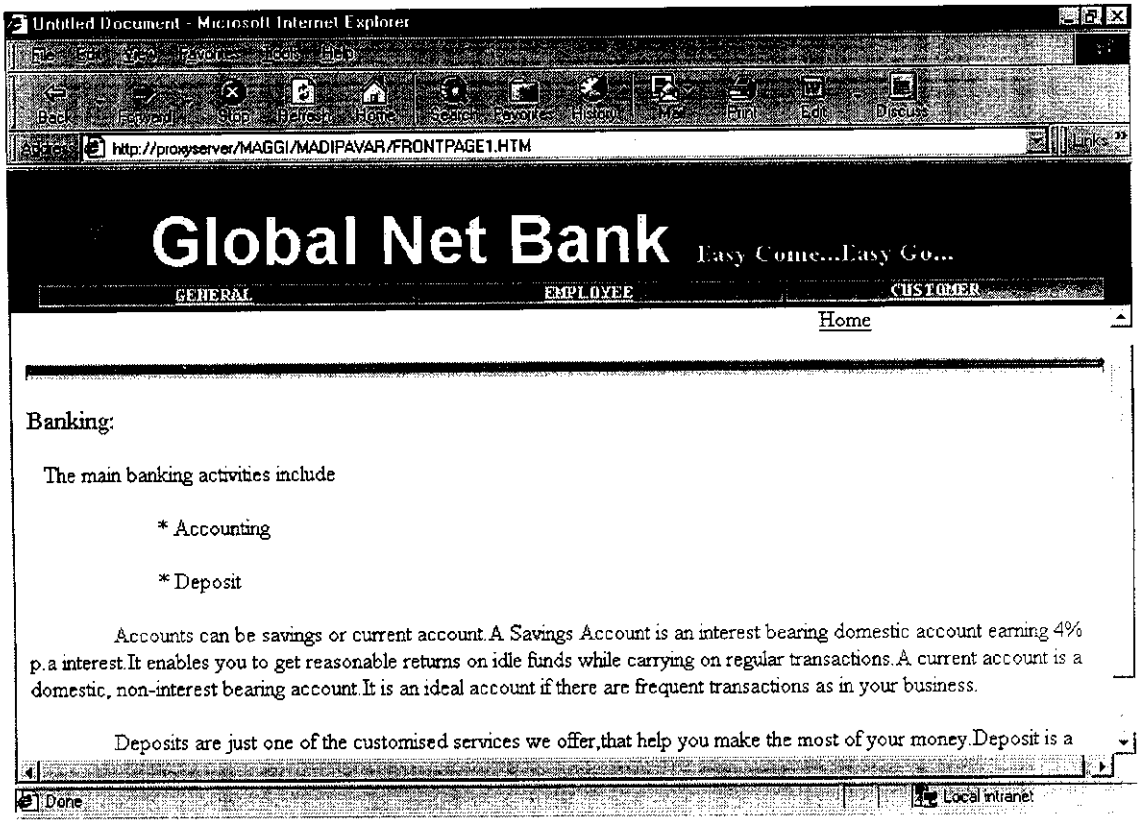
Screens:
Home page



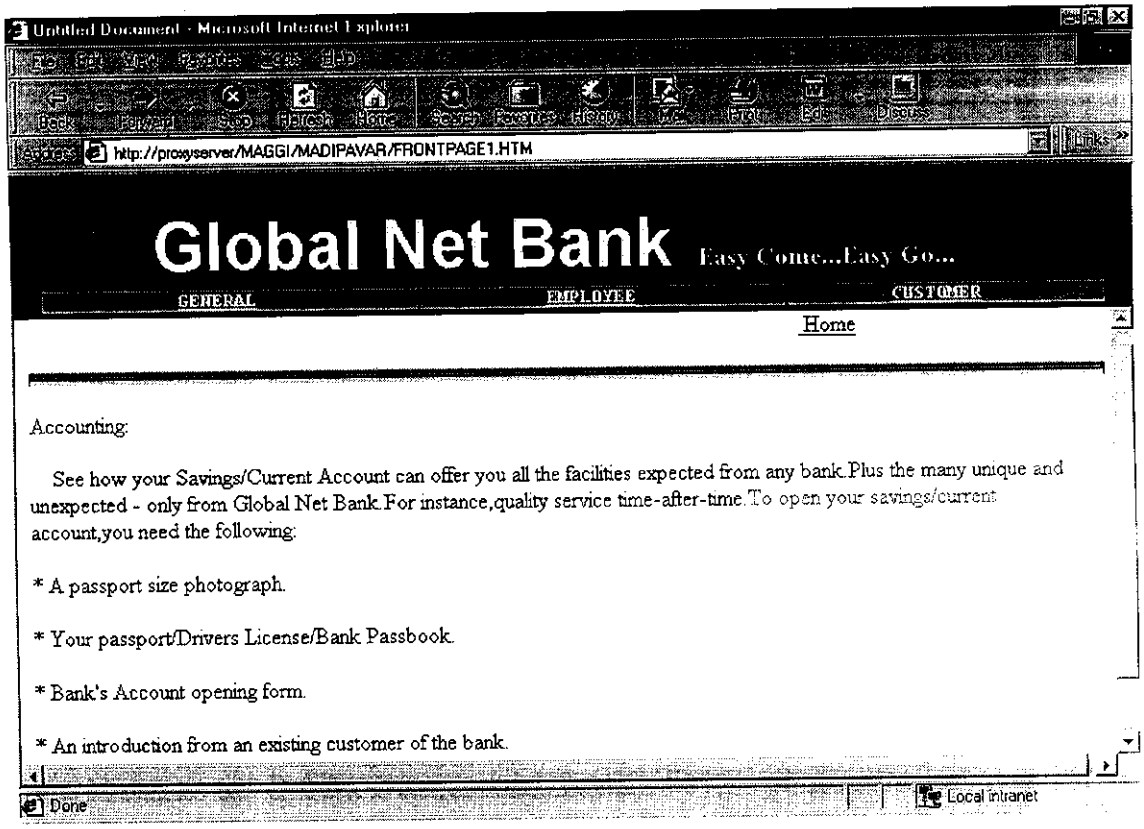
Bank details:



