BACK-END INTEGRATOR FOR FIELD DATA COLLECTION

PROJECT REPORT

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE AWARD OF THE DEGREE OF

M.Sc (APPLIED SCIENCE - COMPUTER TECHNOLOGY)

OF BHARATHIAR UNIVERSITY

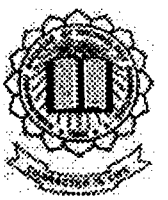
Submitted by

Vijayaraj.S.N.
Reg. No – 0137Q0060

Guided by

P- 975

Mr. N.S.Ramalingam M.C.A., Lecturer



Department of Computer Science and Engineering

Kumaraguru College of Technology
(Affiliated to Bharathiar University)

Coimbatore – 641 006

APRIL 2003

VALUE SOFTWARE TECHNOLOGIES LTD.,

CERTIFICATE

To whom so ever it may concern

This is to certify that **MR. S.N.VIJAYARAJ, 01MCT30** Student of Kumuraguru College of Technology, Coimbatore has been doing his project as a part of partial fulfillment of the award M.Sc.(CT), with Us.

Certifying that the project report entitled "**BACK END INTEGRATOR FOR FIELD DATA COLLECTION**" is a bonafied work carried out under our supervision. During the project time we found him sincere, hard working and have displayed grasp of the subject.

Thanking You

Yours faithfully

K.K. Jagan

(Managing Director)

9, Parthasarathy Gardens, Alwarpet, Chennai - 600 018. India

KUMARAGURU COLLEGE OF TECHNOLOGY

(Affiliated to Bharathiar University)
Department of Computer Science and Engineering

Coimbatore – 641006

CERTIFICATE

This is to certify that the project work entitled

BACK-END INTEGRATOR FOR FIELD DATA COLLECTION

Done by

Vijayaraj.S.N.
Reg. No – 0137Q0060

Submitted in partial fulfillment of the requirement for the award of the degree of M.Sc (Applied science - Computer Technology) of Bharathiar University.

S. Jhanjay
Professor and HOD

Internal Guide 16/4/2003

Submitted to University Examination held on 10/5/03

Internal Examiner (10/5/03)

External Examiner

DECLARTION

I hereby declare that the project entitled "*BACK-END INTEGRATOR FOR FIELD DATA COLLECTION*" was successfully done at M/S Value Software Technologies Ltd, Chennai and submitted to **Kumaraguru College of Technology**, Coimbatore afflicted to Bharathiar University as the project work of **M.Sc (APPLIED SCIENCE - COMPUTER TECHNOLGY)**, is a record of original work done by me during my period of study in Kumaraguru College of Technology, Coimbatore – 641 006, under the supervision and guidance of Mr.N.S.Ramalingam.M.C.A., *Lecturer, Kumaraguru College of Technology, Coimbatore*. And this project work has not formed the basis of award of any Degree / Diploma / Associate ship / Fellowship or similar title any candidate of any university

Name : S.N.Vijayaraj.

Reg. No : 0137Q0060

Signature:

ACKNOWLEDGEMENT

"A Project is the product of experience and it goes a long way in shaping up a person in his respective profession. It is not by himself he gains that experience but a group of dedicated and committed people are behind its success."

I wish to express my gratitude to **Dr.K.K.Padmanabhan**, Principal, Kumaraguru College of Technology , Coimbatore for permitting me to carry out the project work in Value Software Technologies Ltd., Chennai.

My special acknowledgements to **Dr.K.Thangasamy**,Head Of The Department ,Computer Science and Engineering. , who had motivated us and given us lot of ideas about project training all through the course.

I bow in gratitude to **Mr.N.S.Ramalingam**,Lecturer,Computer Science and Engineering Department, for his internal guidance and valuable suggestions. His guidance led to a strong foundation, which was very helpful and thereby explained the practicalities of a work environment.

Iam very grateful to **Mr.Dinesh Ranganathan**, Assistant Professor and Course Co-ordinator ,II M.Sc(CT) and **Mr.K.Sivan Arul Selvan**,Lecturer and Class Advisor, II M.Sc(CT) for his kind support throughout the project period.

I express my sincere feelings of gratitude to **Mr.S.Sundaravaradhan**,General Manager and **Mr.B.A.Raghavendra**., Project Leader, Value Software Technologies Ltd., for their valuable support and keen interest with which they imparted their wide knowledge, accurate suggestions and proper direction which enabled me to pursue my project assignment with great interest.

Finally I would like to thank my parents and all my friends who certainly are the extra energy inside me.

SYNOPSIS

Field Data Collection is the most popular market survey mechanism feeding data to majority of planning and control activities in diverse areas such as Family planning, Economic planning, Healthcare, Consumer Durables, Advertising, Marketing etc. Field data collectors typically reach out to the target segment of the population, distribute questionnaires and collect filled up ones as part of field data collection process. They send the collected data to the particular target institutions through the Internet. For this, they may use PDAs, Cell Phones or conventional PCs connected to the net.

To be able to transform raw data to meaningful information, the data thus collected have to be classified based on several criterions such as demography, employment, education levels, family structure etc.

Data thus collected from various field data collectors across different regions have to be collated to get a macro picture. They should need to be put in a structured format so that scheduled reports can be generated. Ad-hoc queries based on the criterions mentioned above and other classifications need to be supported. Planning related what-if scenarios should also be facilitated.

TABLE OF CONTENTS

1.1. PROBLEM DEFINITION:

1. Business Demands

- Transform Prospects to Clients (pre-sales)
- Reduce Sales Cycle of Lending Products (pre-sales)
- Facilitate faster collections (post-sales)

Today, due to competitive pressures and reducing spreads in retail lending in general and mortgage lending in particular, firms in these businesses have to improve volumes to ensure profitability. This means they have to reduce sales cycle times, otherwise they run the risk of their would-be customer becoming their competitors' customer.

In less developed markets where reliable on-line credit verification systems are not yet in place, the pre-sales process goes through a verification cycle, to confirm the genuine existence of the customer and validation of data provided by him, which boil down to confirming his credit worthiness and repayment capacity.

In the post sales process, collection is a critical area. While automated follow-up and collection systems are in place in developed markets, less developed markets rely on extensive manual collection processes. Any lapses or delays here erode the bottom lines and offset the advantages of increased volumes.

2. Business Problem for Lending Institutions

Many lending institutions rely on their Direct Sales Associates (DSA) to secure customers, verify their credentials and carryout collections. The efficiency and productivity of these DSAs has a direct impact on the volumes of business conducted. In case of white-goods or vehicle loans, the problem is increased due to the involvement of multiple dealers and distributors at various locations. Where high value transactions take place between a high net worth borrower and a sales agent, the agent's ability to answer

all financial questions posed by the borrower on the spot will most likely help the agent to close the sale, than a competitor who needs to check and revert.

Besides signing up with multiple dealers dedicated to selling their products, financial institutions in less developed markets appoint DSAs to scout for clients, and verify the loan application details of prospective borrowers before making Accept/Reject decision on the proposal. Likewise, the services of collection agencies are also used to collect over dues from the defaulting loan accounts in these markets.

3. Solution

Productivity gadgets in the hands of these field agents can significantly improve sales, verification and collections. Since the entire pre-sale transaction takes place in the field, the solution should ideally be held in the agent's shirt pocket or handbag.

Through Backend Integrator, the software suite that runs on Personal Digital Assistants (PDA), lending institutions can greatly leverage state-of-the-art technologies to improve agent productivity in the field.

The BackEnd Integrator consists of the three packages, all operating in PDAs:

- Administrative module (Through the access provisions only authorized institutions, groups or user can only log on to the entire BackEnd integrator system)
- Security module (Since the entire system is a web based one, our own security will be implemented to encrypt as well as decrypt the system data as well application data)
- Verification Agency (Enables faster verification of prospect data and thus reducing the sales cycle) and
- Collection Agency (Enables quick collections of the receivables)

These solutions have back-end connectivity with open systems. This means the solution can be 'hot-sync'-ed at any time with a back-end database, so as to maintain up-to-date information.

3.1 Difficulties in Prospecting without a productivity gadget

The lending business operates with numerous business rules. It takes enormous time to pick out applicable rates and terms corresponding to the customer request for the loan scheme in question and perform accurate paper-based calculations manually. As a result, the sales agents who have only limited time available per prospect call, find it difficult to fully satisfy the prospects who want answers to the following questions before going for a loan.

- ✓ What's my Loan Eligibility and EMI commitment?
- ✓ What do I gain from going with you? What is the superiority in your terms?
- ✓ How much do I gain from switching over to you from my current lender?
- ✓ Of the offers you have, which works out best for me?
- ✓ Given my credit rating, can you grant me a higher loan, and if yes, how much?
- ✓ What-if??? (Various complex and backward calculations)
- ✓ How much do I need to put in by way of up-front Margin & Fee commitments?
- ✓ What are the Tax Savings I make as a result of taking this loan?

Moreover, computing the loan eligibility manually is a cumbersome effort for those mortgage finance schemes that adopt layered interest rates varying with loan tenure ranges and/or loan amount ranges. They suffer from a chicken-and-egg syndrome. To arrive at the applicable interest rate with which loan eligibility can be calculated, one needs to know the corresponding loan amount and vice-versa.

3.2 Solution

- ➢ This innovative project helps relieve the burden involved in carrying out several rounds of iteration associated with manual calculations, by automating the entire process.

3.3 Benefits

- The agent downloads the details of the loan schemes from their office backend systems onto the PDA on a periodic basis. Thus, the agents always carry with them the most current offers as well as the ones that have been defined to take effect from future dates. Thus, the customers can be assured about the accuracy of the proposal and the terms presented to them by the agent.
- By taking the customer through various what-if scenarios, the agents enable customers to make an informed buying decision on the spot, instead of waiting for written responses or follow-up calls.
- Since BackEnd Integrator facilitates customer engagement, the general perception of the salesmen thrusting their schemes onto the customers can be erased. With this powerful productivity tool on the hands of the agent, the sale is always on the cards.
- Thus, Backend Integrator enables lenders to provide better customer satisfaction and achieve improved sales realization.

3.4 Verification Agency

3.4.1 Difficulties in Pre-Sales Co-ordination

Workflow in a typical verification process is as follows:

1. The lender receives the application from the prospect requesting for a loan on a lending product either in a physical or electronic form.
2. The lender assigns the task of collecting data again from the applicant, for the purpose of verification, to a verification agency which can be an external entity
3. The verification agency in turn allocates the task to one or more of its agents
4. The verification agent performs the verification
5. The verification details collected by different agents are sent to the lender
6. The lender makes Accept/Reject decision after comparing verification data with the application data. The co-ordination required among many entities involved in the

process results in delays in decision-making, which may ultimately result in non-realization of sales, adversely affecting the competitiveness of the lender.

3.4.2 Solution

- Automation can help achieve reduction in sales cycles. It implies that the lenders are connected to the verification agencies through extranets, with last mile connectivity being provided for the benefit of verification agents. Verification Agency provides these capabilities. With Verification Agency, the lenders are able to effectively track the status of the application from the time it was allocated to the verification agencies till it returns to them.

3.5 Collection Agency

3.5.1 Difficulties in Post-Sales Collection

Workflow in a typical collection process is as follows:

1. The lender assigns the task of following up with overdue customers to the collection agencies
2. The collection agency in turn allocates the task to one of its agents
3. The collection agent calls on the delinquent customer, armed with all payment and default details, to collect the receivables
4. The agent makes note of the discussions he/she had with the customer and any mutual agreements made with respect to the collection of the pending amount. The agent also assesses whether the default has willful intentions or is caused by temporary circumstances. The agent might also be collecting the pending amount in full or in part either in cash or post dated cheques.
5. The details of the calls made by collection agents are sent to the lender from the collection agency
6. The lender is able to devise a future course of action on the receivables depending on the remarks received

7. Steps 1-6 continue till the time sufficient backlog in overdues is cleared

Since collection cycle time directly impacts the bottom line, the lender needs to have complete control over the collection process. This warrants timely information of the status of calls made by the collection agencies and the commitments given by the customer.

3.5.2 Solution

- Since many entities are involved in this process, it is imperative that they automate the process to a great extent to achieve faster collections. It implies that the lenders are connected to the collection agencies through extranets, with last mile connectivity being provided for the benefit of collection agents. Collection Agency provides these capabilities. With Collection Agency, which provides up-to-date centralized information on the status of the receivables, the lenders are in a position to take follow-up decisions that improve efficiencies in this highly critical business continuity process.

4. Benefits of Back End Integrator

- Meet the Business Demands outlined by enabling technology at the 'last-mile'.
- Empower sales agents surpass the targets by enabling them to achieve time efficiencies.
- Reduce Customer Service Costs. Capture customer data effectively and one-time at the point-of-sale and mine it for future product salesImprove overall profitability resulting from the above. Enhance the customer centric image of the lender.

5. Technology

Java Technology with Back-end databases on standard open Relational DBMS' such as SQL Server and Oracle.

1.2. Organization Profile:

About the Organization:

Value Software Technologies (VAST) is a professional IT solutions and services company with a vision to **"Be a Leading Customer Focused Global Software Solutions Company"**. VAST treats each customer's business needs as unique. Adding value to such unique needs comes from the worldwide experience and exposure VAST has gained over a decade of quality performance in providing IT solutions. When VAST takes care of customer's IT needs **VAST helps them take care of customers** without worrying about your back office support.

Incorporated in 1990, VAST is a privately held IT project services company with investments from ICICI Venture, India's leading venture capital firm. They specialise in providing IT solutions to mission critical business needs both onsite and offshore.
With development centers in Chennai and Bangalore, and Marketing office in Mumbai, India; fully owned subsidiaries in USA, Singapore and Germany, we are the choice of many transnational corporations to service their IT requirements. Their client list spans over 12 countries across three continents.

ISO 9001 certified operations, diverse business knowledge, multi platform experience, highly skilled technical staff, and turnkey project management and execution skills help us in adding Value to your Business

Services:

VAST has been providing quality services on site and offshore since 1990 for customers all over the world. VAST 's skill set is wide ranging and abreast with the latest technologies. Adding value to customer needs comes from the worldwide experience and

exposure VAST has gained over a decade of quality performance in IT. VAST 's team of specialists have extensive experience in the analysis, development, delivery and implementation of IT solutions.

VAST currently employs over 100 software professionals with expertise in diverse technologies. Most of their technical resources have engineering background or have specialized in Computer Science. The average work experience of their technical resources is over 4 years. VAST has technical resources right from developers to experienced Project Managers with domain expertise working in multicultural teams. Their employees blend with ease into the existing setup and are proficient in foreign languages like Deutsch and Français.

The 'State of the Art Development centers' at Chennai and Bangalore in India serves as competence centers for different software technologies. VAST operates on a business model to leverage the best of On-site and Offshore advantages. **VAST's experience in using high speed communication link for executing various overseas projects has given the skills in managing remote execution of projects with all its associated risks.** The impact of risks has also been analyzed and risk-alleviating measures have been devised.

VAST provides cost effective Professional Services across the globe.

- Europe
- USA
- Far East

Working areas:

Turnkey Projects:

Using the expertise in various technologies, VAST provides customized turnkey solutions that cover the entire cycle from conceptualization to completion.

Professional Services:

They provide development and implementation of modules in **Web-Technologies, Mobile computing, Mainframes, Lotus Notes and Client Server** working along with other solution providers.

Products:

With their vast experience in diverse functional domains, they have developed products that fit into your existing system to enhance your information needs.

IT Consultancy:

Consulting- IT requirements analysis.

Implementation, maintenance, conversion, enhancement and migration.

1.3. Existing System:

- The existing system operates with numerous business rules.

- It takes enormous time to pick out applicable rates and terms corresponding to the customer request for the loan scheme in question and perform accurate paper-based calculations manually.

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1.4. Proposed System:

Feeding into the computer of the field agents can significantly improve sales, verification and collections. Since the entire pre-sale transaction takes place in the field, the solution should ideally be held in the agent's nearby Internet connection points so that the entire life cycle of this process gets reduced.

Verification Process:

Automation can help achieve reduction in sales cycles. It implies that the lenders are connected to the verification agencies through extranets, with last mile connectivity being provided for the benefit of verification agents. Verification Agency provides these capabilities. With Verification Agency, the lenders are able to effectively track the status of the application from the time it was allocated to the verification agencies till it returns to them.

Collection Process:

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2.1. SYSTEM REQUIREMENTS :

Hardware Requirements:

- 64 MB RAM (For Server 128 MB RAM minimum)
- 2 GB Hard Disk Drive.(For Server min. 5 GB hDD)
- Pentium – II and above processor with 500 Mhz processor speed.

Software Requirements:

- Windows 95/98/NT/2000 operating system.
- Web-Browser (Internet Explorer 5.0 and above or Netscape Navigator 4.0 and above versions)
- Apache Tomcat4.0 (Web Server)
- Java Development Kit version 1.3
- Java Document Object Model -B8 (Beta version 8.0)
- Textpad 4.0

2.2. Scope of the system:

This is an application project, by which financial institutions are benefited out of this. The main entities in this project are,

1. Financial Institution
2. Agency
3. Agent
4. Customer.

All these four entities interact together to get a overall coordinated activity which will enable the system to work well.

Finance Institution-Customer Interaction:

A customer who wants to get a loan from a finance institution can follow one of the following approaches,

1. Directly go and approach the loan officer
2. Contact through phone.
3. Log on to the company's web site.
4. Contact an agency or agent for approaching the company.

Agency Assignment:

To finish out the loan formalities, i.e to enquire about the customer who approached the company for loan more or less of the following activities have to be performed.

1. Whether the person is able to pay back the loan?
2. How good his financial condition is?
3. What is his monthly income?
4. How reliable the customer's documents are?

These are some of the activities which the finance companies do not want to carry out by themselves. So for that, the companies assign some agencies, which will do the above activities for the company and get back to the company with the results. A company can have any number of agencies.

Agreement between Finance institution and agency:

The agreement basically has the following criteria,

1. Agency is the authorized, assigned one by the institution.
2. Agency has the full right to have a question session with the customer who approached the company for loan.
3. The loan the customers prefer may be any kind like

    - House Construction
    - House Renovation
    - House Purchase
    - Vehicle Loan
    - Study Loan and so on.

4. The agency can use any type of technical assistance to carry out the desired activity.

Agency-Agent Interaction:

To verify the customer details the agencies usually set up agents to do the task. The agents are called the field data collector. An agency may have one or more agents for a particular customer depending upon the type of loan and loan amount.

Type of agents:

Generally there are two types of agents. They are,

1. Verification agents.
2. Collection agents.

Verification agents:

After the assignment with finance institution, the agency asks one of their agents to go and approach the customer for loan verification. The agent will go and distribute the questionnaires on behalf of the agency. Finally they send the resultant data to the company through one among the following,

- PDAs
- Cell Phones
- PCs connected to the Internet.

Collection agents:

If the customer who got the loan from the company, does not pay the EMI(Equated Monthly Installments) within the specified time of the month then company again calls the agency for that task to do. The agency calls the agents, called collection agents who will go to the customer and get the details whether that may be EMI amount or the compensation.

Knowledge about the domain:

There are a set of the technical terms that need to be understood. Some of them are following,

- EMI
- IIR
- LCR.

EMI (Equated Monthly Installments):

The finance institution will calculate the EMI based on the following criteria,

Amount of loan

Period for the loan.

IIR (Installment to Income Ratio):

IIR is calculated according to the following formula,

If the EMI is X and the customer's income per month is Y then,

IIR = X/Y.

So if the company fixes the IIR as some S%, IIR of the customer who expects loan from the company should not exceed S%.

i.e X/Y%<S%

LCR (Loan to Cost Ratio):

The finance company always gives loan to a customer for some percentage of the total money required to complete the work.

Example:

If the company fixes its LCR as 50% and if the customer needs 10,00,000 to finish his work then the company will provide him 50% of 10,00,000 i.e 5,00,000.

The company always fixes some minimum amount below which it will not provide any loan. So if the LCR is 50% and customer needs 1,50,000 for his entire work to get completed, he may get only 75,000. But according to the company's LCR policy he will not be provided with the loan since the loan amount is less than 1,00,000.

2.3.1. DEVELOPMENT ENVIRONMENT:

The development strategy being followed in my project is,

"Three-Tier Client/Server Model"

1. Advantages

The main advantages of three-tier architecture are as follows,

1.0 Reuse: - No wastage of design and implementation time because these codes can be shared among applications.

1.2 Performance: -

Because application deployed on machines other than the client workstation, we have the ability to shift processing load from a client machine that might be underpowered to a server with extra horsepower. This enables to take the advantage of the best possible methods for each aspect of the application's execution and results in better performance.

1.3 Manageability: -

Encapsulation of the application's services into components enables us to break down large, complex applications into more manageable pieces.

1.4 Maintenance: -

The centralization of application for reuse has an added benefit. They become easier to redeploy when modifications are made, thus keeping pace with business needs.

2. Service Model

The following services are used in my project,

- ❖ User services
- ❖ Business Logic services
- ❖ Data services

2.0 User services: -

The main duties of this service model are,

- Provides visual interface that an agency/agent uses to download, view, add, modify and upload information and data.
- Responsible for contacting and requesting services from other services.
- Responsible for encrypting the data before upload and decrypt before download.