Banking operations:



Accounting: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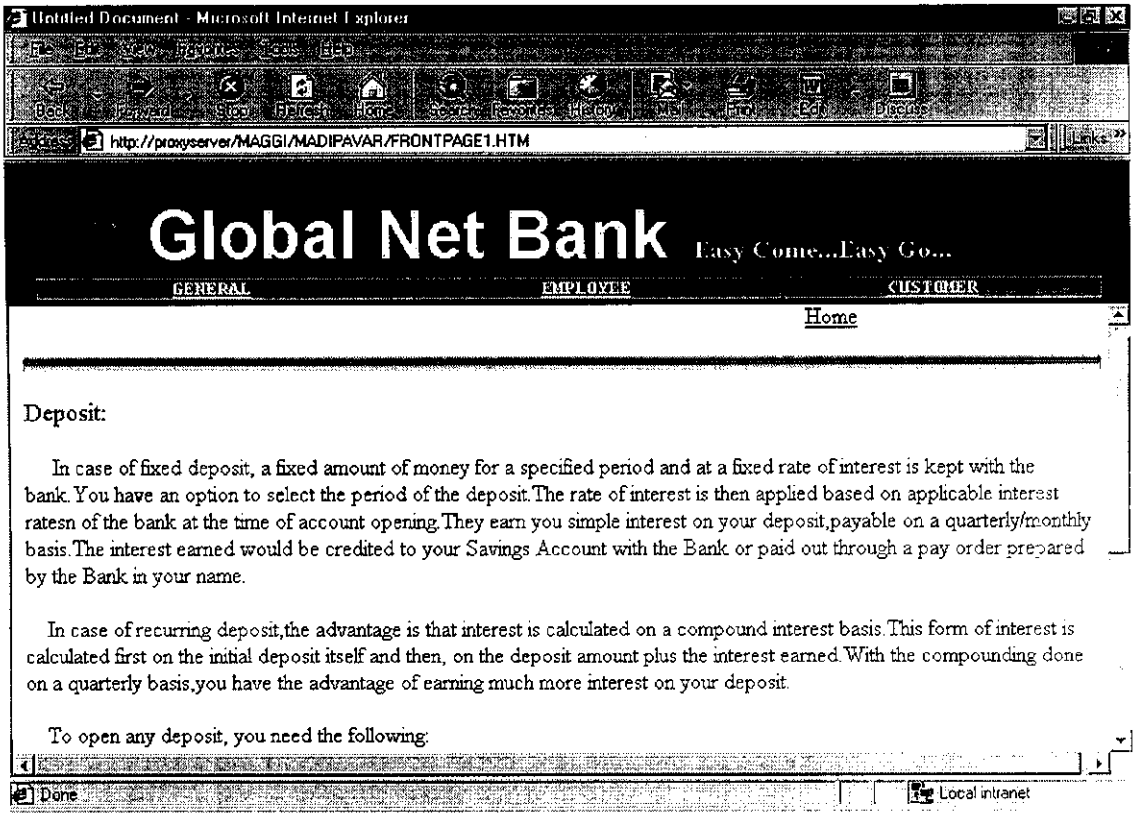
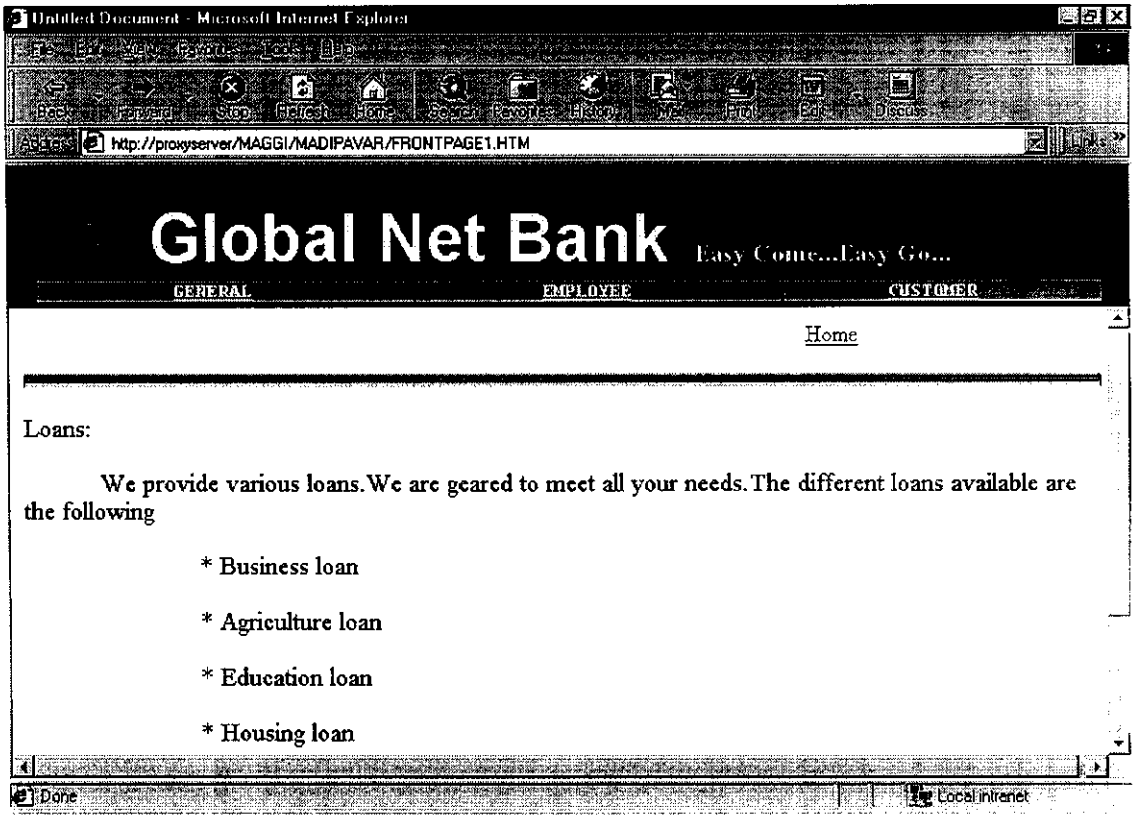
http://proxyserver/MAGGI/MADIPAVAR/FRONTPAGE1.HTM
Global Net Bank
Easy Come...Easy Go...
GENERAL
EMPLOYEE
CUSTOMER
Home
Accounting:
See how your Savings/Current Account can offer you all the facilities expected from any bank.Plus the many unique and unexpected - only from Global Net Bank.For instance,quality service time-after-time.To open your savings/current account,you need the following:
* A passport size photograph.
* Your passport/Drivers License/Bank Passbook.
* Bank's Account opening form.
* An introduction from an existing customer of the bank.
Done
Local intranet

Deposit:


Untitled Document - Microsoft Internet Explorer
http://proxyserver/MAGGI/MADIPAVAR/FRONTPAGE1.HTM
Global Net Bank
Easy Come...Easy Go...
GENERAL
EMPLOYEE
CUSTOMER
Home
Deposit:
In case of fixed deposit, a fixed amount of money for a specified period and at a fixed rate of interest is kept with the bank. You have an option to select the period of the deposit. The rate of interest is then applied based on applicable interest ratesn of the bank at the time of account opening. They earn you simple interest on your deposit, payable on a quarterly/monthly basis. The interest earned would be credited to your Savings Account with the Bank or paid out through a pay order prepared by the Bank in your name.
In case of recurring deposit, the advantage is that interest is calculated on a compound interest basis. This form of interest is calculated first on the initial deposit itself and then, on the deposit amount plus the interest earned. With the compounding done on a quarterly basis, you have the advantage of earning much more interest on your deposit.
To open any deposit, you need the following:
Done
Local intranet

Loans: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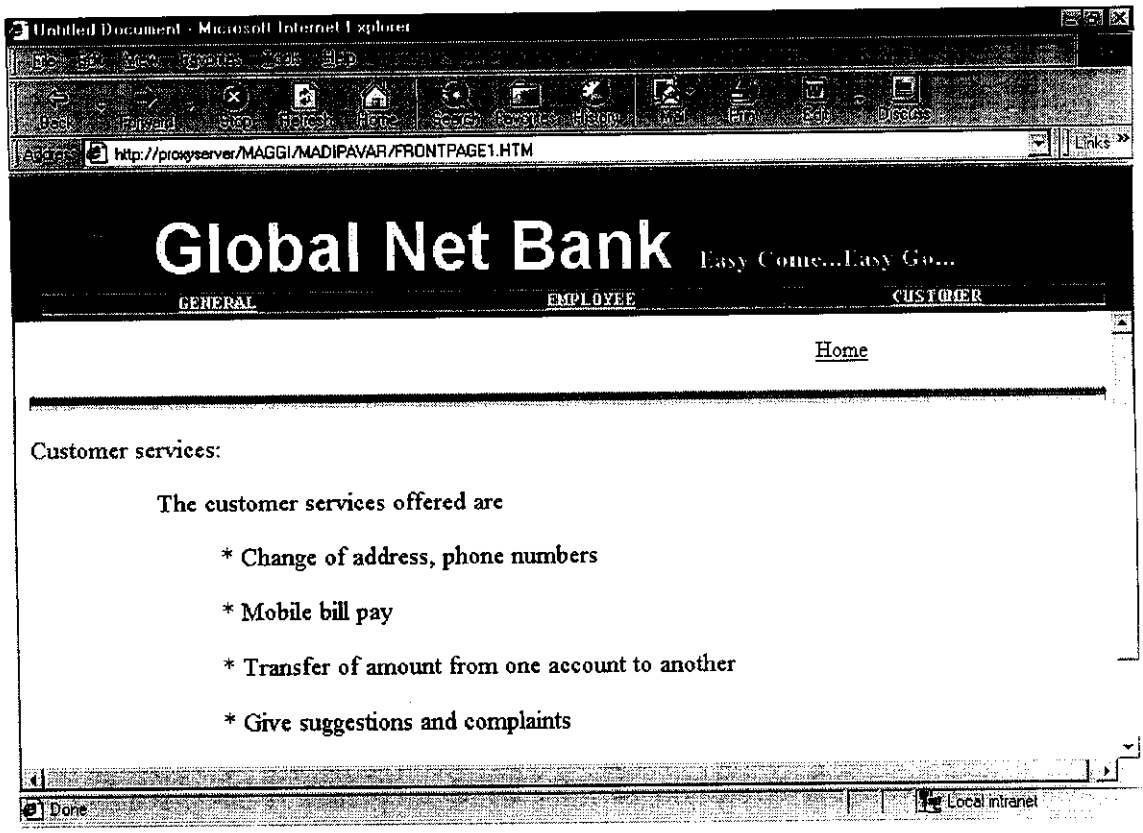
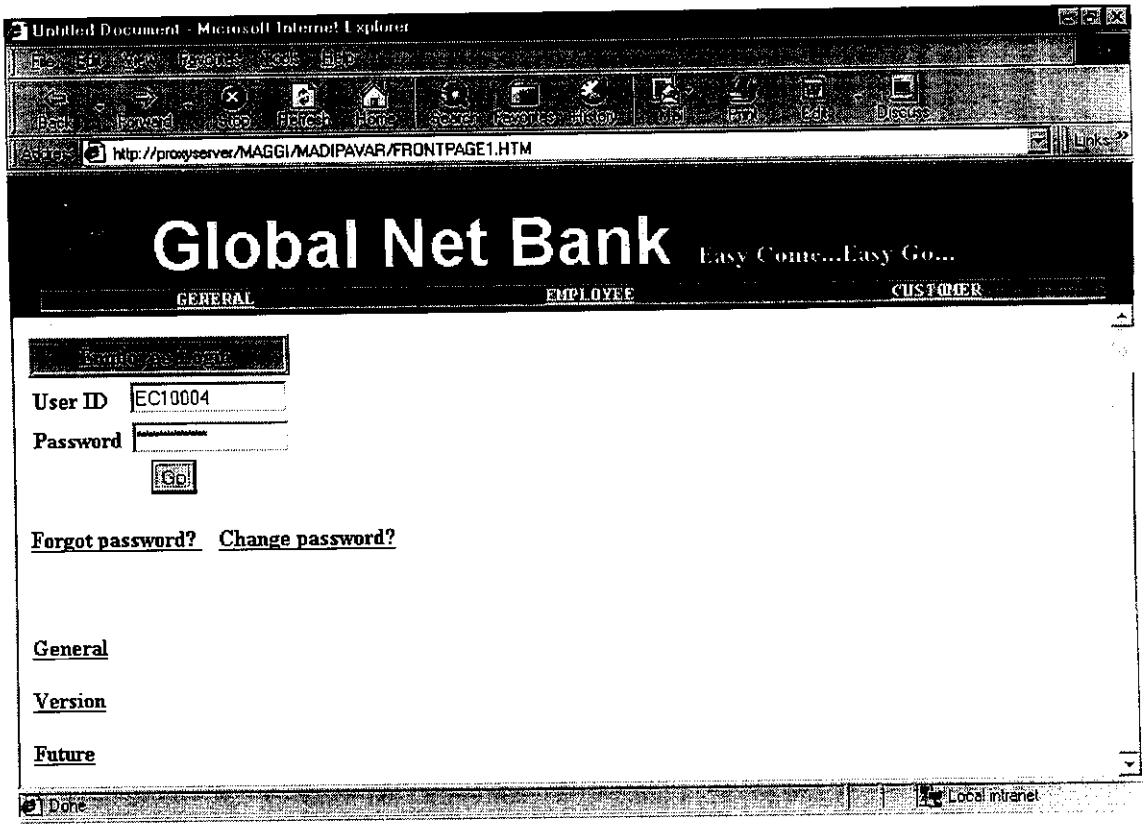
http://proxyserver/MAGGI/MADIPAVAR/FRONTPAGE1.HTM
Global Net Bank
Easy Come...Easy Go...
GENERAL
EMPLOYEE
CUSTOMER
Home
Loans:
We provide various loans.We are geared to meet all your needs.The different loans available are the following
* Business loan
* Agriculture loan
* Education loan
* Housing loan
Done
Local intranet