2.1 Business Logic services: -

- Provides all the business-oriented tasks such as Administration, Verification and Collection are done here.
- All the decision-making tasks, authentication tasks are done here.

2.2 Data Services: -

Data services involve all the typical data chores, including the retrieval and modification of data as well as the full range of other database-related tasks.

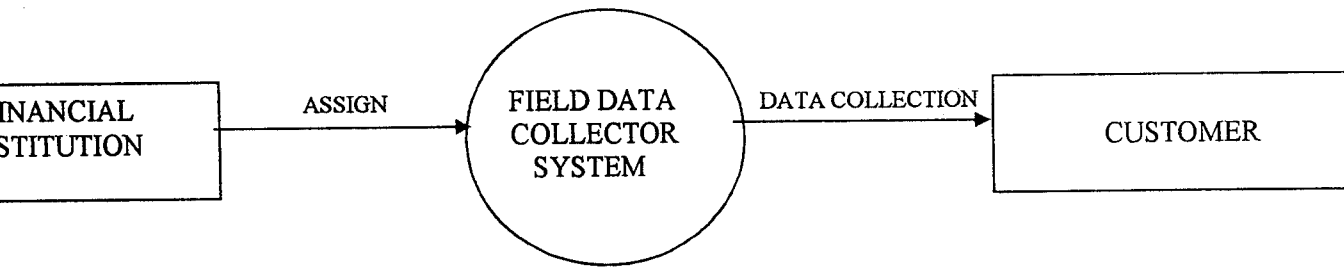
2.3.2 Implementation Environment:

The proposed system **Back-End Integrator for Field Data Collection** has been implemented up to the end user expectations. The different tasks of the system were done at the different stages and tested with the actual data already available. Several modifications have been made pertaining to the user requirements. The testing process was accomplished by obtaining reports from the system for the specified period and testing them with the users.

The system developed is completely web – centric. When the end user makes use of our system he will get immediate response from the server. So the end user can understand the different function clearly and quickly. Different reports can be obtained which makes the end users' task very easy.

The financial institutions like banks can use the system. The system makes the process of loan lending very easy to the user. So the loan lender can quickly take decisions as to accept or reject the loan request. So finally the entire loan process cycle time will get reduced considerably with less paper work.

2.4.1.1. CONTROL FLOW DIAGRAM



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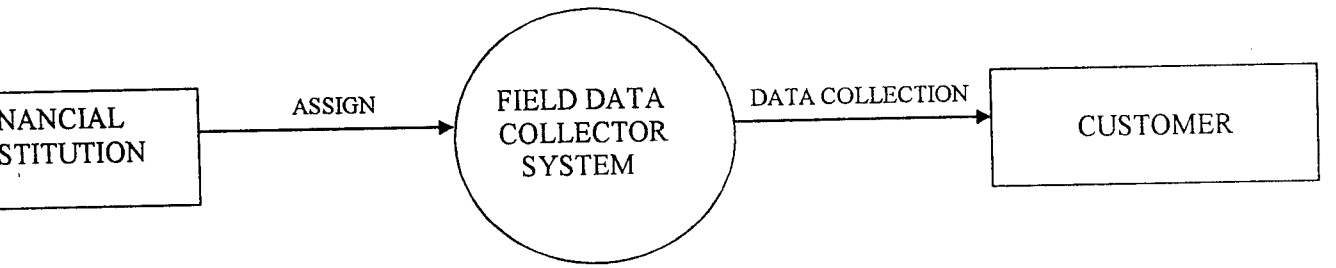
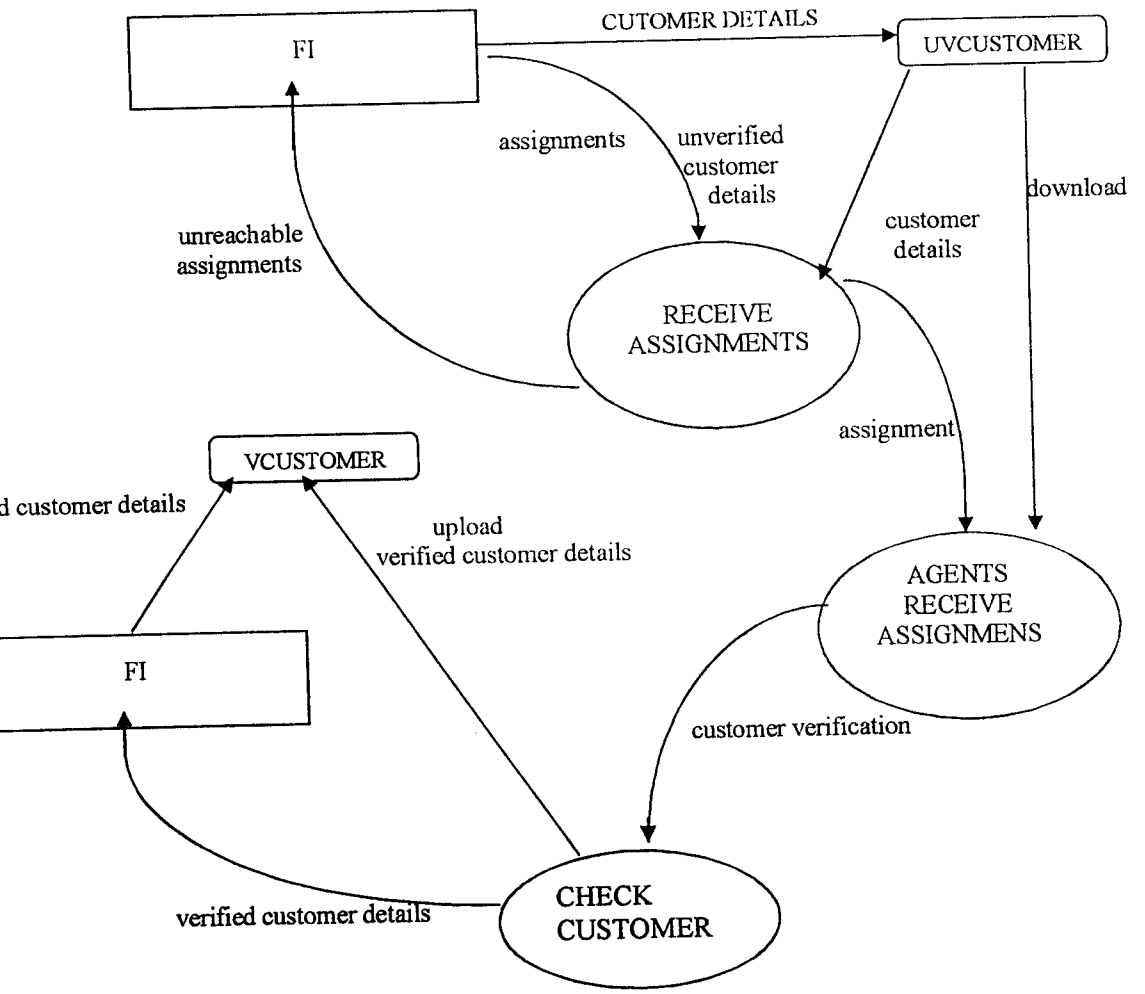


Level – 1 Data Flow Diagram

Verification Agency:



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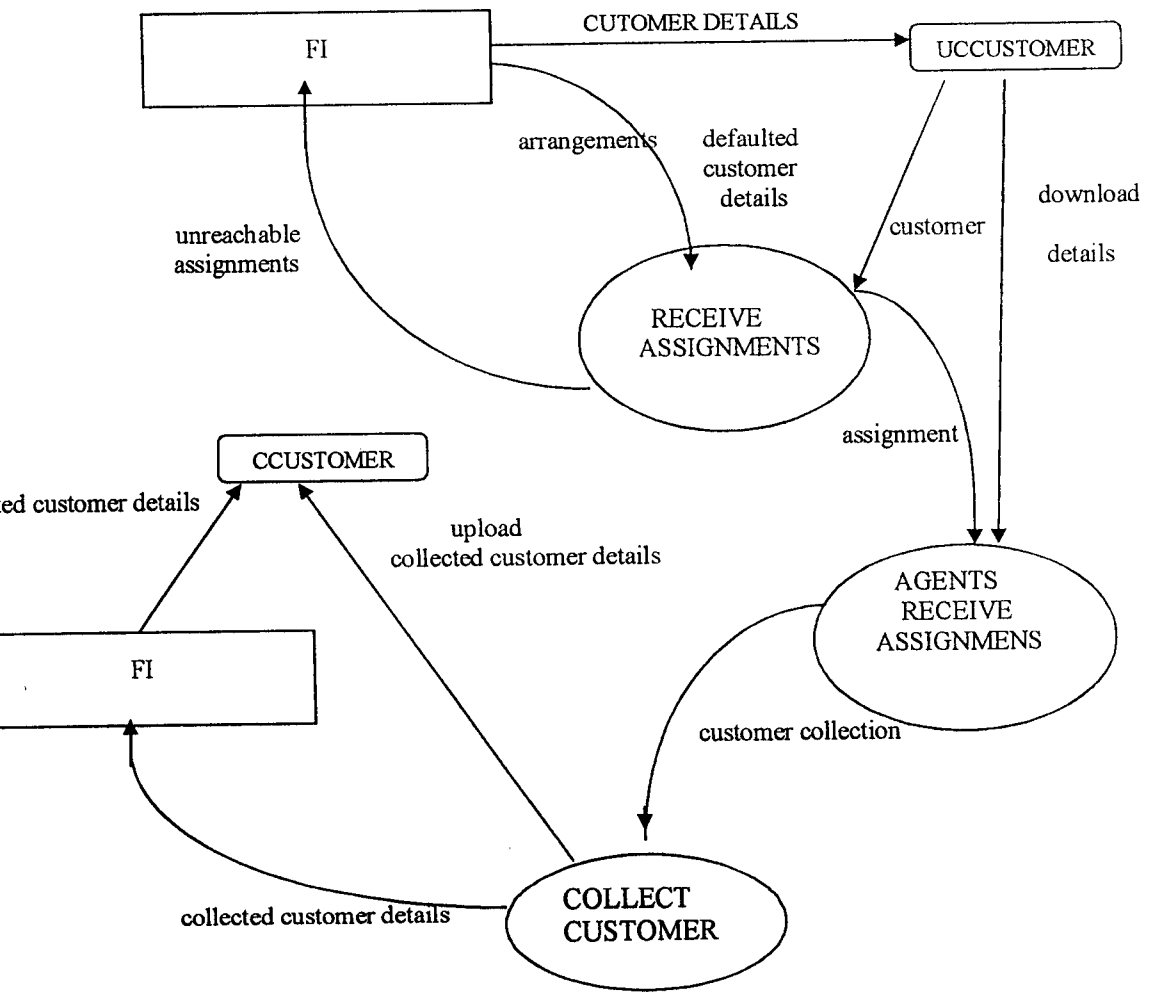
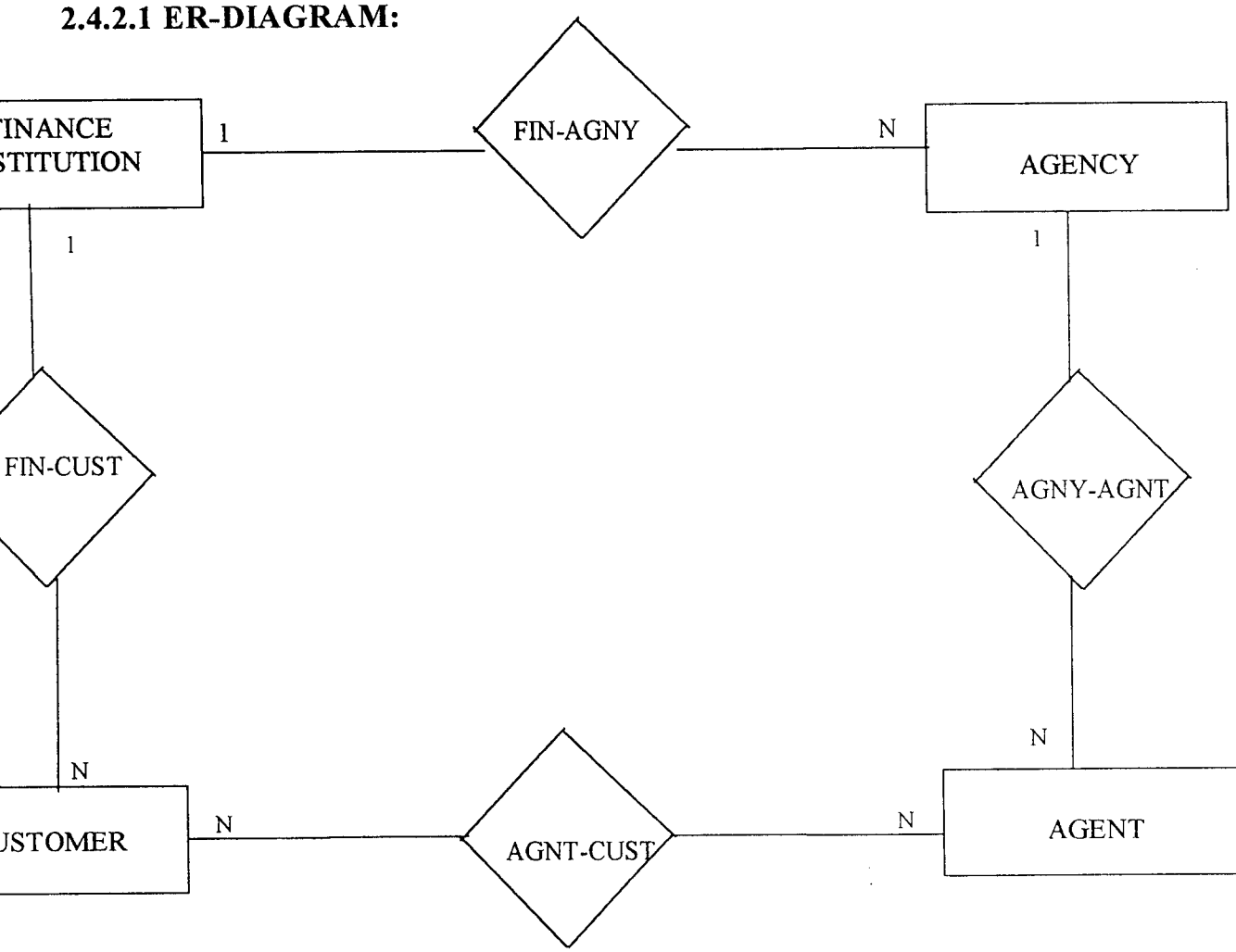
Collection Agency:



2.4.2.1 ER-DIAGRAM:



2.5. Justification of Development Methodology:

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2.1 Business Logic services:

- Provides all the business-oriented tasks such as Administration, Verification and Collection are done here.
- All the decision-making tasks, authentication tasks are done here.

2.2 Data Services:

Data services involve all the typical data chores, including the retrieval and modification of data as well as the full range of other database-related tasks.

So finally we have a software, developed using 3 – tier client/server architecture which performs all its tasks with the main objective of programming taken into consideration,

2. Web Server:

Since our project is a web based one, we required a web server. We have used java technology to develop our software for working in a platform independent manner we had opted for Apache Tomcat Web server because it supports both Windows-based and Unix-based development environment.

3. JSP:

JSP is the way to separate the look and feel of the web page from the underlying business logic so that it is web server and platform independent.

JSP are ideal for creating dynamic web pages. HTML developers can use the tools with which they are already familiar to develop normal HTML, adding dynamic functionality by inserting custom JSP tags here and there as Java developers instruct. Using this type of development methodology, development shops can cleanly separate the HTML presentation layer from the logic layer.

4. XML:

XML is much like HTML.

XML was designed to describe data where we can define our own tags.

XML was designed to carry data.

XML is free and extensible.

XML is going to be the future of web development.

XML is used to separate data, exchange data and share and store data.

5. JAVA:

Other than these technologies, we have used Java as our core development language.

Java is platform independent.

Java is web-centric.

Java is simple and elegant.

Using all these reliable, efficient technologies, we have developed a software which is highly scalable and easily maintainable.

3.1. USER INTERFACE DESIGN:

The user interface is the one, which should be easy to handle and understand by a user who does not know about the system in the first access itself. User interface usually consists of the following characteristics,

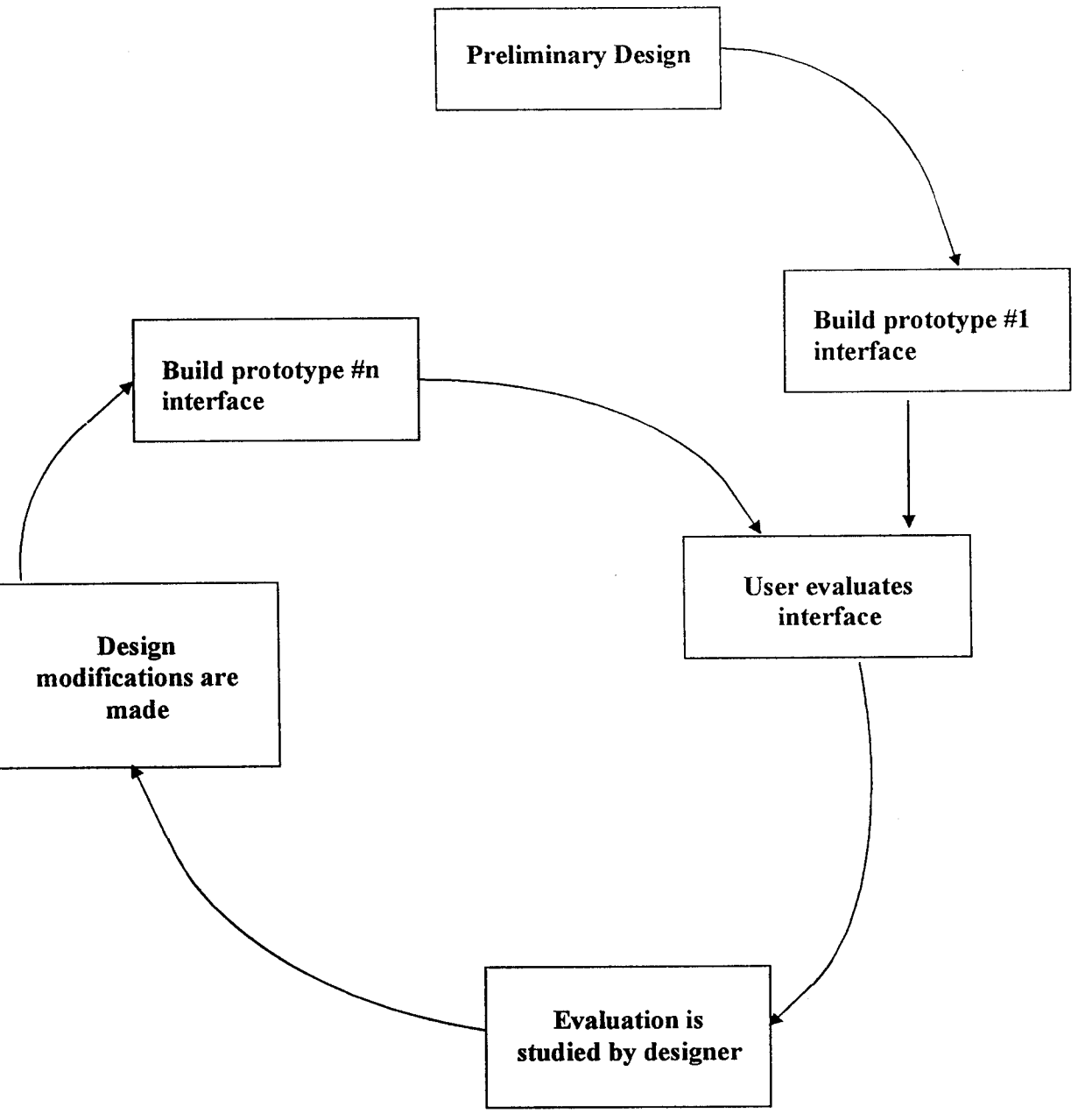
The logical characteristics of each interface between the software product and its users.

This includes those configuration characteristics (e.g., required screen formats, page or window layouts, content of any reports or menus, or availability of programmable function keys) necessary to accomplish the software requirements.

All the aspects of optimizing the interface with the person who must use the system.

This may simply compromise a list of do's and don'ts on how the system will appear to the user. One example may be a requirement for the option of long or short error messages. Like all others, these requirements should be verifiable. For example, "a clerk typist grade 4 can do function X in Z min after 1 hr. of training" rather than "a typist can do function X".

The interface design evaluation cycle:



User Interface Design evaluation:

After the preliminary design has been completed, a first level prototype is created. The prototype is evaluated by the user, who provides the designer with direct comments about the efficacy of the interface.