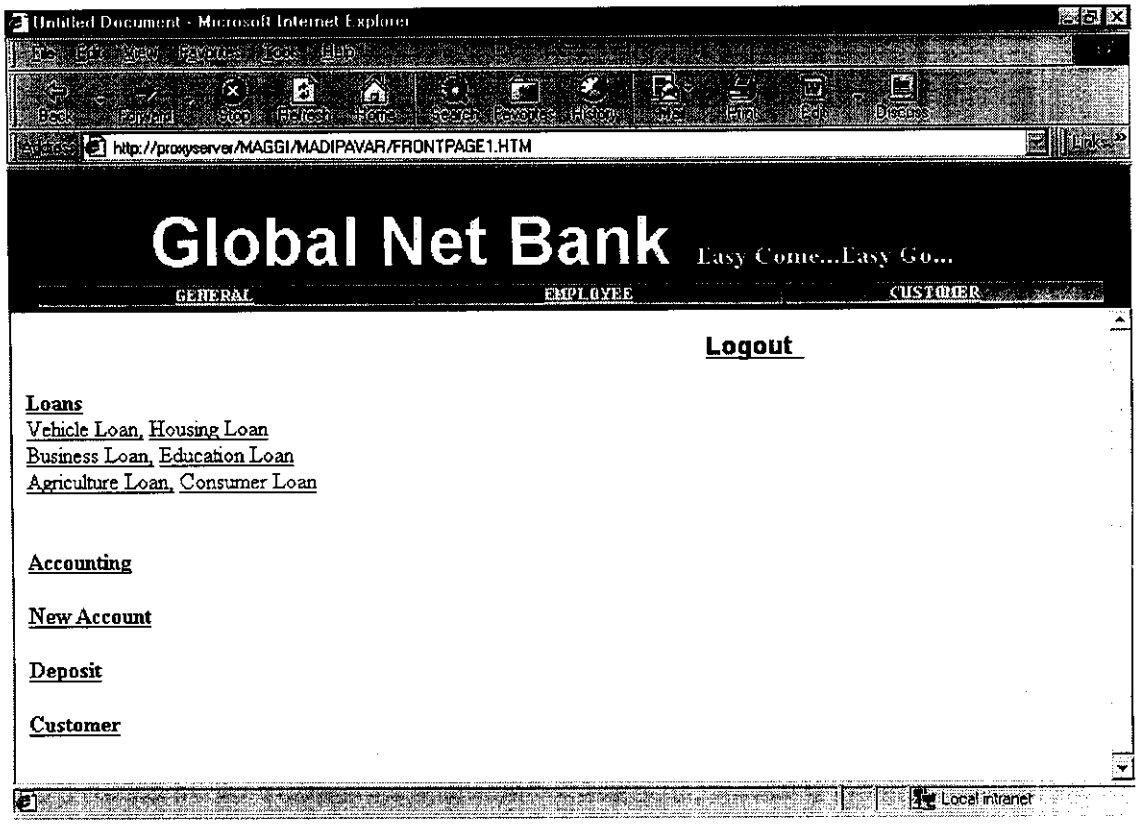
Consumer services:



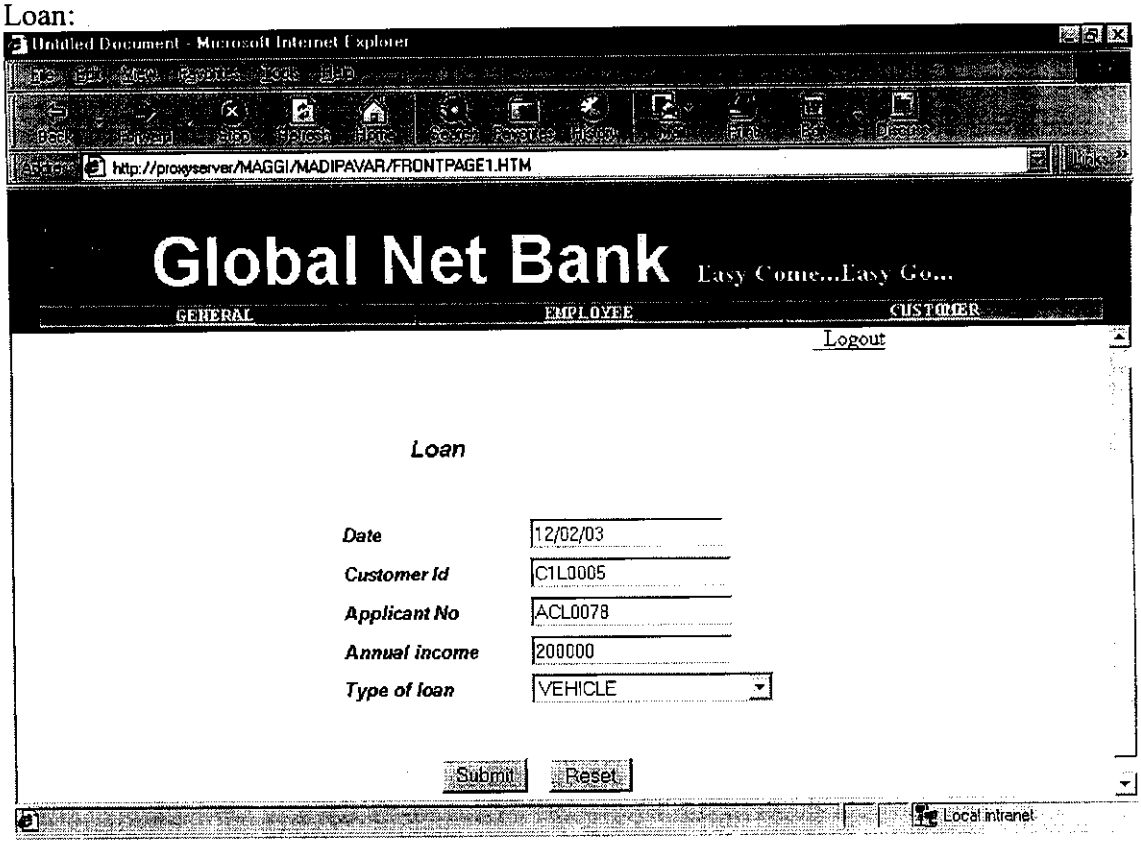
Employee homepage:



Employee operations:



Loan: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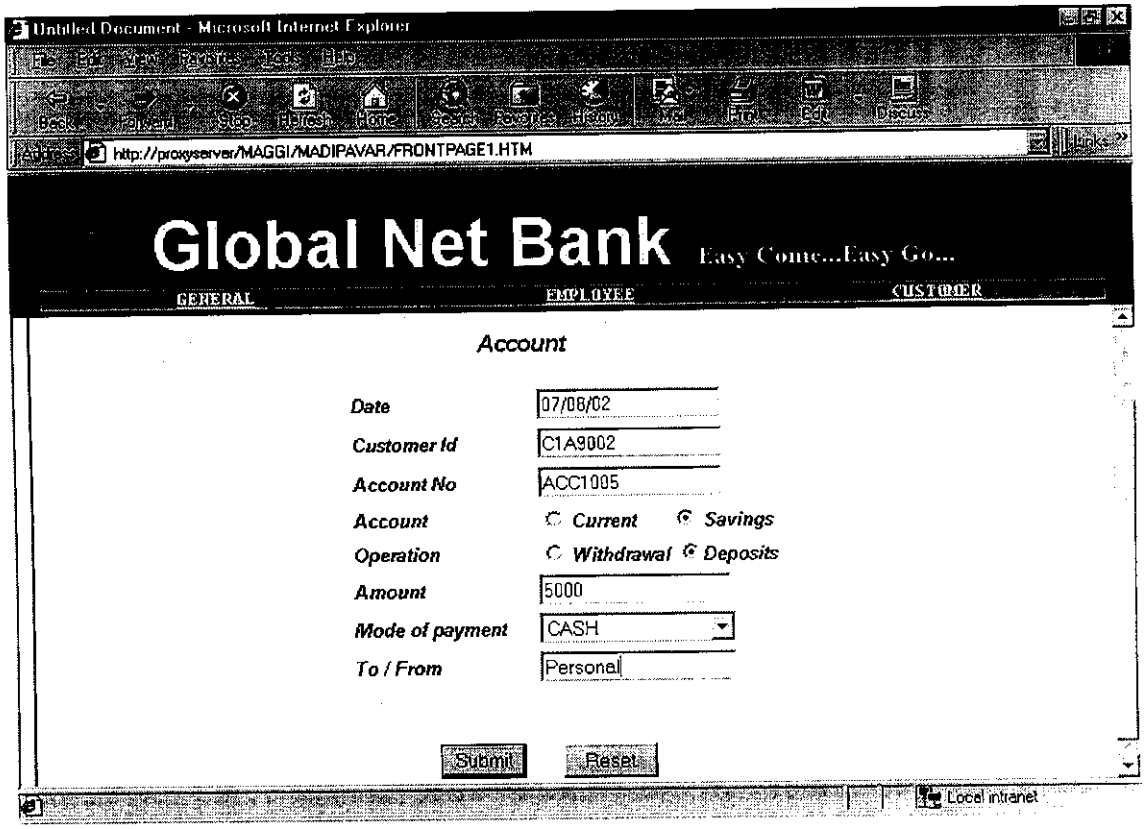
Global Net Bank
Easy Come...Easy Go...
GENERAL
EMPLOYEE
CUSTOMER
Logout
Loan
Date
12/02/03
Customer Id
C1L0005
Applicant No
ACL0078
Annual income
200000
Type of loan
VEHICLE
Submit
Reset
Local intranet