Evaluation Criteria:

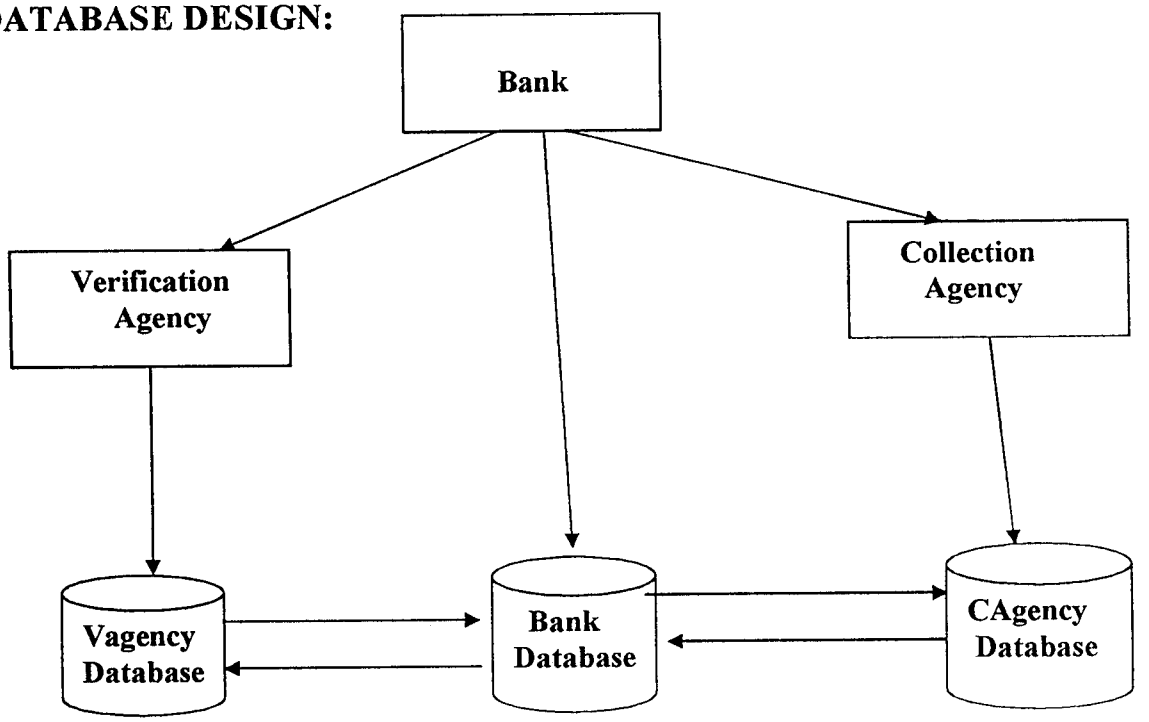
The length and complexity of the written specification of the system and its interface provide an indication of the amount of learning required by the users of the system.

The number of commands or actions specified and the average number of arguments per command are individual operations per action provide an indication of interaction time and the overall efficiency of the system.

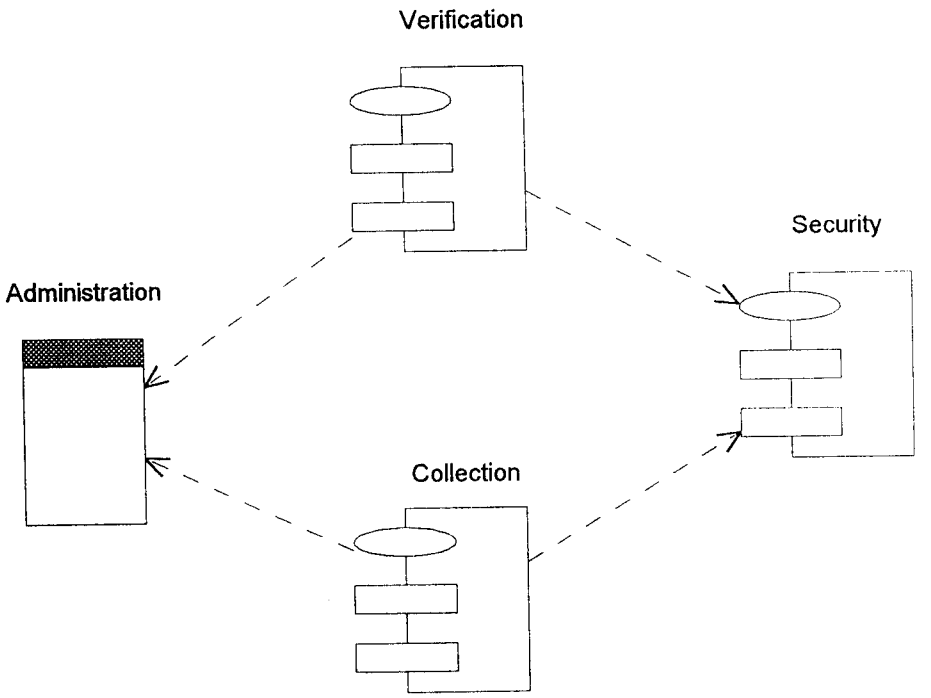
The number of actions, commands and system states indicated by the design model indicate the memory load on users of the system.

Interface style, help facilities, and error handling protocols provide a general indication of the complexity of the interface and the degree to which it will be accepted by the user.

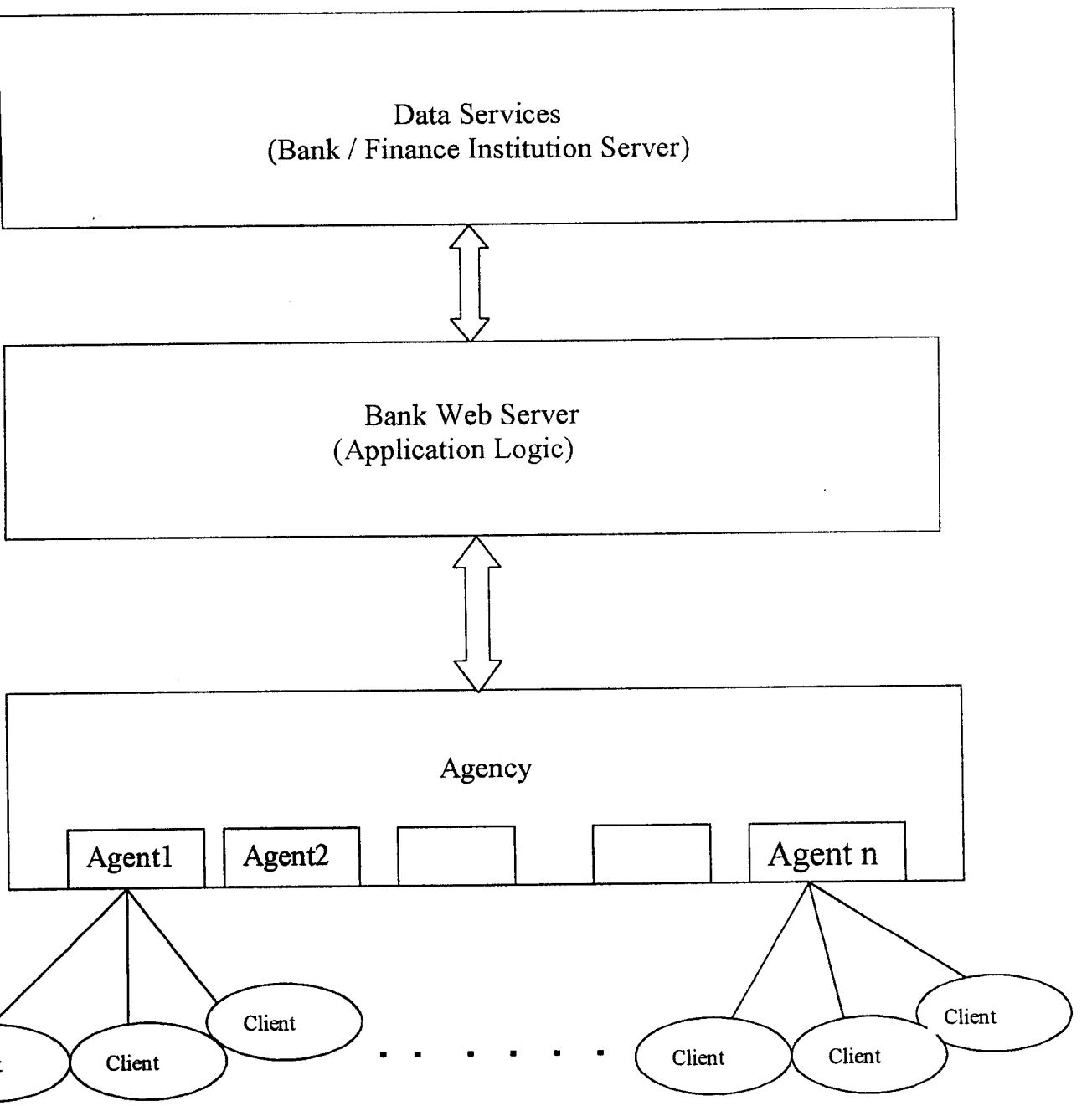
3.2. DATABASE DESIGN:



3.3. MODULE DESIGN:



3.4. DESIGN ARCHITECTURE:



4.1 MODULE DESCRIPTION:

Administrative Module:

Through the access provisions only authorized institutions, groups or user can only log on to the system.

Financial Institution:

- FI is the entity, which has control over the entire system.
- FI maintains various groups and administrators or users who belong to the groups of different allocated agencies so that only the group or administrators registered by the respective agencies can be allowed to access the system.
- FI also maintains different set of screens to which the groups, administrators or the users are accessible. This allocation of screens will be done in the registration time or it can be done in the modification time.
- There are two ways the applications can be allocated. First FI can allocate applications to a particular agency, forcibly, even if the agency's work area is not close to the customer residence. Secondly FI can map agencies to a set of applications. The mapping works by matching the residence pin codes of the customers to that of the verification agency's work area.
- The process for the collection agency is the same.

Agency:

- Agency allocates it's own agents for verification or collection. So agencies have the full control over all the agents who are allocated by the respective agencies.

- Agencies also maintain different set of screens, which are allotted as default by the financial institutions.

- If the agency wants to add more or modify screen access provisions to the agents they can do that by modifying screens allotments.

Agents:

After the allotment from agencies, the agents actually go into the customers, do the verification and collection and finally send the result back to the financial institution.

Collection Module:

If the customer, who got the loan from the company, does not pay the EMI (Equated Monthly Installments) within the specified time of the month then company again calls the agency for that task to do. The agency calls the agents, called collection agents who will go to the customer and get the details whether that may be EMI amount or the compensation.

Workflow in a typical collection process is as follows:

- The lender assigns the task of following up with overdue customers to the collection agencies.

- Generally the bank allows the payment to be defaulted three times. Otherwise it takes it as the overdue. Now the bankers call the collection agencies and allocate the work to them.

- The agencies are given a fixed time period to collect the pending due from the defaulters.

- The collection agency in turn allocates the task to one of its agents.

- The collection agent calls on the delinquent customer, armed with all payment and default details, to collect the receivables.

- The agent makes note of the discussions he/she had with the customer and any mutual agreements made with respect to the collection of the pending amount. The agent also assesses whether the default has willful intentions or is caused by temporary circumstances. The agent might also be collecting the pending amount in full or in part either in cash or post dated cheques.

- The details of the calls made by collection agents are sent to the lender from the collection agency.

- The lender is able to devise a future course of action on the receivables depending on the remarks received.

- Steps 1-6 continue till the time sufficient backlog in overdue is cleared.

Since collection cycle time directly impacts the bottom line, the lender needs to have complete control over the collection process. This warrants timely information of the status of calls made by the collection agencies and the commitments given by the customer.

Verification Module:

The main entities in this project are,

1. Financial Institution
2. Agency
3. Agent
4. Customer.

All these four entities interact together to get a overall coordinated activity which will enable the system to work well.

Finance Institution-Customer Interaction:

A customer who wants to get a loan from a finance institution can follow one of the following approaches,

1. Directly go and approach the loan officer
2. Contact through phone.
3. Log on to the company's web site.
4. Contact an agency or agent for approaching the company.

Agency Assignment:

To finish out the loan formalities, i.e to enquire about the customer who approached the company for loan more or less of the following activities have to be performed.

1. Whether the person is able to pay back the loan?
2. How good his financial condition is?
3. What is his monthly income?
4. How reliable the customer's documents are?

These are some of the activities which the finance companies do not want to carry out by themselves. So for that, the companies assign some agencies, which will do the above activities for the company and get back to the company with the results. A company can have any number of agencies.

Agreement between Finance institution and agency:

The agreement basically has the following criteria,

1. Agency is the authorized, assigned one by the institution.
2. Agency has the full right to have a question session with the customer who approached the company for loan.
3. The loan the customers prefer may be any kind like,

   - House Construction
   - House Renovation
   - House Purchase
   - Vehicle Loan
   - Study Loan and so on.

4. The agency can use any type of technical assistance to carry out the desired activity.

Agency-Agent Interaction:

To verify the customer details the agencies usually set up agents to do the task. The agents are called the field data collector. An agency may have one or more agents for a particular customer depending upon the type of loan and loan amount.

Verification Agency:

Workflow in a typical verification process is as follows:

- The lender receives the application from the prospect requesting for a loan on a lending product either in a physical or electronic form.

- The lender assigns the task of collecting data again from the applicant, for the purpose of verification, to a verification agency, which can be an external entity.

- The verification agency in turn allocates the task to one or more of its agents.

- The verification agent performs the verification.

- The verification details collected by different agents are sent to the lender
- The lender makes Accept/Reject decision after comparing verification data with the application data. The co-ordination required among many entities involved in the process results in delays in decision-making, which may ultimately result in non-realization of sales, adversely affecting the competitiveness of the lender.

4.2 TESTING AND TEST PLAN

Software testing is one of the important elements in the development of a software product. Software developers by nature are constructive, the developers always feel that they developed is '**right**'. Testers always try to find an error and say '**No**' to the developers.

'*The development of software involves a series of production activities where opportunities for injection of human fallibilities are enormous. Errors may begin to occur at the very inception of the process where the objectives... may be erroneously or imperfectly specified, as well as later design and development stages.... Because of human inability to perform and communicate with perfection, software development is accompanied by a quality assurance activity*'.

- Deutsch

Testing objectives:

There are a number of rules that can serve well as testing objectives,

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 probabaility of finding an as– yet undiscovered error.

A successful test is one that uncovers an as-yet undiscovered error.

Testing Principles:

- All tests should be traceable to customer requirements.
- Tests should be planned long before testing begins.
- The Pareto principle applies to software testing.
- Testing should begin "*in the small*" and progress towards testing "*in the large*".
- Exhaustive testing is not possible.
- To be most effective, an independentthird party should conduct testing.

Test Plan:

A software project test plan is a document that describes the objectives, scope, approach, and focus of a software testing effort. The process of preparing a test plan is a useful way to think through the efforts needed to validate the acceptability of a software product. The completed document will help people outside the test group understand the 'why' and 'how' of product validation. It should be thorough enough to be useful but not so thorough that no one outside the test group will read it. The following are some of the items that might be included in a test plan, depending on the particular project:

- Title
- Identification of software including version/release numbers
- Revision history of document includingauthors, dates, approvals
- Table of Contents
- Purpose of document, intended audience
- Objective of testing effort

- Software product overview
- Relevant related document list, such as requirements, design documents, other test plans, etc.
- Relevant standards or legal requirements
- Traceability requirements
- Relevant naming conventions and identifier conventions
- Overall software project organization and personnel/contact-info/responsibilities
- Test organization and personnel/contact-info/responsibilities
- Assumptions and dependencies
- Project risk analysis
- Testing priorities and focus
- Scope and limitations of testing
- Test outline - a decomposition of the test approach by test type, feature, functionality, process, system, module, etc. as applicable
- Outline of data input equivalence classes, boundary value analysis, error classes
- Test environment - hardware, operating systems, other required software, data configurations, interfaces to other systems
- Test environment validity analysis - differences between the test and production systems and their impact on test validity.
- Test environment setup and configuration issues
- Software migration processes
- Software CM processes
- Test data setup requirements
- Database setup requirements
- Outline of system-logging/error-logging/other capabilities, and tools such as screen capture software, that will be used to help describe and report bugs
- Discussion of any specialized software or hardware tools that will be used by testers to help track the cause or source of bugs
- Test automation - justification and overview
- Test tools to be used, including versions, patches, etc.
- Test script/test code maintenance processes and version control

- Problem tracking and resolution- tools and processes
- Project test metrics to be used
- Reporting requirements and testing deliverables
- Software entrance and exit criteria
- Initial sanity testing period and criteria
- Test suspension and restart criteria
- Personnel allocation
- Personnel pre-training needs
- Test site/location
- Outside test organizations to be utilized and their purpose, responsibilities, deliverables, contact persons, and coordination issues
- Relevant proprietary, classified, security, and licensing issues.
- Open issues
- Appendix - glossary, acronyms, etc.

Test Case:

- A test case is a document that describes an input, action, or event and an expected response, to determine if a feature of an application is working correctly. A test case should contain particulars such as test case identifier, test case name, objective, test conditions/setup, input data requirements, steps, and expected results.
- Note that the process of developing test cases can help find problems in the requirements or design of an application, since it requires completely thinking through the operation ofthe application. For this reason, it's useful to prepare test cases early in the development cycle if possible.

Testing methods:

The general testing methods include,

- Unit Testing
- Integration Testing
- Validation Testing
- System Testing

Test Design:

"Extreme Programming"

A Strength to programming and testing.

1. What is XP?

A discipline of software development based on a set of values, principles and practices for rapidly producing high-quality software.

2. Activities

Getting Customer requirements

- Small releases
- Pair programming
- Continuous testing
- Continuous integration
- Collective ownership
- Refactoring

3. Testing

"Continuous testing"

Each and every aspect of the project is tested then and there.

Developers write Units test and customers write functional tests

Unit tests are used to test small clusters of classes. A particular task or component is considered complete when the tests passed for that phase.

Every time a task is completed that part would be integrated with the system as many time a day as possible.

Continuous integration helps a lot in discovering defects early in the development cycles. So tests are run 100% both before and after integration, which keep us to up to date.

Pair programming

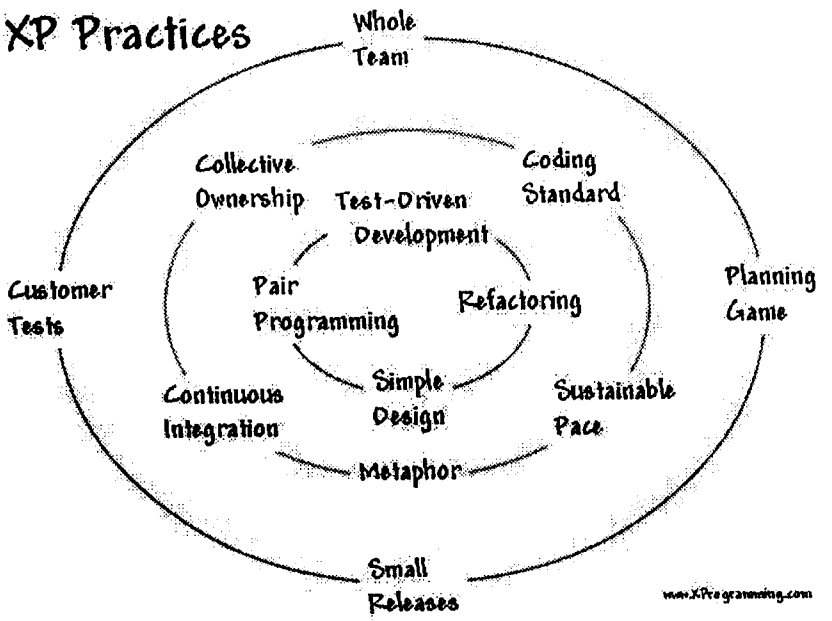
Two programmers working as a pair are more than twice as productive as a single programmer working alone.

Working in pairs do not just eliminate syntax errors, but avoiding having to spend the whole night trying to individually fix a bug that someone else could have realized earlier.

Testing Strategy:

Throughout the development of this project, the Extreme Programming methods were followed. Test cases were designed earlier as the programming methodlogy requires **continuous testing**. So unit testing was implemented right from the beginning of the code.

Development and Testing:



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- Continuous testing
- Continuous integration
- Collective ownership
- Refactoring

4.3.1 UNIT TESTING:

Unit tests are one of the corner stones of Extreme Programming (XP). But unit tests XP style is a little different. First you should create or download a **unit test framework** to be able to create automated unit tests suites. Second you should test all classes in the system. Trivial getter and setter methods are usually omitted. And last you should try to create your tests first, before the code.

Unit tests are released into the code repository along with the code they test. Code without tests may not be released. If a unit test is discovered to be missing it must be created at that time.

Unit tests enable **collective code ownership**. When you create unit tests you guard your functionality from being accidentally harmed. Requiring all code to pass all unit tests before it can be released ensures all functionality always works. Code ownership is not required if all classes are guarded by unit tests.

Sample Tests:

Test cases were developed earlier for different unit test. The following are some of the general unit tests, which were followed.

- Date field test

  Here the values entered should be got from the calender control and the respective software should support the date format. The validation is done according to the requirement of the customer.

  Example: Age should be between 20 and 60.

- Check for null

  Some fields are mandatory and it should not contain null values.

  Example: Name and address of a person cannot be null where as Email id and website can be null.

- Check for numbers

  Some of the fields should contain only numbers and not characters like the rent amount, salary, experience, etc.

  Test cases were developed to check the above.

So according to Extreme Programming, pair programming was followed and when an error was encountered, it was corrected then and there and the individual units were tested and ready for the integration testing.

4.3.2 INTEGRATION TESTING:

Integration testing is complex and time-consuming and planning of the process is essential. The larger the system, the earlier this planning must start and the more extensive it must be.

Integration test planning may be the responsibility of a separate V & V (verification and validation) team. A group should always undertake it, which is separate from the development team.

Sample Tests:

Database integration:

Generally in this system data passed between two JSP pages or passed from a JSP page to database are in XML string format. So whenever any empty (unknown value) passed by XML, in the database the actual value stored are null values. So whenever such a situation occurs database gives an error.

Module integration:

Here, in our system the main module is the Administration module. So verification and collection module will not work without the administration module. So any agency, which belongs to verification agency or collection agency will have to be assigned proper group id or user id provisions by the administration module for the agency to even enter into the system.

4.3.3 VALIDATION TESTING:

A validation test is considered success when the software functions in a manner that can be reasonably expected by the customer.

Here a series of sample inputs have been developed (Black Box testing) and entered into the system to check whether the software works in a manner, which is expected to work. After each validation test has been performed the following possible conditions have been checked.

- The function characteristics conform to specification and are accepted.
- A deviation from specification is uncovered and deficiency list is created.
- Deviation or error discovered at this stage in a project can rarely be corrected prior to scheduled completion.

4.3.4 SYSTEM TESTING:

Testing the system as a whole to validate that it meets its specification and the objectives of its users.

- Intended to test the system as a whole rather than individual system components.
- Integration testing.
- As the system is integrated, the system developer for specification compliance tests it.
- Stress testing.
- The behavior of the system is tested under conditions of load.
- Acceptance testing.
- The customer to check if it conforms to the terms of the development contract tests the system.
- Inevitably, system testing reveals errors which were undiscovered during component testing.

CONCLUSION

To conclude, this software is developed taking the following aspects into consideration,

- **Time**

  Overall time for verification and collection processes is considerably reduced which reduces the entire process cycle time.

- **Automation**

  Since the work is not done manually, needed information can be got by the click of a button.

- **Security**

  The security level is very high and it makes impossible for the intruders to have their hand on the incoming and outgoing data because this system uses it's own security algorithm.

- **Capacity**

  Large number of users can access the system through the network at a time irrespective of network traffic.

As we students begin our march into the competitive software market, we have to strive to create a complete software solution, which should not only meet particular requirement of the client but also cover all the boundaries of the domain for which the software is intended for. So the software, which I helped to develop, takes care of all the above attributes in mind.

5.1 LIMITATIONS AND FUTURE ENHANCEMENTS:

Limitations:

The system conventionally is designed in such a way to restrict the capacity of agencies under a financial institution and the number of agents under each agency for the system to function smoothly.

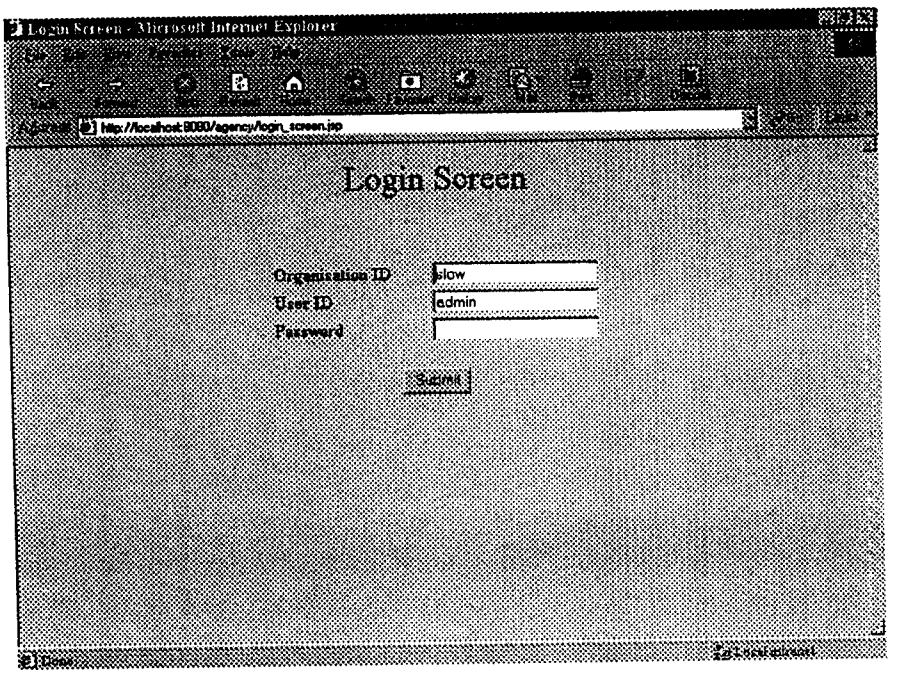
The system as a whole is developed using java technolology, thereby the system enjoys all its capabilities and features. The server used is Apache Tomcat,which is very flexible across different platforms.Hence making it hard to look for any limitations.

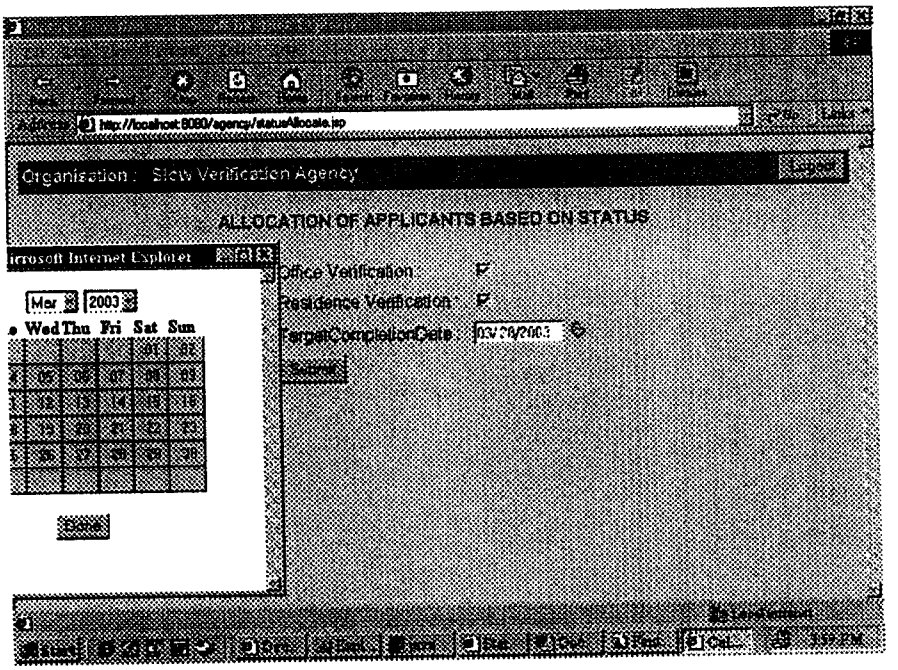
Future Enhancements:

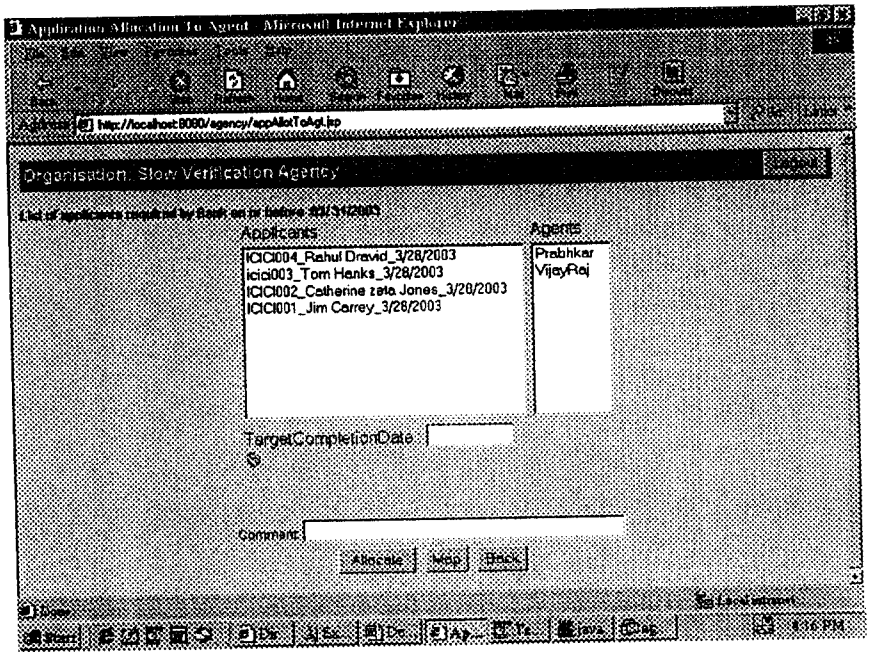
The key elements of the system will be the connectivity issue, that is ability to have an inter-connected system with access across all cities and offices globally spread over the world over a large volume of population.

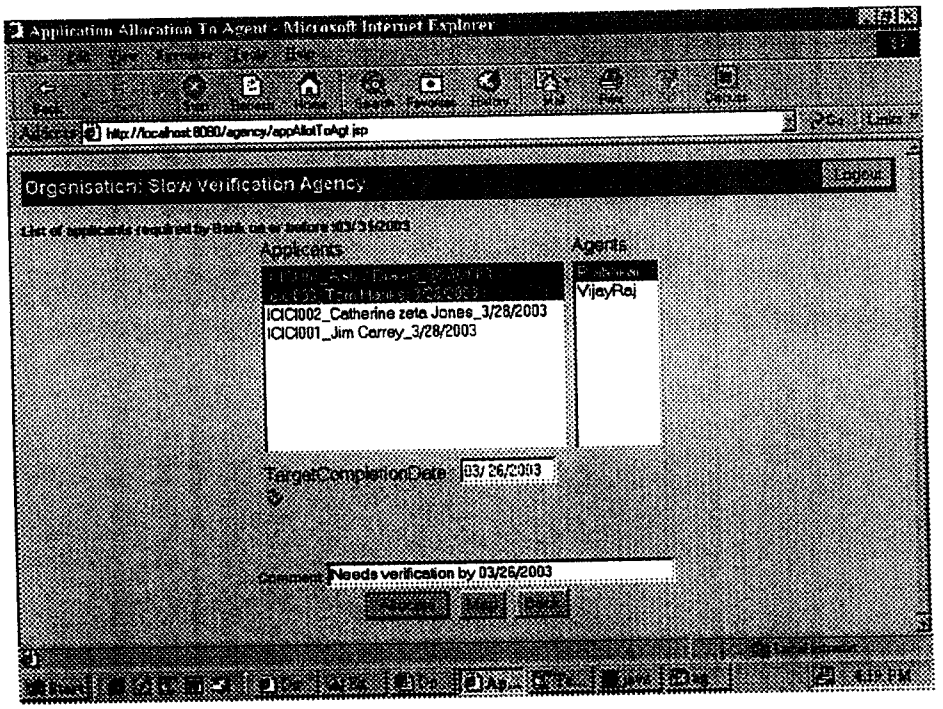
A web-based solution will largely address this issue. All shelters have web access today and the platform will be more robust as against the old system connectivity.

Agency Screens:






Application Allocation To Agent - Microsoft Internet Explorer
http://localhost:8080/agency/appAllotToAgt.jsp
Organisation: Slow Verification Agency
Logout
Applicants
Agents
ICICI004_Rahul Dravid_3/28/2003
icici003_Tom Hanks_3/28/2003
ICICI002_Catherine zeta Jones_3/28/2003
ICICI001_Jim Carrey_3/28/2003
Prabhkar
VijayRaj
TargetCompletionDate
Comment
Allocate
Help
Back


Application Allocation To Agent - Microsoft Internet Explorer
http://localhost:8080/agency/appAllotToAgt.jsp
Organisation: Slow Verification Agency
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Applicants
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VijayRaj
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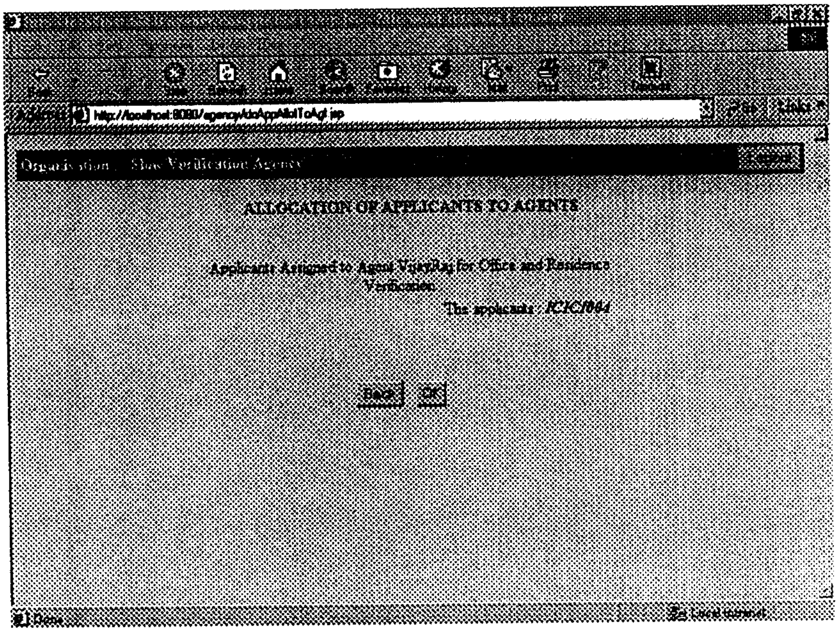
03/ 26/2003
Comment
Needs verification by 03/26/2003
Allocate
Help
Back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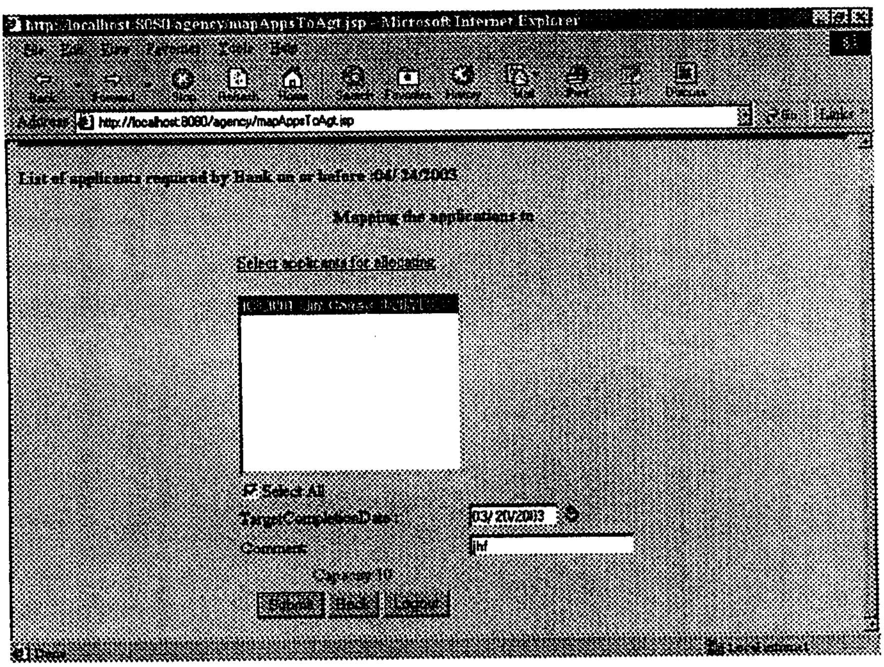
ALLOCATION OF APPLICANTS TO AGENTS
Back
OK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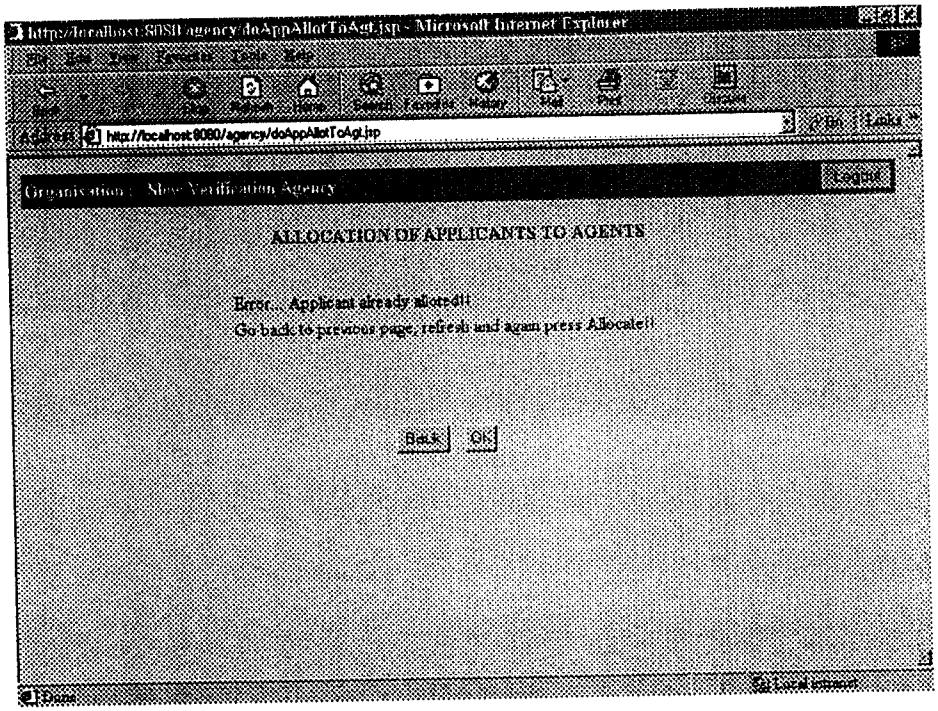
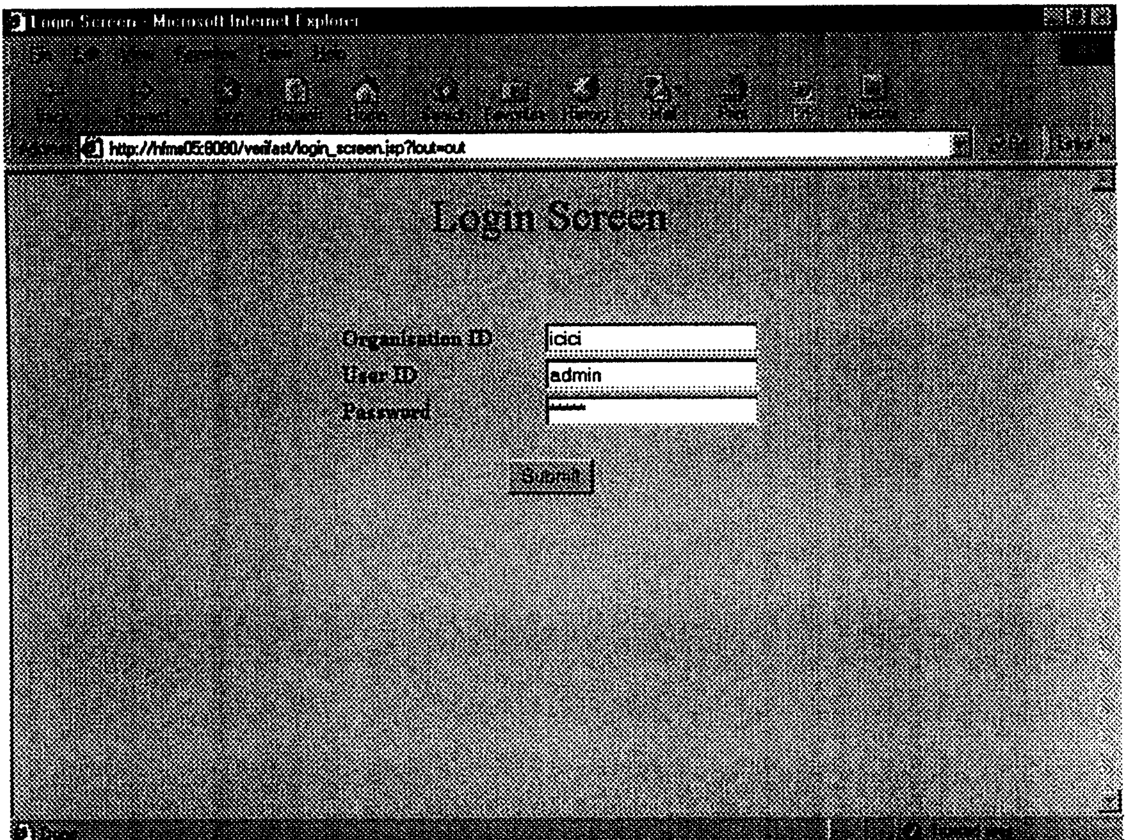
http://localhost:8080/agency/mapAppsToAgt.jsp
Mapping the applications to
Select All
03/ 20/2003
Comment
Back


Logout
ALLOCATION OF APPLICANTS TO AGENTS
Error... Applicant already alloted!!
Go back to previous page, refresh and again press Allocate!!
Back
OK