Account: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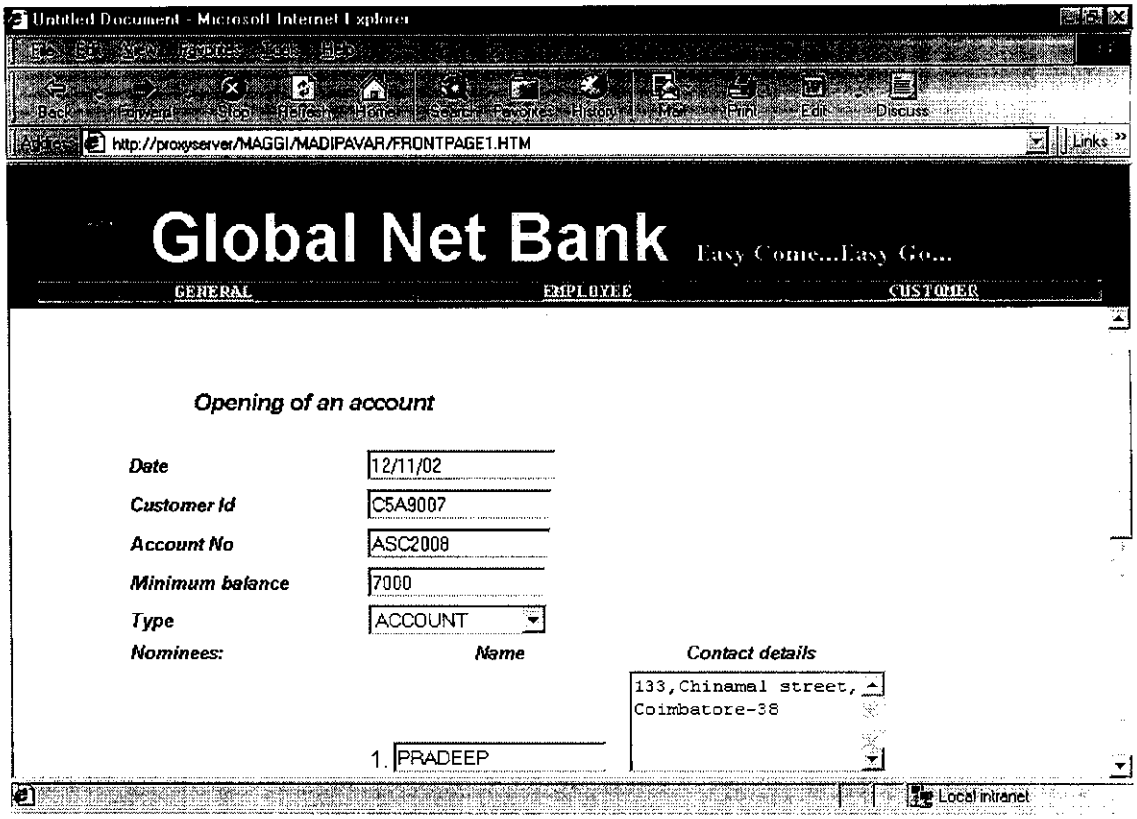
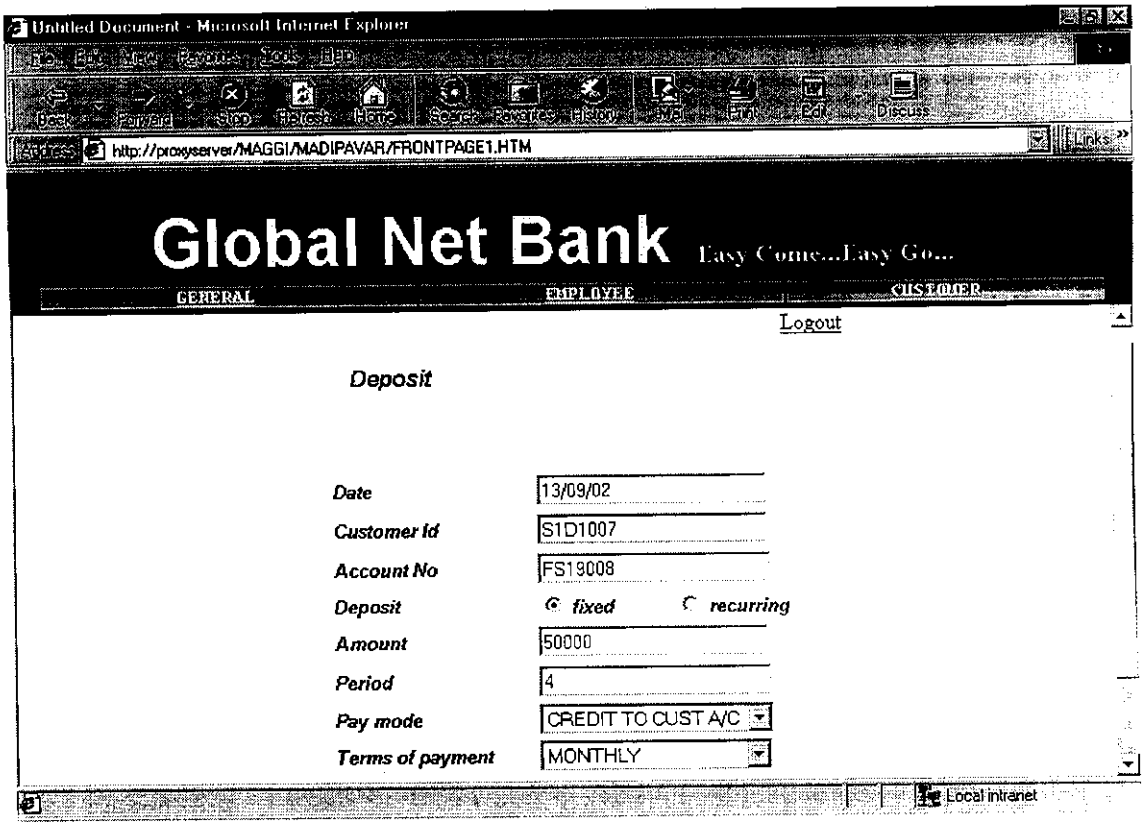
Global Net Bank
Easy Come...Easy Go...
GENERAL
EMPLOYEE
CUSTOMER
Account
Date
07/08/02
Customer Id
C1A9002
Account No
ACC1005
Account
Current
Savings
Operation
Withdrawal
Deposits
Amount
5000
Mode of payment
CASH
To / From
Personal
Submit
Reset
Local intranet