Login Screen - Microsoft Internet Explorer
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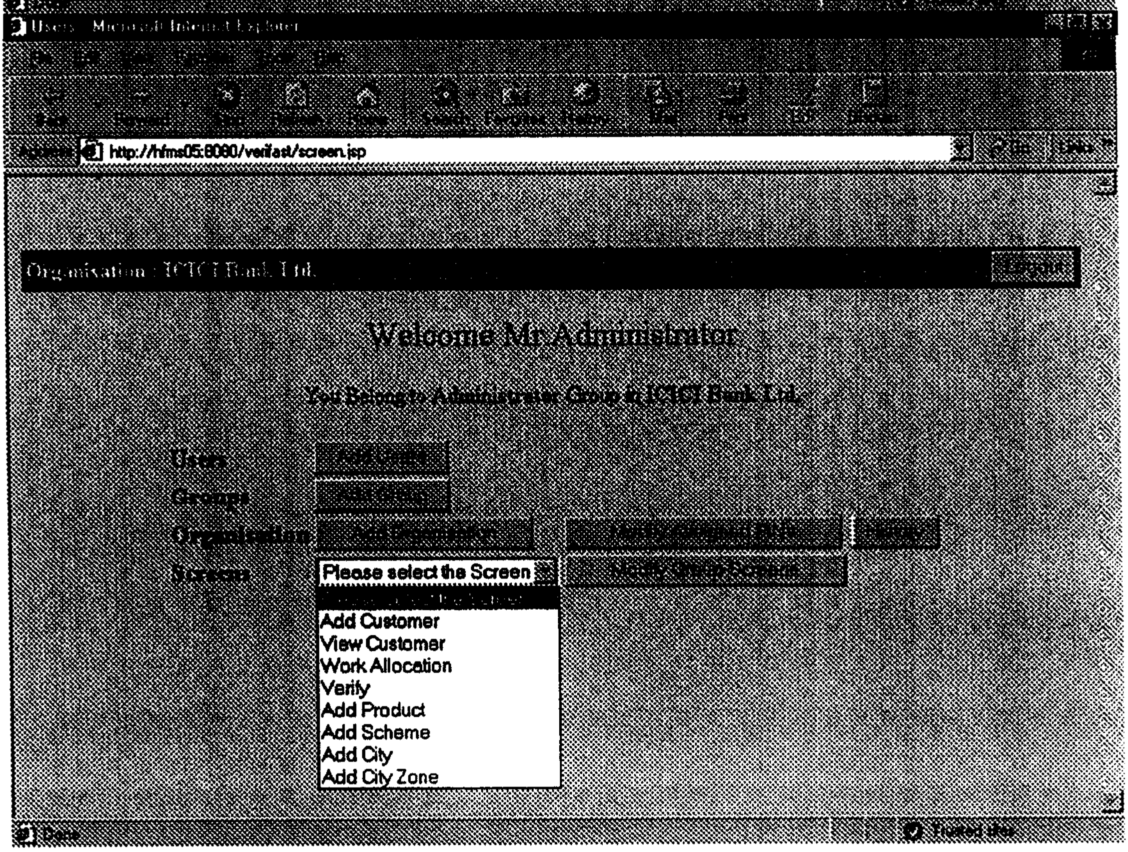
Login Screen
Organisation ID
icici
User ID
admin
Password
Submit


Users - Microsoft Internet Explorer
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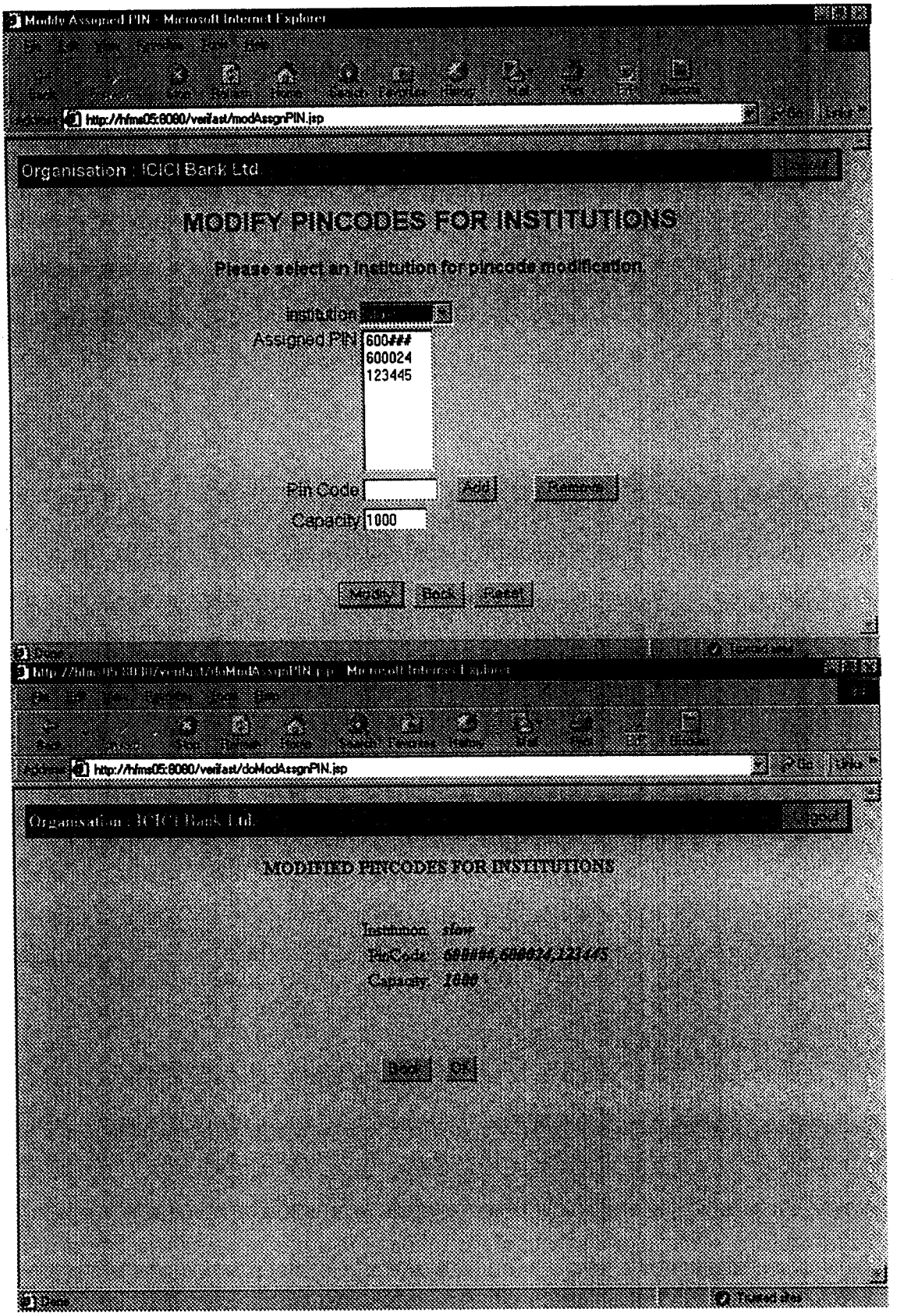
Organisation : ICICI Bank Ltd.
Logout
Welcome Mr Administrator
You Belong to Administrator Group in ICICI Bank Ltd.
Users
Groups
Organisation
Add Organisation
Screens
Please select the Screen
Modify Group Screens
Add Customer
View Customer
Work Allocation
Verify
Add Product
Add Scheme
Add City
Add City Zone


Modify Assigned PIN - Microsoft Internet Explorer
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Organisation : ICICI Bank Ltd.
MODIFY PINCODES FOR INSTITUTIONS
Please select an institution for pincode modification.
Institution
Assigned PIN
600###
600024
123445
Pin Code
Add
Remove
Capacity
1000
Modify
Back
Reset
Done
Trusted sites
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MODIFIED PINCODES FOR INSTITUTIONS
Institution : slow
PinCode : 600###,600024,123445
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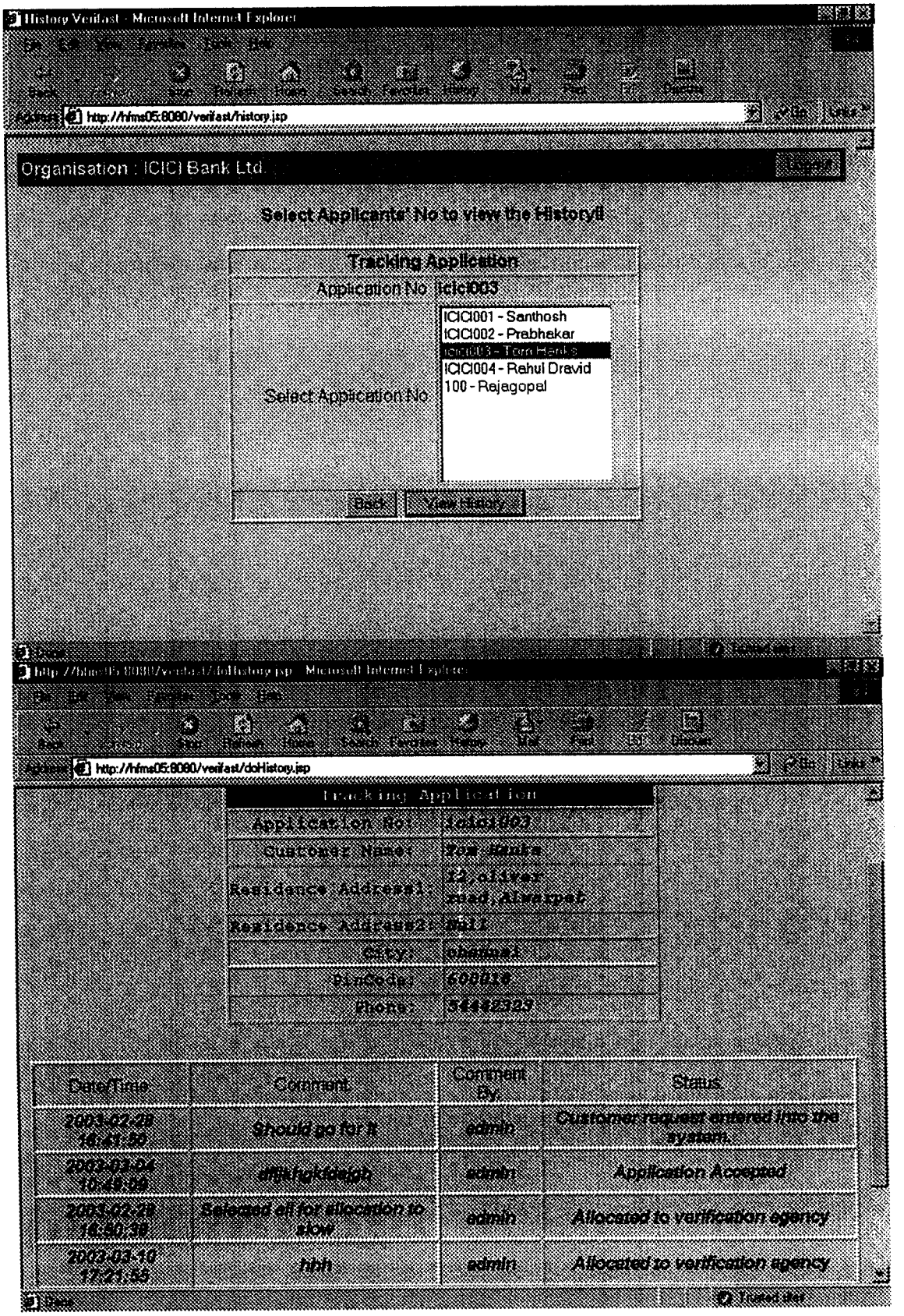
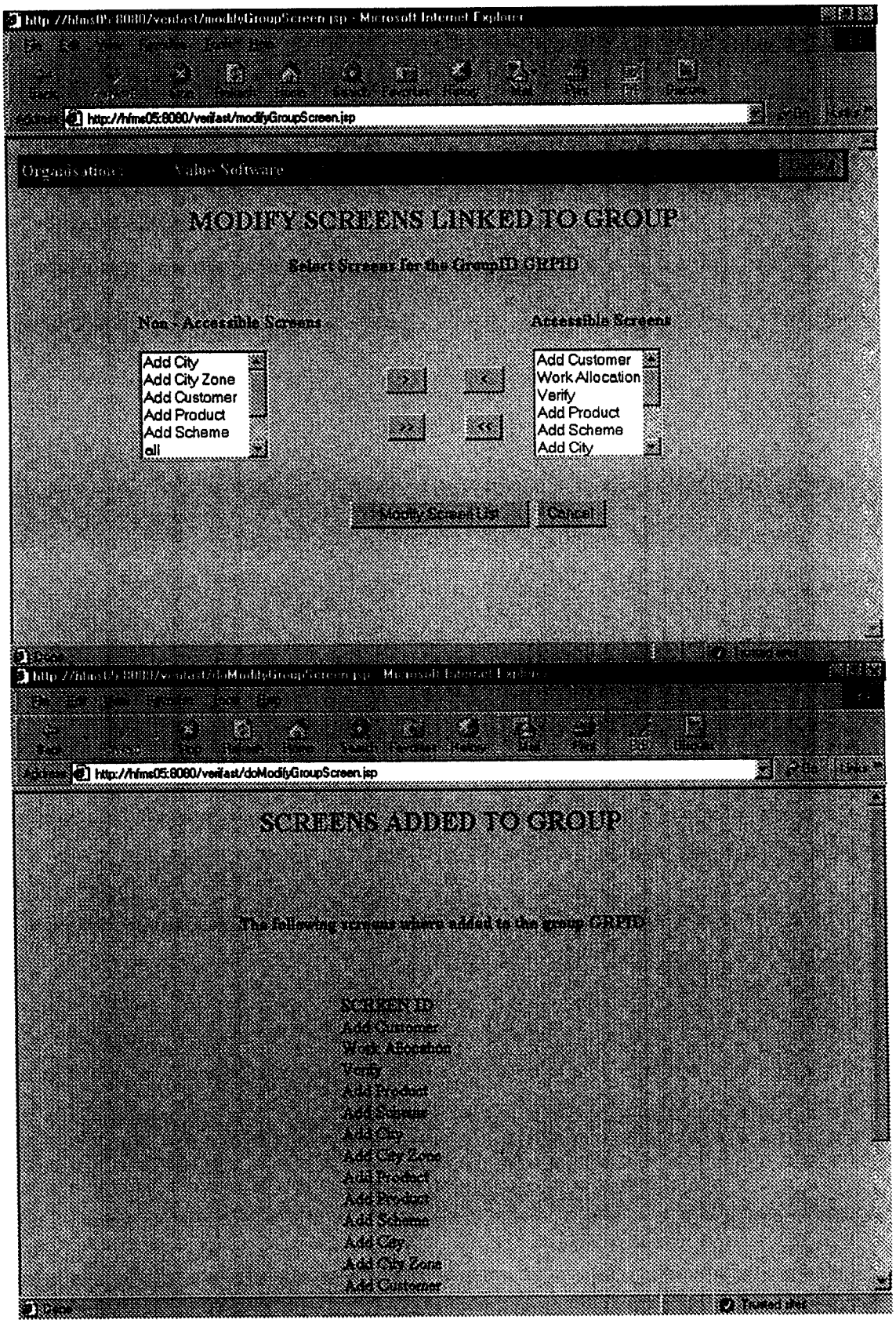
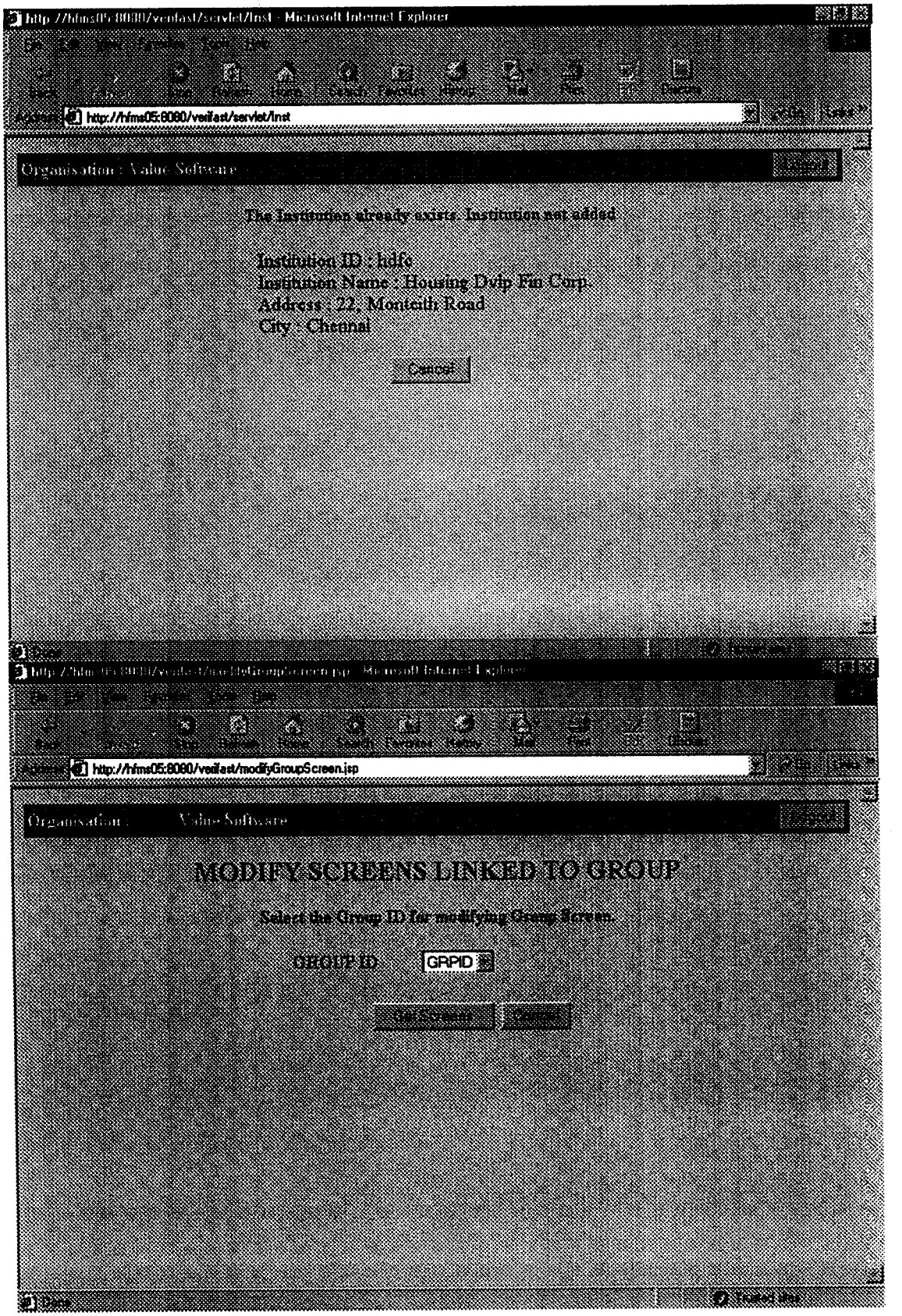
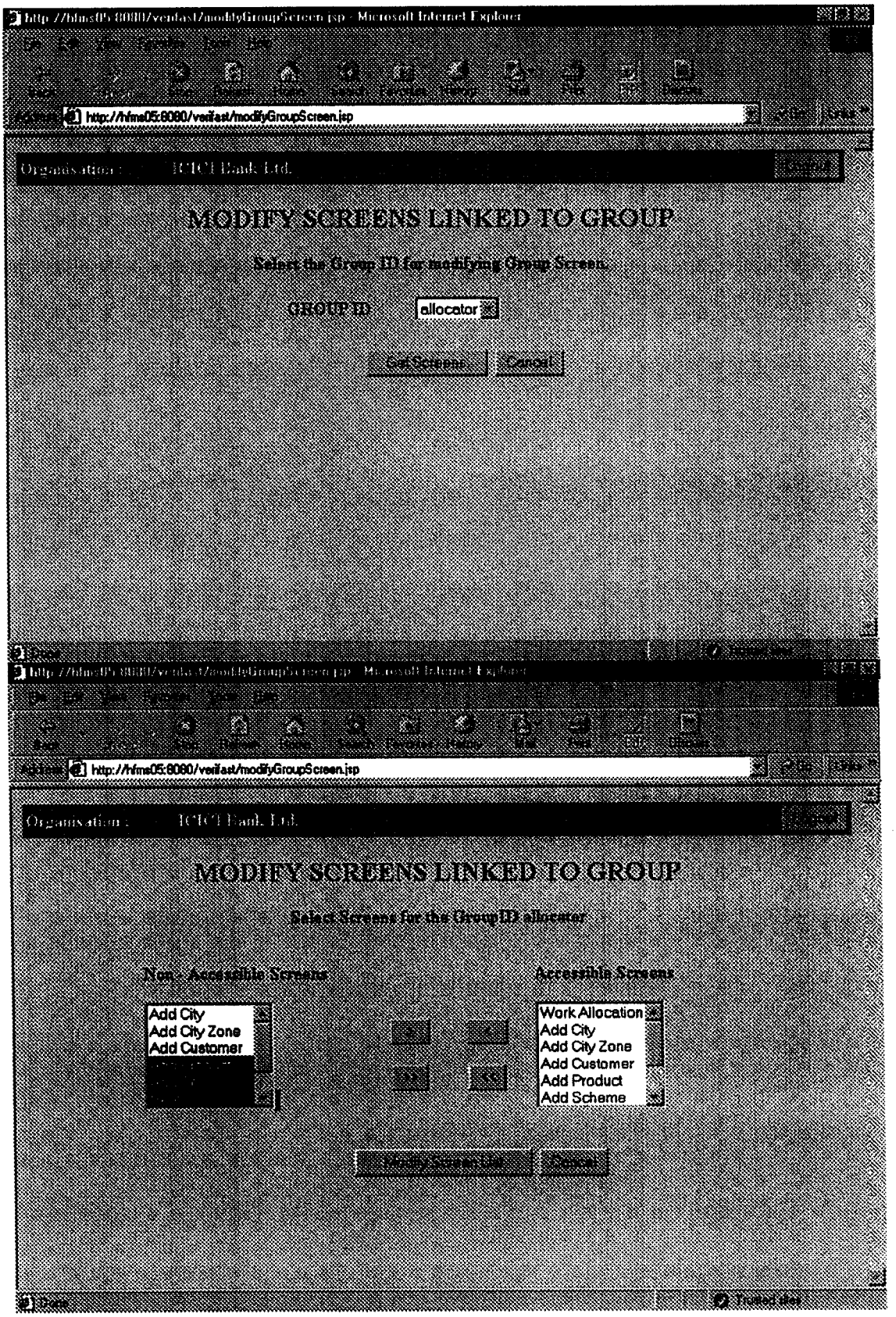
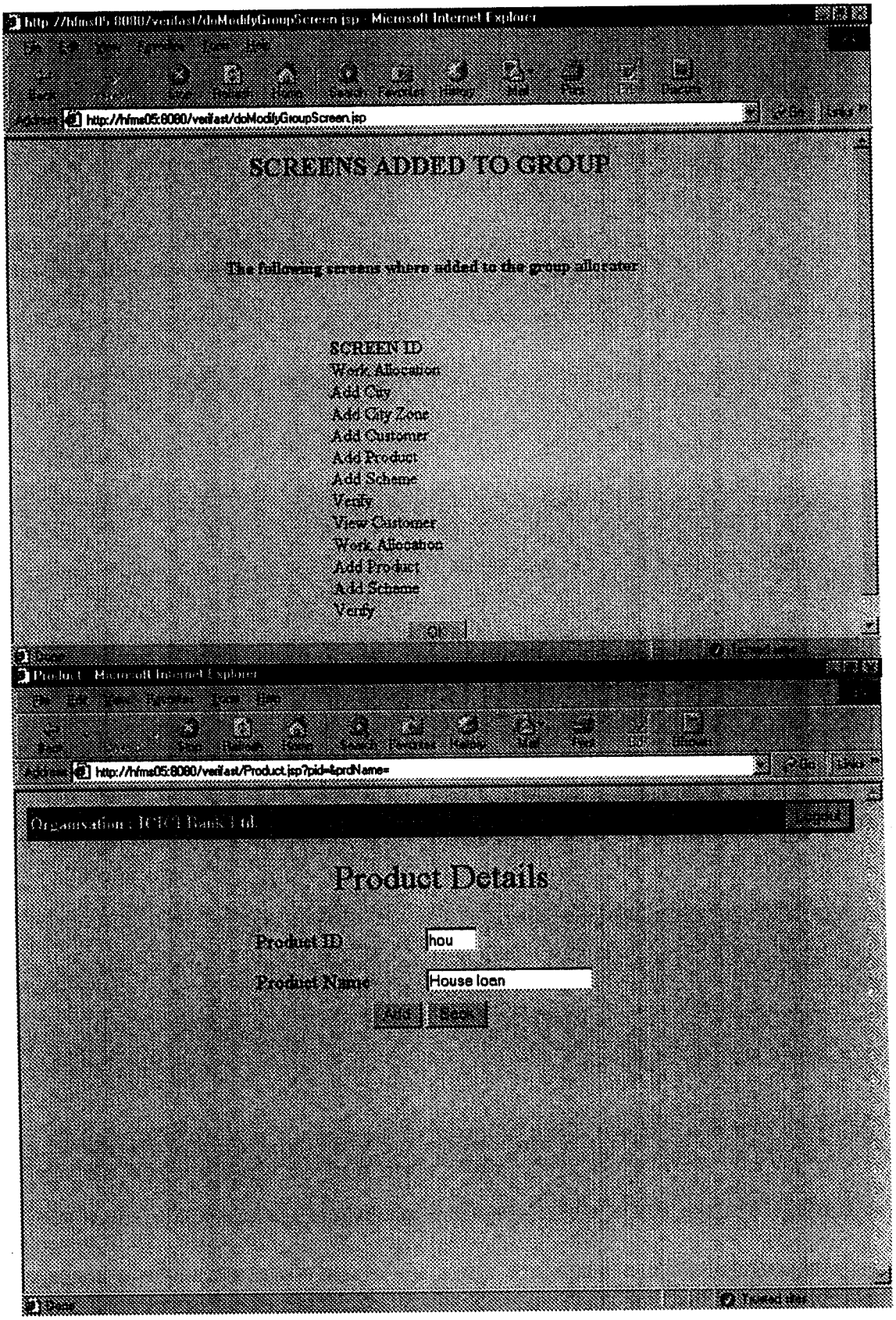
OK
Done
Trusted sites

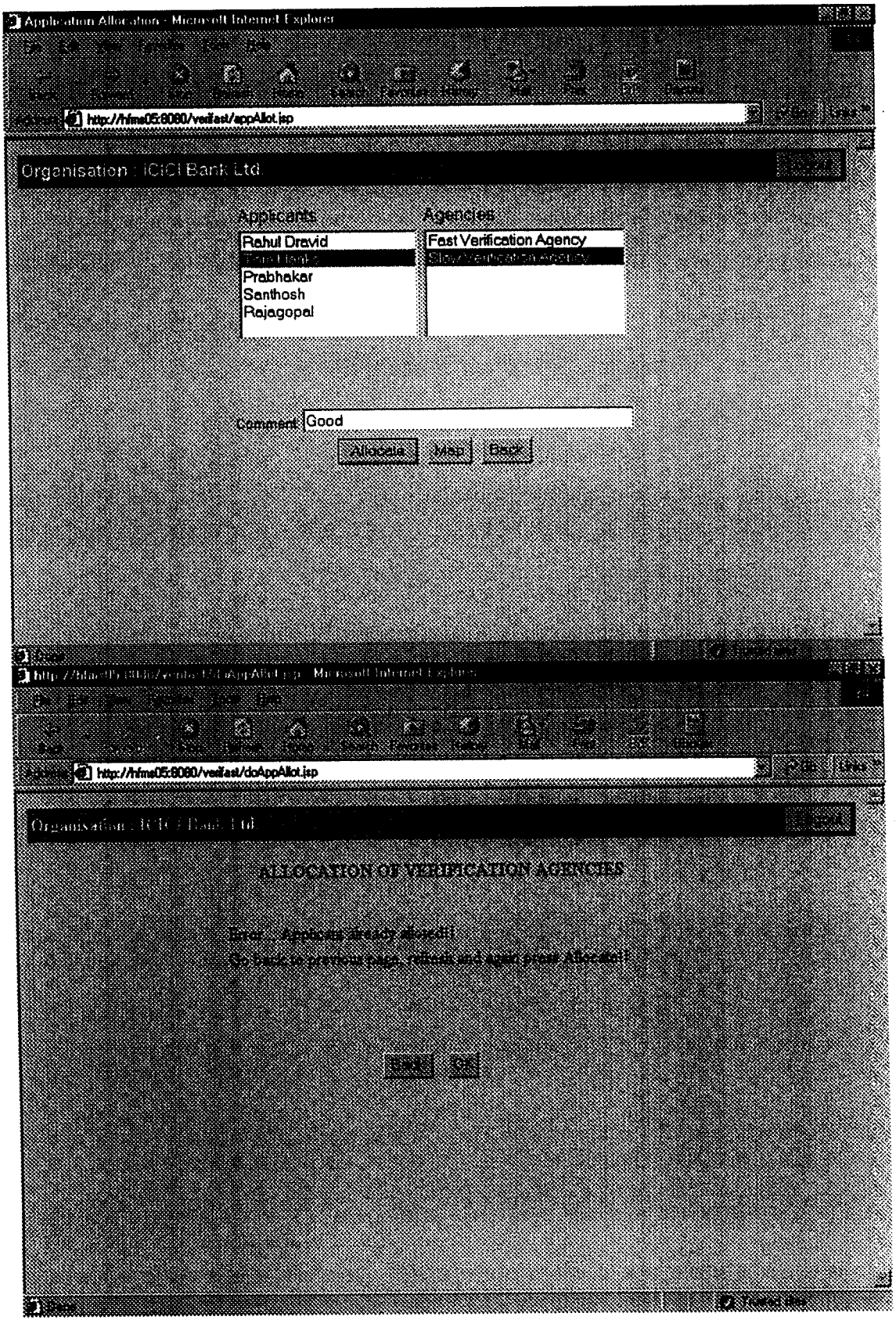

History Verifast - Microsoft Internet Explorer
http://hfms05:8080/verifast/history.jsp
Organisation : ICICI Bank Ltd.
Logout
Select Applicants' No to view the History!!
Tracking Application
Application No: icici003
ICICI001 - Santhosh
ICICI002 - Prabhakar
ICICI003 - Tom Hanks
ICICI004 - Rahul Dravid
100 - Rajagopal
Select Application No:
Back
View History
http://hfms05:8080/verifast/doHistory.jsp
Tracking Application
Application No: icici003
Customer Name: Tom Hanks
Residence Address1: 12,oliver road,Alwarpet
Residence Address2: Null
City: Chennai
PinCode: 600018
Phone: 54482329
Date/Time
Comment
Comment By
Status
2003-02-28 16:41:30
Should go for it
admin
Customer request entered into the system..
2003-03-04 10:48:08
dfjkfgkdsgb
admin
Application Accepted
2003-02-28 16:50:39
Released all for allocation to xlow
admin
Allocated to verification agency
2003-03-10 17:21:55
hhh
admin
Allocated to verification agency

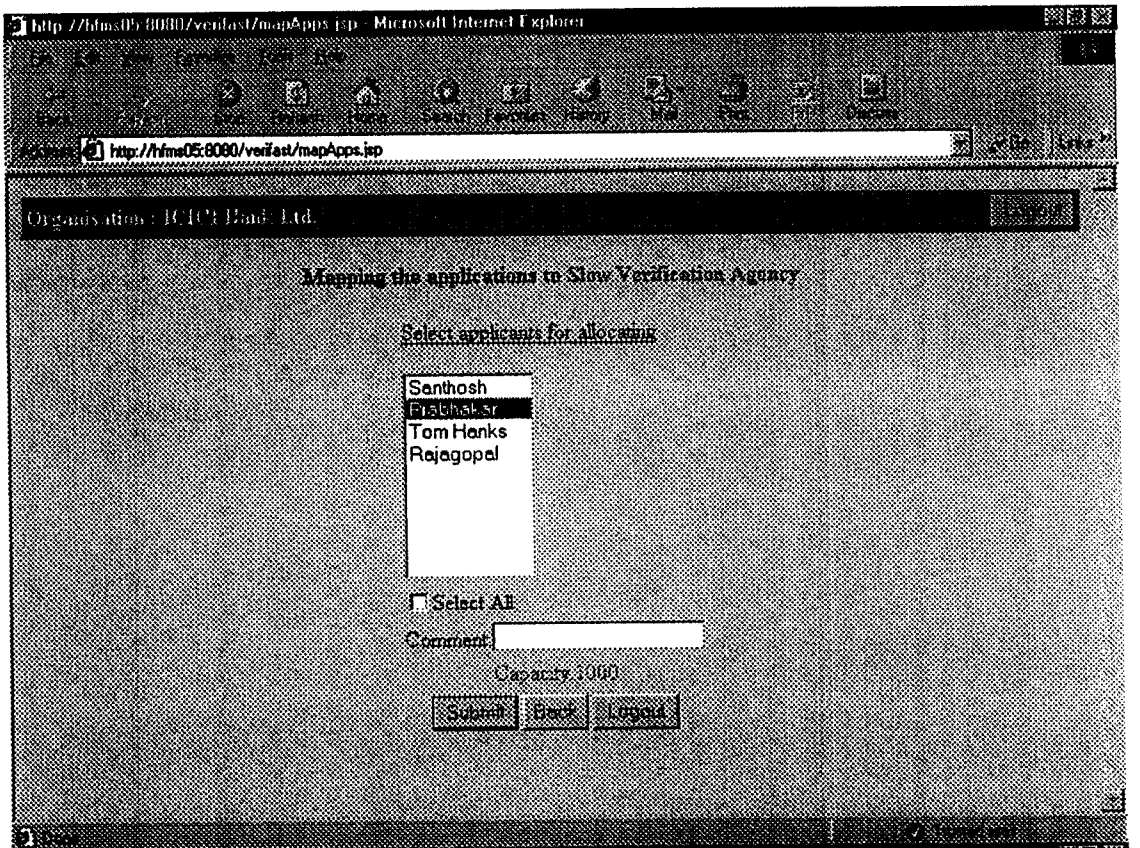

http://hfms05:8080/veilast/modifyGroupScreen.jsp
Organisation : Value Software
MODIFY SCREENS LINKED TO GROUP
Select Screens for the GroupID GRPID
Non - Accessible Screens
Add City
Add City Zone
Add Customer
Add Product
Add Scheme
all
>
<
>>
<<
Accessible Screens
Add Customer
Work Allocation
Verify
Add Product
Add Scheme
Add City
Modify Screen List
Cancel
http://hfms05:8080/veilast/doModifyGroupScreen.jsp
SCREENS ADDED TO GROUP
The following screens where added to the group GRPID
SCREEN ID
Add Customer
Work Allocation
Verify
Add Product
Add Scheme
Add City
Add City Zone
Add Product
Add Product
Add Scheme
Add City
Add City Zone
Add Customer

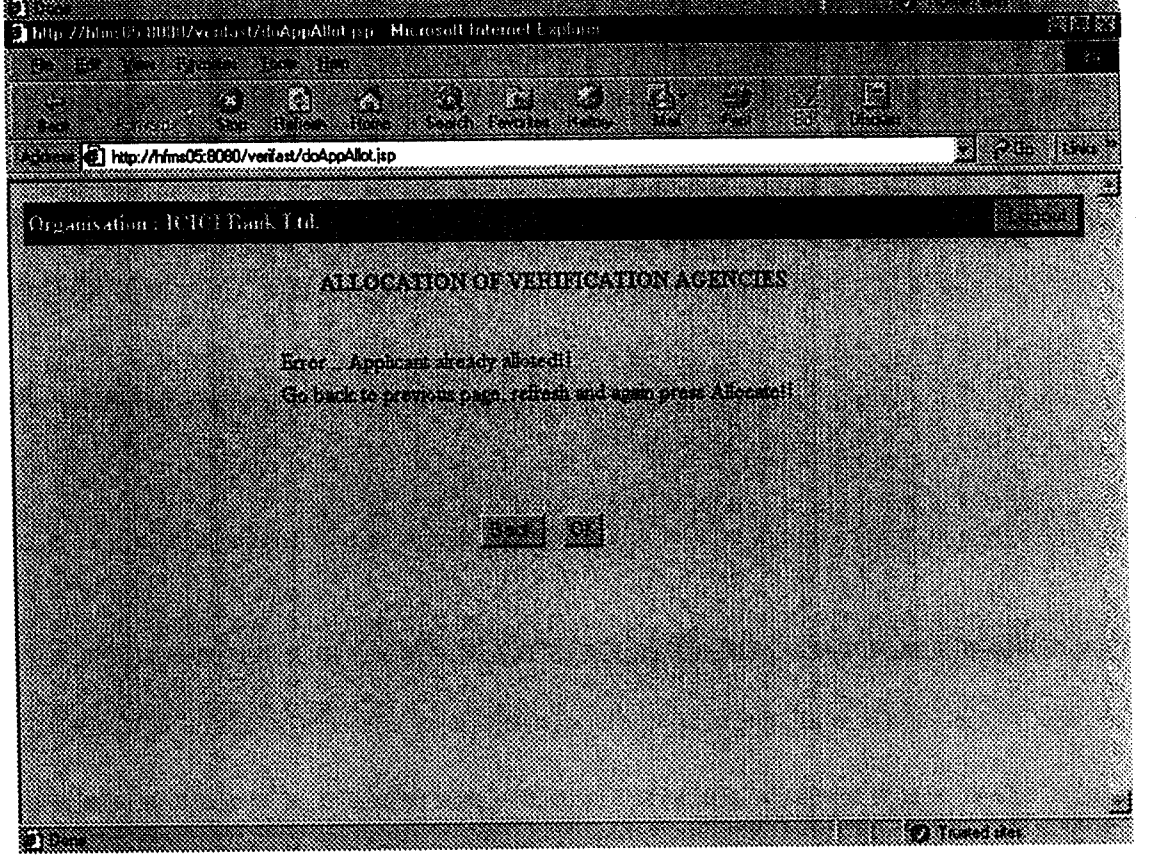

http://hfms05:8080/veilast/servlet/Inst - Microsoft Internet Explorer
http://hfms05:8080/veilast/servlet/Inst
Organisation : Value Software
The Institution already exists. Institution not added
Institution ID : hdfc
Institution Name : Housing Dvlp Fin Corp.
Address : 22, Monteith Road
City : Chennai
Cancel
http://hfms05:8080/veilast/modifyGroupScreen.jsp
Organisation : Value Software
MODIFY SCREENS LINKED TO GROUP
Select the Group ID for modifying Group Screen.
GROUP ID
GRPID
Cancel

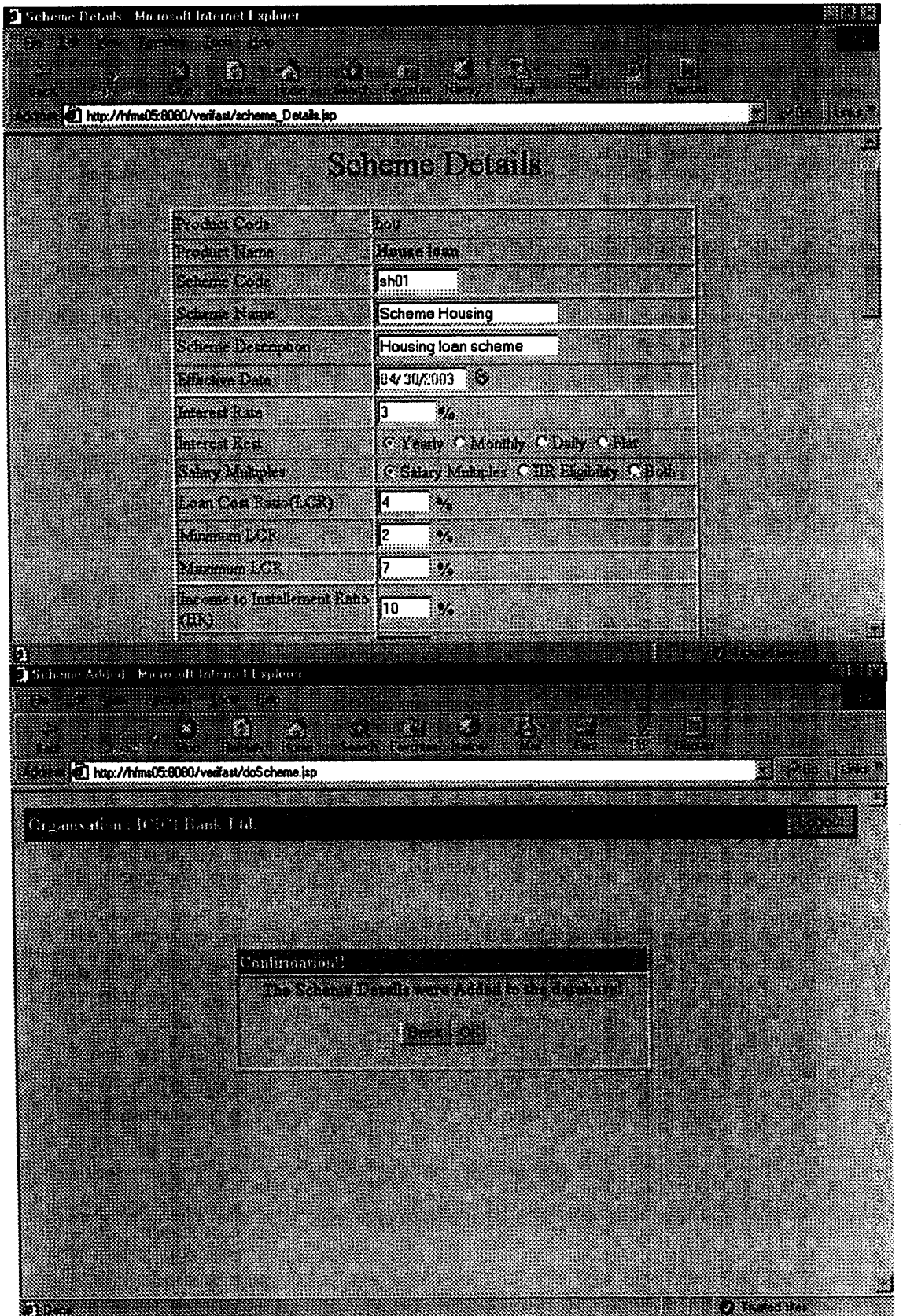

http://hfms05:8080/veritast/modifyGroupScreen.jsp
Organisation : ICICI Bank Ltd.
MODIFY SCREENS LINKED TO GROUP
Select the Group ID for modifying Group Screen.
GROUP ID
allocator
Get Screens
Cancel
http://hfms05:8080/veritast/modifyGroupScreen.jsp
Organisation : ICICI Bank Ltd.
MODIFY SCREENS LINKED TO GROUP
Select Screens for the GroupID allocator
Non - Accessible Screens
Add City
Add City Zone
Add Customer
Accessible Screens
Work Allocation
Add City
Add City Zone
Add Customer
Add Product
Add Scheme
Modify Screen List
Cancel