Account opening:



Deposit: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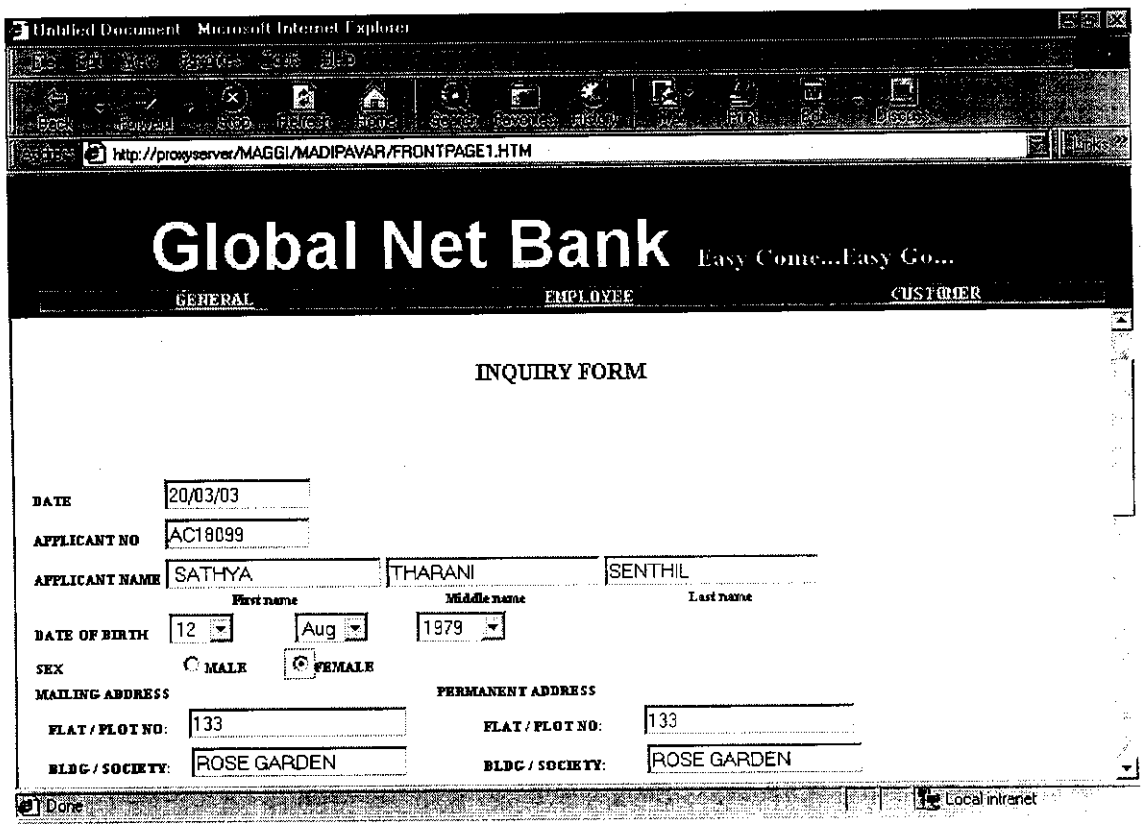
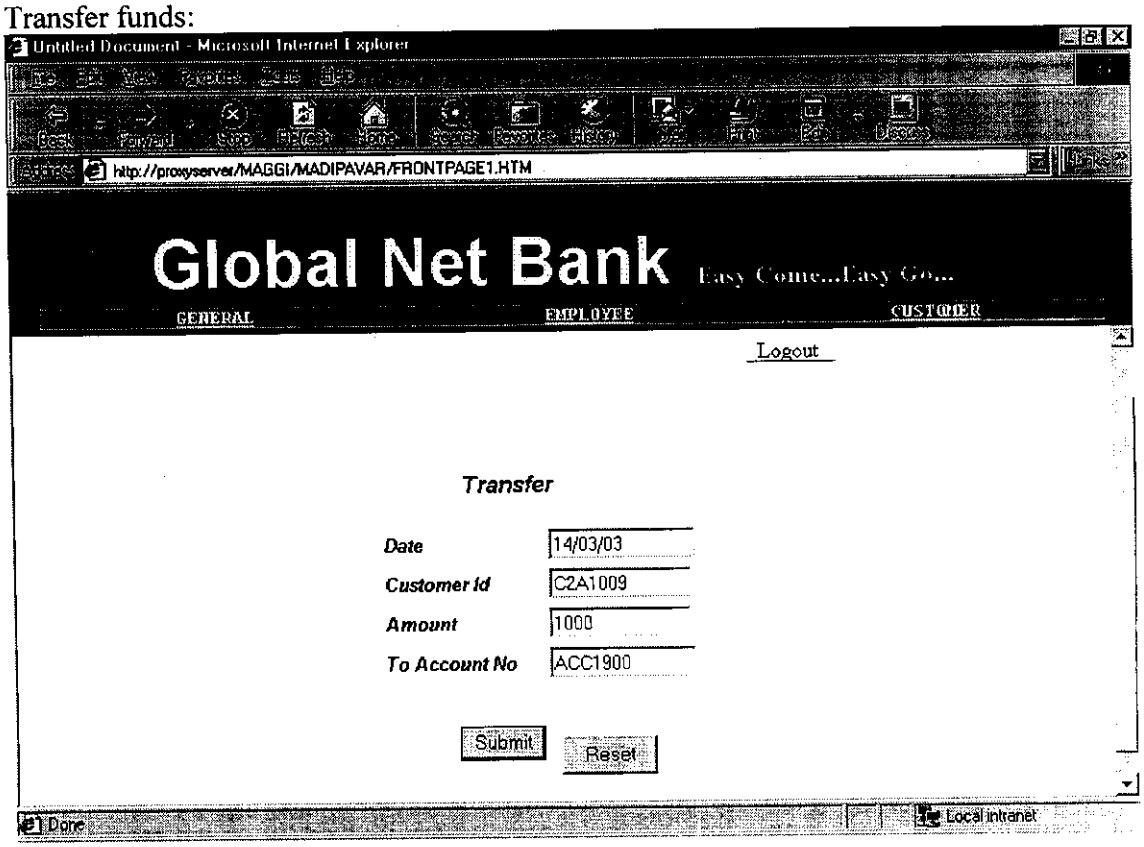
Global Net Bank
Easy Come...Easy Go...
GENERAL
EMPLOYEE
CUSTOMER
Logout
Deposit
Date
13/09/02
Customer Id
S1D1007
Account No
FS19008
Deposit
fixed
recurring
Amount
50000
Period
4
Pay mode
CREDIT TO CUST A/C
Terms of payment
MONTHLY
Local intranet