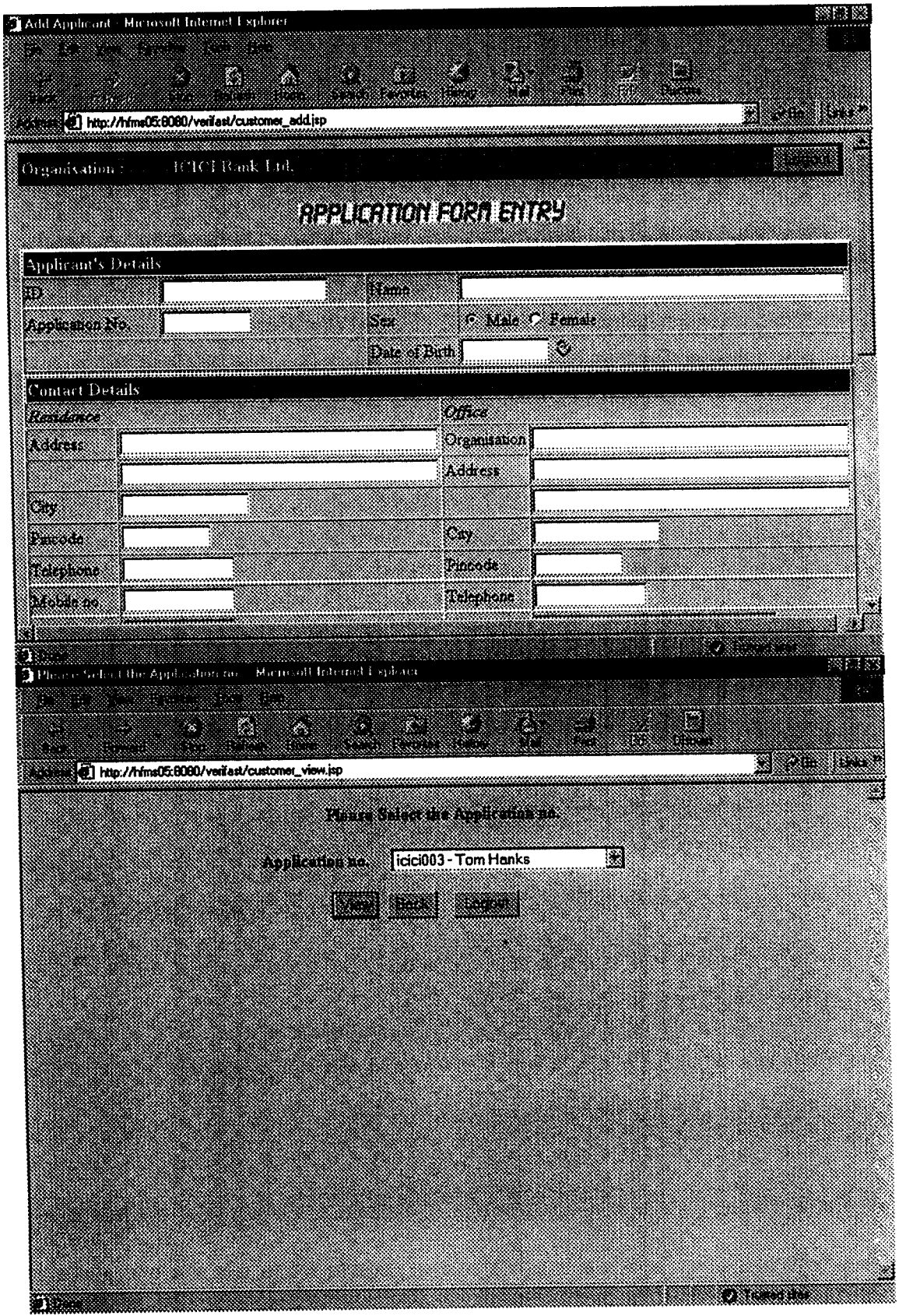

http://hfms05:8080/verifast/doModifyGroupScreen.jsp - Microsoft Internet Explorer
Address http://hfms05:8080/verifast/doModifyGroupScreen.jsp
SCREENS ADDED TO GROUP
The following screens where added to the group allocater
SCREEN ID
Work Allocation
Add City
Add City Zone
Add Customer
Add Product
Add Scheme
Verify
View Customer
Work Allocation
Add Product
Add Scheme
Verify
OK
Product - Microsoft Internet Explorer
Address http://hfms05:8080/verifast/Product.jsp?pid=&prdName=
Organisation : ICICI Bank Ltd
Product Details
Product ID
hou
Product Name
House loan
Add
Back
Done
Trusted sites

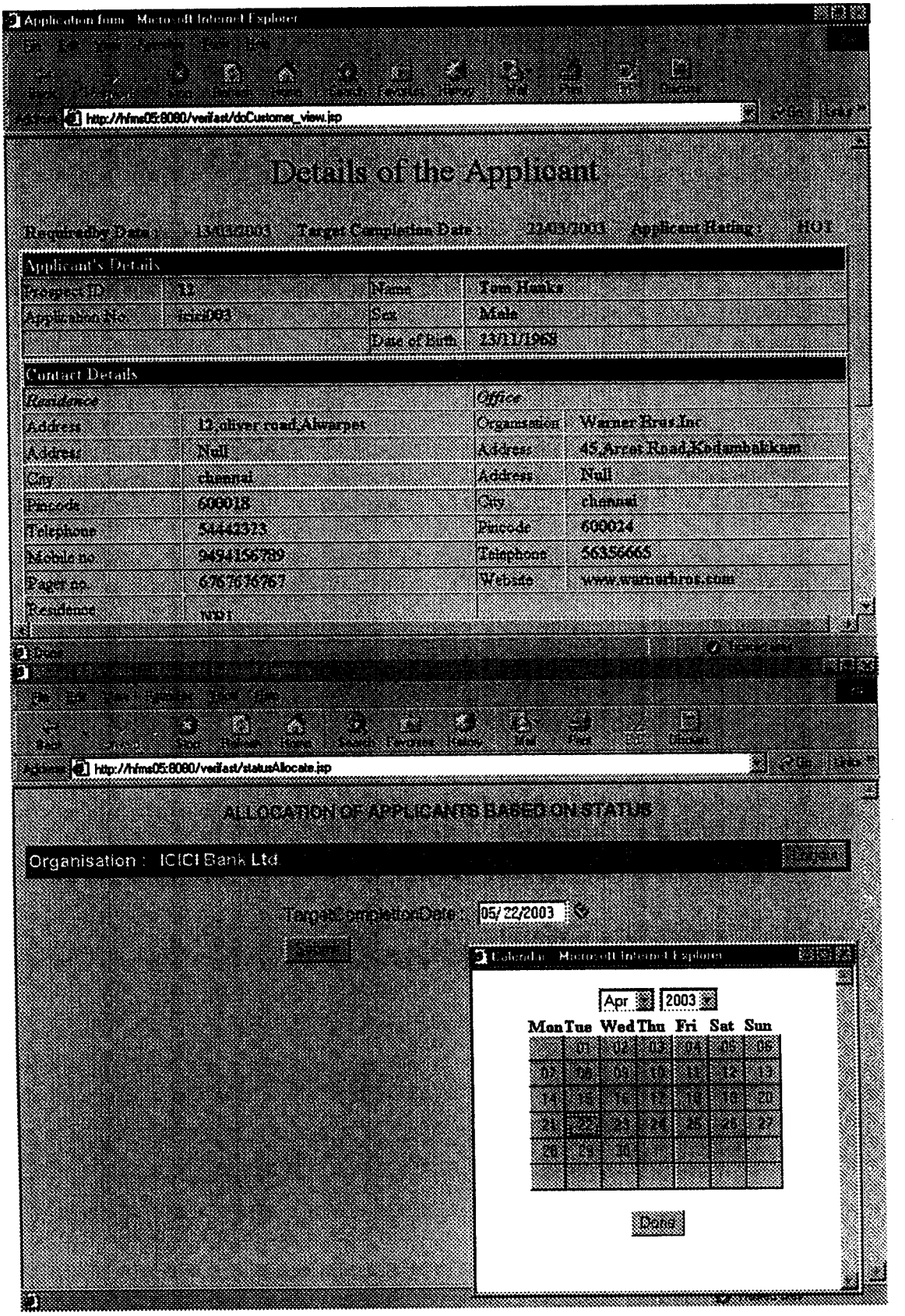

Application Allocation - Microsoft Internet Explorer
http://hfme05:8080/verifast/appAllot.jsp
Organisation : ICICI Bank Ltd.
Applicants
Agencies
Rahul Dravid
Fast Verification Agency
Prabhakar
Santhosh
Rajagopal
Comment
Good
Allocate
Map
Back
http://hfme05:8080/verifast/doAppAllot.jsp
ALLOCATION OF VERIFICATION AGENCIES
Error : Applicant already allocated!
Go back to previous page, refresh and again press Allocate!
Back
OK

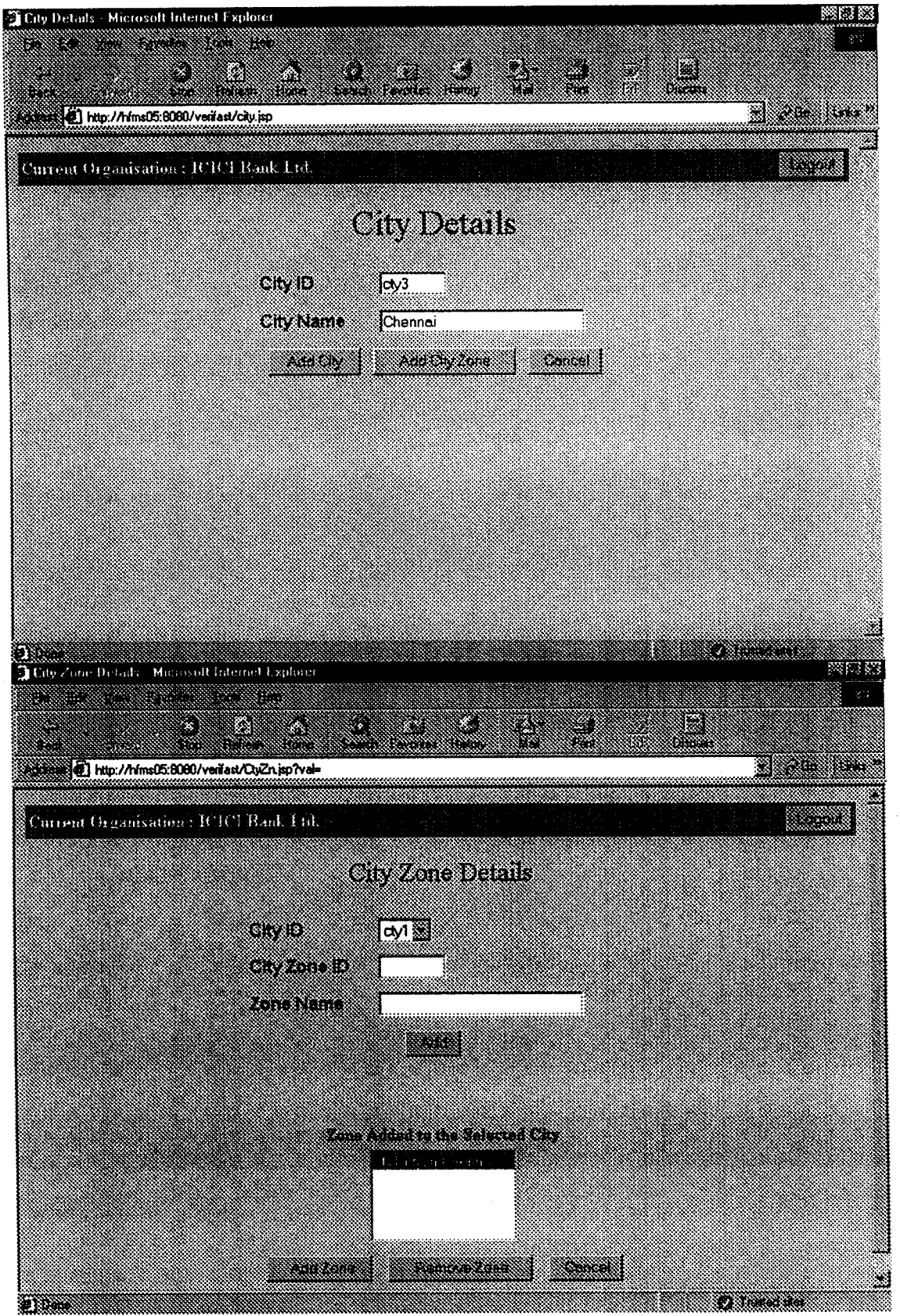

Address http://hfms05:8080/verifast/mapApps.jsp
Organisation : ICICI Bank Ltd.
Mapping the applications to Slow Verification Agency
Select applicants for allocation
Santhosh
Prabhakar
Tom Hanks
Rajagopal
Select All
Comment
Capacity 1000
Submit
Back
Logout

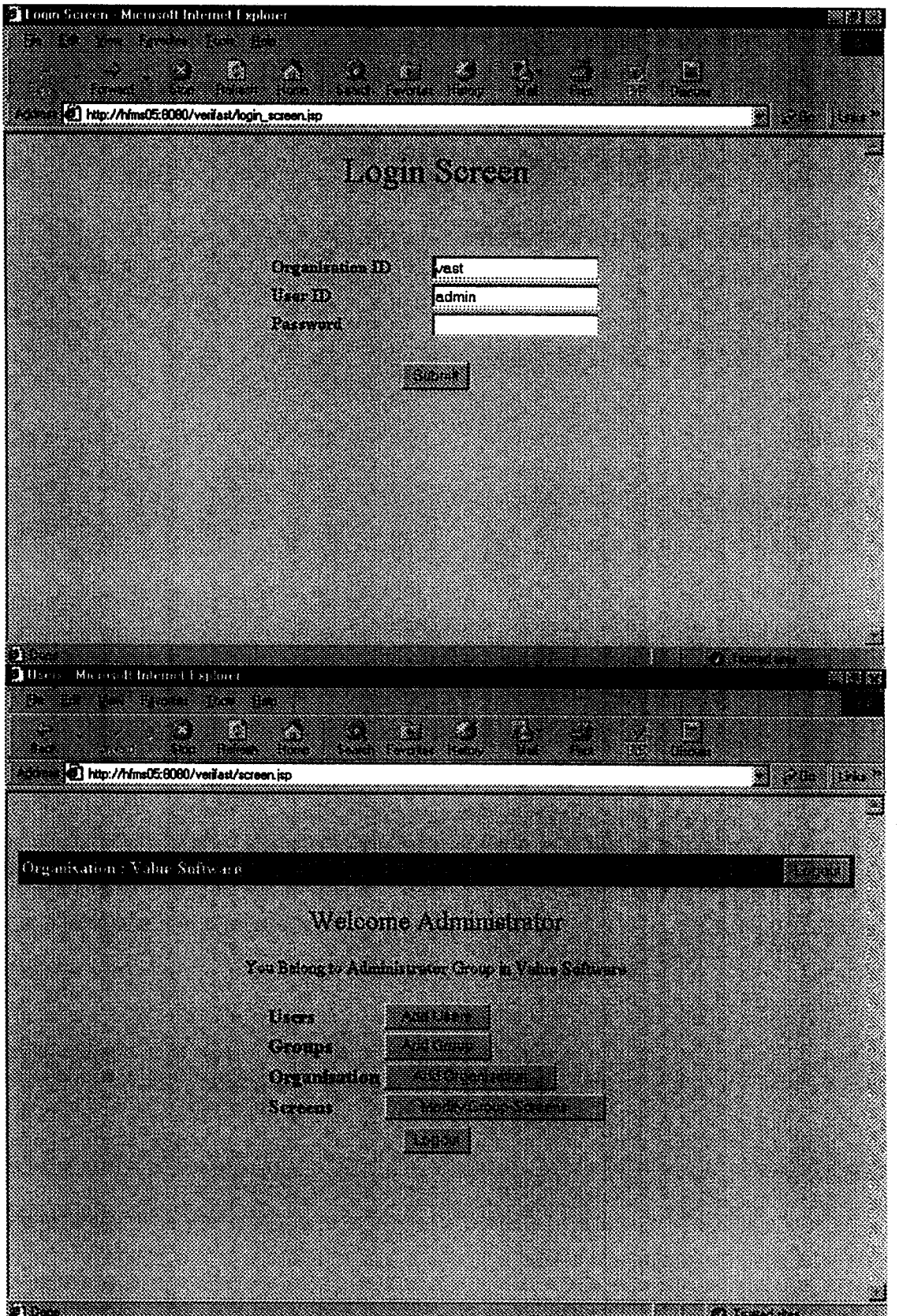

Address http://hfms05:8080/verifast/doAppAllot.jsp
Organisation : ICICI Bank Ltd.
ALLOCATION OF VERIFICATION AGENCIES
Error... Applicant already allocated!
Go back to previous page, refresh and again press Allocate!!
Back
OK

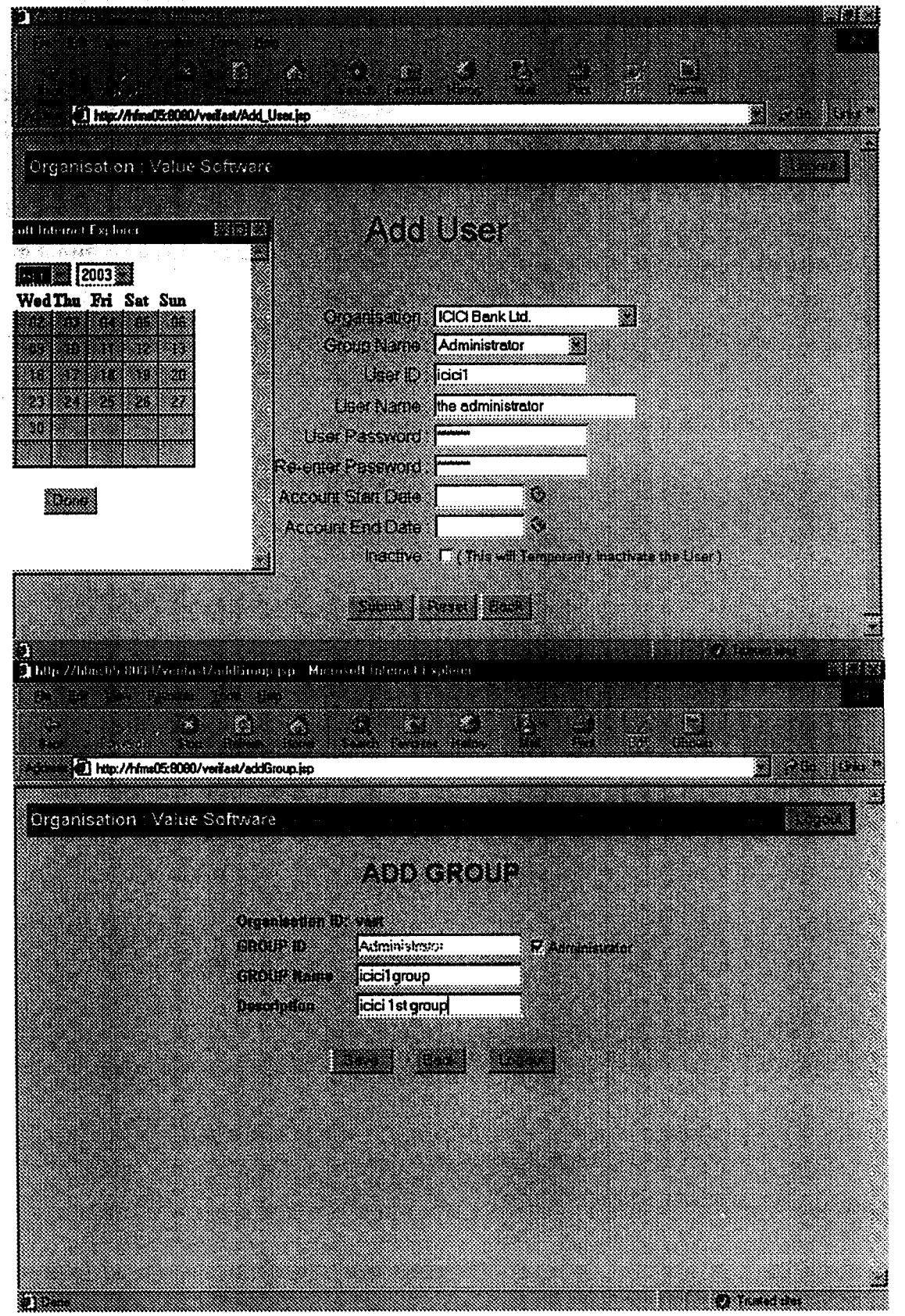

Scheme Details - Microsoft Internet Explorer
http://hfms05:8080/verifast/scheme_Details.jsp
Scheme Details
Product Code
hou
Product Name
House loan
Scheme Code
sh01
Scheme Name
Scheme Housing
Scheme Description
Housing loan scheme
Effective Date
04/30/2003
Interest Rate
3
%
Interest Rest
Yearly
Monthly
Daily
Flat
Salary Multiples
Salary Multiples
IIR Eligibility
Both
Loan Cost Ratio(LCR)
4
%
Minimum LCR
2
%
Maximum LCR
7
%
Income to Installement Ratio (IIR)
10
%
Scheme Added - Microsoft Internet Explorer
http://hfms05:8080/verifast/doScheme.jsp
Organisation : ICICI Bank Ltd.
Logout
Confirmation!!
The Scheme Details were Added to the database!
Back
OK
Done
Trusted sites