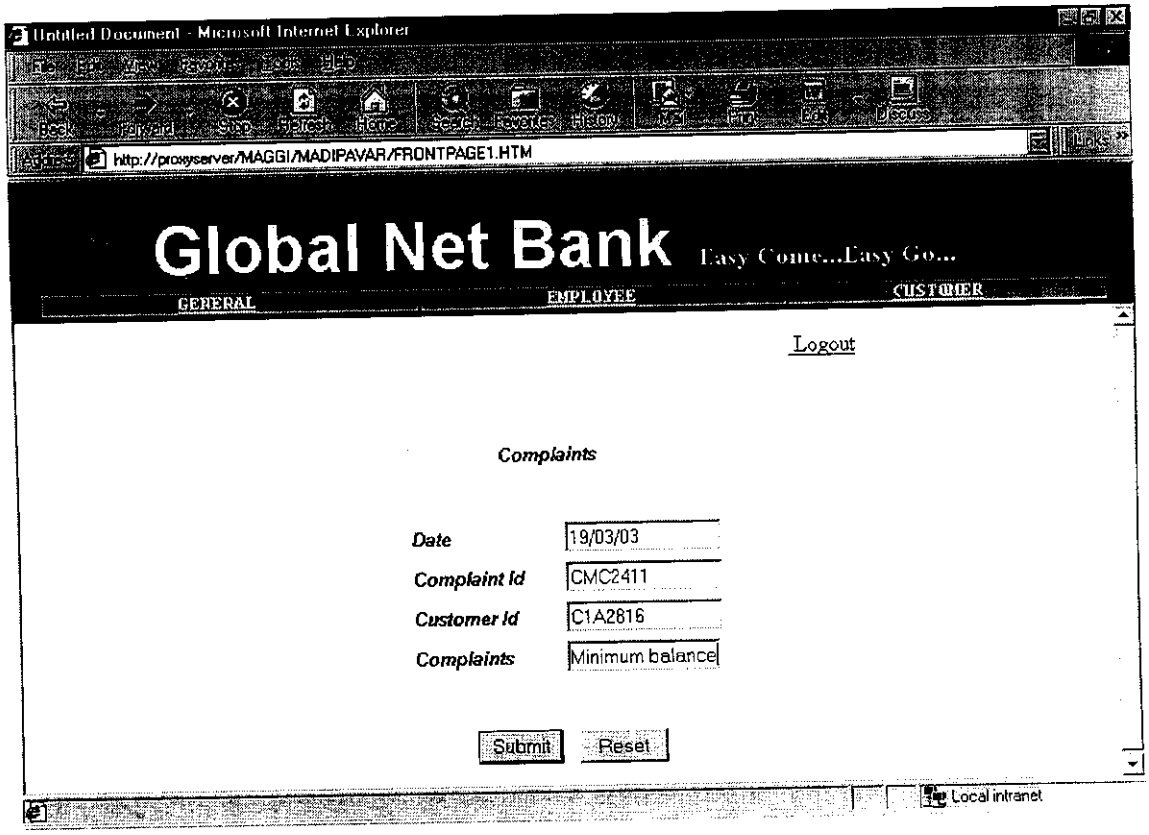
New Customer:



Transfer funds:



Complaint: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Global Net Bank
Easy Come...Easy Go...
GENERAL
EMPLOYEE
CUSTOMER
Logout
Complaints
Date
19/03/03
Complaint Id
CMC2411
Customer Id
C1A2816
Complaints
Minimum balance
Submit
Reset
Local intranet