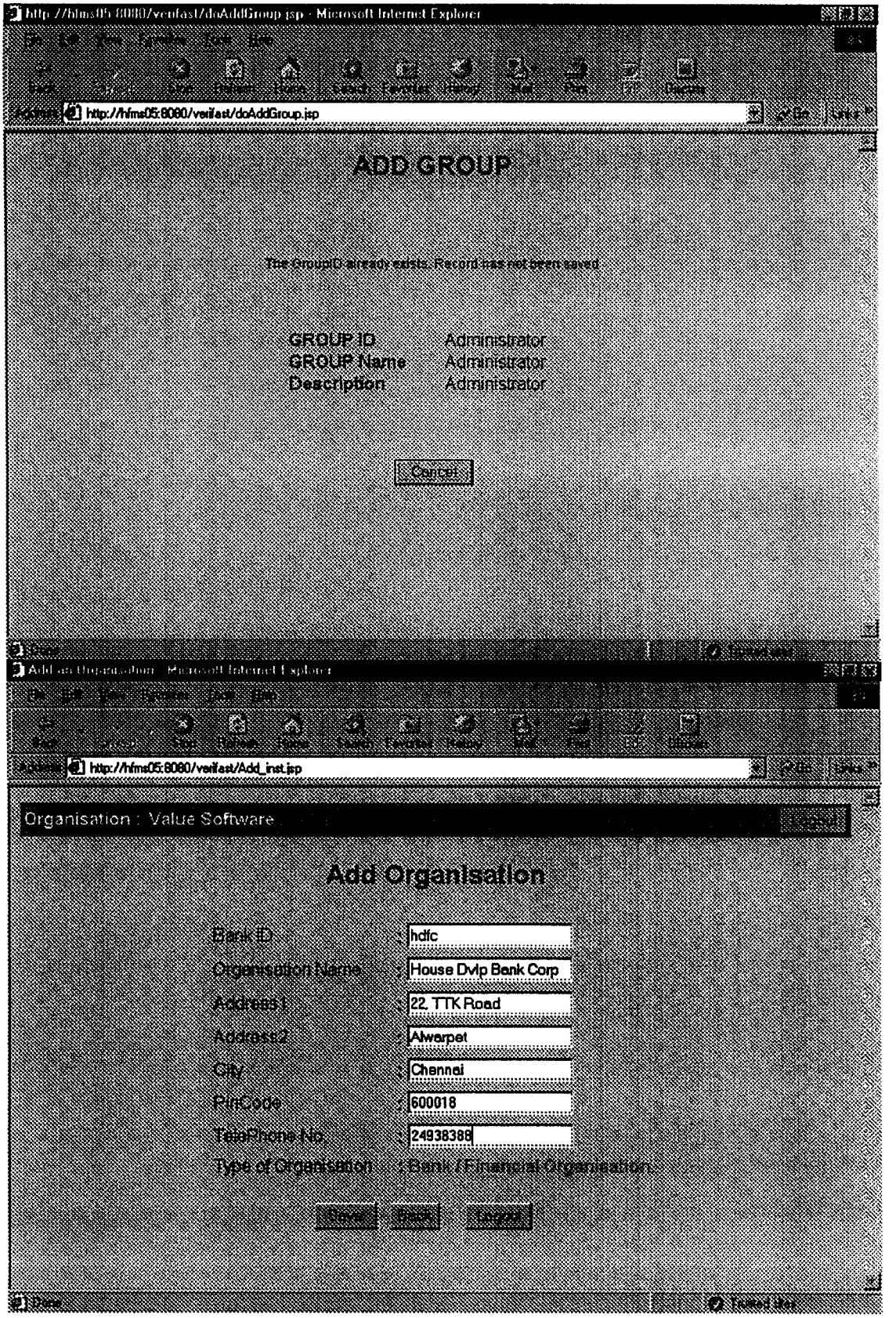

Add Applicant - Microsoft Internet Explorer
http://hfme05:8080/verifast/customer_add.jsp
Organization : ICICI Bank Ltd.
Logout
APPLICATION FORM ENTRY
Applicant's Details
ID
Name
Application No.
Sex
Male
Female
Date of Birth
Contact Details
Residence
Office
Address
Organisation
Address
City
Pincode
City
Telephone
Pincode
Mobile no
Telephone
Please Select the Application no - Microsoft Internet Explorer
http://hfme05:8080/verifast/customer_view.jsp
Please Select the Application no.
Application no.
icici003 - Tom Hanks
View
Back
Logout


Application form - Microsoft Internet Explorer
http://hfms05:8080/veifast/dcCustomer_view.jsp
Details of the Applicant
Requiredby Date : 13/02/2003 Target Completion Date : 23/03/2003 Applicant Rating : HOT
Applicant's Details
Prospect ID : 32
Name : Tom Hanks
Application No : icici003
Sex : Male
Date of Birth : 23/11/1965
Contact Details
Residence
Address : 12,oliver road,Alwarpet
Address : Null
City : chennai
Pincode : 600018
Telephone : 54442323
Mobile no : 9494156789
Pager no : 676676767
Residence : null
Office
Organisation : Wagner Bros Inc
Address : 45,Arcot Road,Kodambakkam
Address : Null
City : chennai
Pincode : 600024
Telephone : 56356665
Website : www.wagnerbros.com
http://hfms05:8080/veifast/statusAllocate.jsp
ALLOCATION OF APPLICANTS BASED ON STATUS
Organisation : ICICI Bank Ltd
Target Completion Date : 05/22/2003
Done
Apr 2003
Mon Tue Wed Thu Fri Sat Sun
Done


City Details - Microsoft Internet Explorer
http://hfms05:8080/verifast/city.jsp
Current Organisation : ICICI Bank Ltd.
Logout
City Details
City ID
city3
City Name
Chennai
Add City
Add City Zone
Cancel
City Zone Details - Microsoft Internet Explorer
http://hfms05:8080/verifast/CtyZn.jsp?val=
Current Organisation : ICICI Bank Ltd.
Logout
City Zone Details
City ID
city1
City Zone ID
Zone Name
Add
Zone Added to the Selected City
Add Zone
Remove Zone
Cancel


Login Screen - Microsoft Internet Explorer
http://hfms05:8080/verifast/login_screen.jsp
Login Screen
Organization ID
vast
User ID
admin
Password
Submit
Users - Microsoft Internet Explorer
http://hfms05:8080/verifast/screen.jsp
Organization : Value Software
Logout
Welcome Administrator
You Belong to Administrator Group in Value Software
Users
Add Users
Groups
Add Group
Organization
Add Organization
Screens
Logout


http://hfma05:8080/verifast/Add_User.jsp
Organisation : Value Software
Add User
2003
Wed Thu Fri Sat Sun
Done
Organisation
ICICI Bank Ltd.
Group Name
Administrator
User ID
icici1
User Name
the administrator
User Password
Re-enter Password
Account Start Date
Account End Date
Inactive
(This will Temporarily Inactivate the User)
Submit
Reset
Back
http://hfma05:8080/verifast/addGroup.jsp
Organisation : Value Software
ADD GROUP
Organisation ID: vlsf
GROUP ID
Administrator
GROUP Name
icici1group
Description
icici 1st group
Save
Reset
Delete


http://hfms05:8080/verifast/doAddGroup.jsp
ADD GROUP
The GroupID already exists. Record has not been saved
GROUP ID Administrator
GROUP Name Administrator
Description Administrator
Cancel
http://hfms05:8080/verifast/Add_inst.jsp
Organisation : Value Software
Logout
Add Organisation
Bank ID : hdfc
Organisation Name : House Dvlp Bank Corp
Address1 : 22, TTK Road
Address2 : Alwarpet
City : Chennai
PinCode : 600018
TelePhone No. : 24938388
Type of Organisation : Bank / Financial Organisation
Reset
Back
Logout

Database design view detail for Agency:

AgentMaster:

Field Name	Data Type	Field Size	Description
AgencyID	Text	5	ID of the agency
AgentID	Text	50	ID of the agent
AgentName	Text	30	Name of the agent
DOB	Date/Time	8	Date of birth of Agent
Sex	Text	1	Sex of the agent
Address1	Text	30	First address of the agent
Address2	Text	30	Second address of the agent
City	Text	15	Residing city of agent
PinCode	Number	4	Resident pin code
PhoneNo	Text	50	Phone no. of agent
MobileNo	Text	50	Mobile no. of agent
Active	Yes/No	2	Agent is activated or deactivated for the operati
Deviceno	Number	4	Device no. of agent
InsIdFlag	Text	1	Institution ID Flag of agent
SuperInsID	Text	5	Super Institution ID Flag of agent
Capacity	Number	4	No. of applicants that can be processed by the agent

ApplicantDetE:

Field Name	Data Type	Field Size	Description
CustID	AutoNumber	4	ID of Customer
AppnNo	Text	10	Application no. of customer
CustName	Text	50	Customer name
Sex	Text	1	Sex of the customer
DOB	Date/Time	8	Date of birth of the customer
ResiAdd1	Text	50	First residence address of the customer
ResiAdd2	Text	50	Second residence address of the customer
Resicity	Text	20	Residing city of customer of the customer
Resipin	Text	6	Residency pin code of the customer
ResiPhone	Text	14	Residency phone of the customer
Mobile	Text	15	Mobile number of the customer
Pager	Text	15	Pager number of the customer
EMail	Text	30	E- mail ID of the customer
ResiStatus	Text	1	Residence status of the customer
Occupation	Text	1	Occupation of the customer
Designation	Text	20	Designation of the customer
OfficeName	Text	50	Office name of the customer
OffiAdd1	Text	50	First Office address of the customer
OffiAdd2	Text	50	Second office address of the customer
Officity	Text	20	Location of the office
Offipin	Text	6	Office pin code
OffiPhone	Text	50	Office phone number

OfficeURL	Text	50	Office website URL
OverallExp	Text	2	Over all Experience of the customer
CurEmpExp	Text	2	Current experience in the present office
Qualification	Text	15	Qualification of the customer
MaritStatus	Text	1	Marital status of the customer
DependentC	Text	2	No. of children dependents of the customer
DependentO	Text	2	No. of other dependents of the customer
MthIncome	Text	8	Monthly income of the customer
OthIncome	Text	8	Other income of the customer
MthExp	Text	8	Monthly expenditure of the customer
ProdCode	Text	3	Product code
SchemeCode	Text	4	Scheme code
PropCost	Text	8	Cost of the customer property
LoanReqd	Number	4	Loan required by the customer
LoanTenure	Number	2	Loan period for the clearance of the loan
ReqByDt	Date/Time	8	Required by date for the processing
Status	Text	50	Customer is either allocated or new one
AppnDt	Date/Time	8	Application date of the customer
prspctStatus	Text	1	Prospectus status of the customer
TrgtComptDate	Date/Time	8	Target completion date for the processing
InsID	Text	5	Institution ID

ApplicantDetV:

Field Name	Data Type	Field Size	Description
CustID	Number	4	ID of a customer
AppnNo	Text	10	Application no. of a customer
CustName	Text	50	Name of a customer
Sex	Text	1	Sex of a customer
DOB	Date/time	8	Date of birth of a customer
ResiAdd1	Text	50	First Residence address of a customer
ResiAdd2	Text	50	Second residence address of a customer
Resicity	Text	50	Residing city of a customer
Resipin	Text	50	Residence pin of a customer
ResiPhone	Text	50	Residence phone of a customer
Mobile	Text	50	Mobile no. of a customer
Pager	Text	50	Pager no of a customer
EMail	Text	30	E-mail ID of a customer
ResiStatus	Text	1	Residence status of a customer
Occupation	Text	1	Occupation of a customer
Designation	Text	20	Designation of a customer
OfficeName	Text	50	Office Name of a customer
OffiAdd1	Text	50	First office address of a customer
OffiAdd2	Text	50	Second office address of a customer
Officity	Text	20	City name of the office

ffipin	Text	50	Pin code of the office
ffiPhone	Text	50	Phone number of the office
fficeURL	Text	50	URL of the office website
verallExp	Text	2	Over all experience of the customer
urEmpExp	Text	2	Current experience in the present office
ualification	Text	15	Qualification of the customer
laritStatus	Text	1	Marital status of the customer
ependentC	Text	2	Number of children dependent on customer
ependentO	Text	2	Number of other dependents on customer
thIncome	Number	4	Monthly income of the customer
thIncome	Number	4	Other income of the customer
thExp	Number	4	Monthly expenditure of the customer
rodCode	Text	3	Product code
chemeCode	Text	4	Scheme code
ropCost	Number	4	Cost of the customer property
oanReqd	Number	4	Loan required by the customer
oanTenure	Number	2	Loan period for the clearance of the loan
eqByDt	Date/Time	8	Required by date for the processing
tatus	Text	50	Customer is either allocated or new one
ppnDt	Date/Time	8	Application date of the customer
nsID	Text	5	ID of the institution
APPALLOCDT	Date/Time	8	Application allocation date
TARCOMDT	Date/Time	8	Target completion date
APPSTATUS	Text	1	Status of the application
HotsyncNameResi	Text	50	Name of the agent assigned for residence verification
HotsyncNameOffi	Text	50	Name of the agent assigned for office verifica
TransactionNo	AutoNumber	4	Transaction number
DtofInsertion	Date/Time	8	Date of insertion
TimeofInsertion	Date/Time	8	Time of insertion

pvdetails:

ield Name	**Data Type**	**Field Size**	**Description**
AppnNo	Text	50	Application number of the customer
resilandmark	Text	50	Resident land mark of the customer
housetype	Text	50	Type of house of the customer
resiaccess	Text	50	The residence is easily approachable from: railway station, bus stop, not easily approachable
residetail	Text	50	Details of residence: own, parental, spouse owned, co. provided, rented, leave & license, others
rentpermonth	Number	4	Rent paid per month by the customer
loanonresi	Yes/No	2	loan taken on residence
verifrom	Text	50	Verified from: society name plate, name plate on door, watchman, neighbor

stayincity	Text	4	Number of Years staying in city
stayincurrresi	Text	4	Number of years staying in current residence
resisize	Text	50	Size of the house in square feet: <400, 400 to 800, 800 to 1200, 1200 to 1500, >1500
resilocality	Text	50	Locality of the residence: posh, upper middle class, middle class, lower middle class
interiors	Text	50	interiors of house: well maintained, average maintenance, poorly maintained
assetsvisible	Text	50	Assets visible at home: phone, refrigerator, TV, Music system, cooler, a/c
tolocate	Text	50	How easy to locate the house? easy, difficult or unable to locate
2wvehicle	Text	50	two wheeler: owned, financed or company provided
2wmodel	Text	50	Model name of the two wheeler
2wmfdyear	Text	2	Manufacture year of the two wheeler
car	Text	50	car: owned, financed or company provided
carmaker	Text	50	Manufacturer of the car
carmfdyear	Text	2	Manufacture year of the car
carfinancer	Text	50	Financer of the car
carregno	Text	50	Register number of the car
assets	Text	50	Other assets owned by the applicant
resiagent	Text	50	Name of the agent who did residence verification
offlandmark	Text	50	Land mark of the office
offaccess	Text	50	Easily approachable accessibility of office
customers	Text	50	Customers of the customer business
competitors	Text	50	Competitors of the customer's business
offdetail	Text	50	office/business details: own, spouse or rental
offlocation	Text	50	Location of the office: commercial area, industrial estate, residential or others
offlocality	Text	50	Locality: posh, upper middle class, lower middle class
furnishing	Text	50	Furnishing: well furnished, average furnished, sparely furnished
offsize	Text	50	size of the office in square ft.: >100, 200-1000, 1000-5000, >5000
offassets	Text	50	Assets visible at the time of visit: telephones, computers, fax, photo copier, A/C…..
employees	Number	4	Number of employees visible
activitylvl	Text	50	Level of activity observed in office: high, medium, low, non
obsvfi	Text	10	Observations of fin agency: positive, negative, neutral
fdbckref	Text	250	Feed backs through reference checks
comments	Text	250	Comments of collection in charge
recommend	Text	50	Recommendation of collections in charge: recommended or rejected
offagent	Text	50	Name of the agent who did office verification.
insID	Text	5	ID of the institution

InsMaster:

Field Name	Data Name	Field size	Description
InsID	Text	5	ID of the Organization
Name	Text	30	Name of the Organization
Address1	Text	20	First address of the Organization
Address2	Text	20	Second address of the Organization
City	Text	15	Organization location
PinCode	Text	50	Pin code of the city
PhoneNo	Text	50	Phone number of the organization
NumOfAgents	Number	4	Number of agents of the organization
SuperInsID	Text	5	ID of the super Institution
InsIDFlag	Text	1	Flag of the Institution ID

Users:

Field Name	Data Type	Field Size	Description
UserID	Text	20	ID of the user
GroupID	Text	20	ID of the group
InsID	Text	5	ID of the Institution
UserName	Text	30	Name of the User
Password	Text	20	Password of the user
Start Date	Date/Time	8	Starting date for the user
End Date	Date/Time	8	Ending date for the user
Inactive	Yes/No	2	Active or inactive facility of the user.

WrkDisAgnt:

Field Name	Data Type	Field Size	Description
AgencyID	Text	6	ID of the Agency
AgntResi	Text	50	Residence of the agent
AgntOff	Text	50	Office of the agent
AppnNo	Text	50	Application number of a customer
AppnRtng	Text	1	Rating of the application
AloclDt	Date/Time	8	Allocation date of the application for a customer
ReqByDt	Date/Time	8	Required by date of the application for a customer
ProdCode	Text	20	Product code
AppnName	Text	30	Application Name
TarComDt	Date/Time	8	Target completion date of a application
InsID	Text	5	Institution ID
Status	Text	1	Status of the application
Comment	Text	200	Comment for the processing of the application

Database design view detail:

1.AgencyScreens:

Field Name	Data Type	Field Size	Description
ScreenID	Text	20	ID of screen selected
InsID	Text	5	ID of the institution.

2.AgentMaster:

Field Name	Data Type	Field Size	Description
AgencyID	Text	5	ID of the Agency.
AgentID	Text	50	ID of the Agent.
AgentName	Text	30	Name of the agent.
DOB	Date/Time	8	Date of birth of agent.
Sex	Text	1	Sex of the agent.
Address1	Text	30	Address1 of the agent.
Address2	Text	30	Address2 of the agent.
City	Text	15	City where the agent resides.
PinCode	Number	4	Pincode of the city.
PhoneNo	Text	50	Phone no. of agent.
MobileNo	Text	50	Mobile no. of the agent.
Active	Yes/No	2	Agent set active or not.
Deviceno	Number	4	Device no. of the agent.

3.AgncProfile:

Field name	Data Type	Field Size	Description
InsID	Text	5	ID of the institution.
AssndPINs	Text	100	Assigned PIN of the agency.
Capacity	Number	4	No of applicants the agency can handle.
SuperInsID	Text	5	SuperInsID for the agency.

4.AgScrList:

Field Name	Data Type	Field Size	Description
ScreenID	Text	20	ID of screen selected.
ScreenUser	Text	1	Screen allocated to user.
InsID	Text	5	ID of the institution.
Allocated	Yes/No	2	Screen allocated to user.

5.ApplicantDetAcpt:

Field Name	Data Type	Field Size	Description
CustID	Number	4	ID of the customer.
AppnNo	Text	10	Application no. of the customer.
CustName	Text	50	Name of the customer.
Sex	Text	1	Gender of the customer.
DOB	Date/Time	8	Date of birth of the customer.
ResiAdd1	Text	50	Resident address1 of the customer.
ResiAdd2	Text	50	Resident address2 of the customer.
Resicity	Text	20	City where the customer resides.

Resipin	Text	6	Pincode of the city.
ResiPhone	Text	14	Residence phone no. of customer.
Mobile	Text	15	Mobile no. of customer.
Pager	Text	15	Pager no. of customer.
EMail	Text	30	E-mail address of the customer.
ResiStatus	Text	1	Status assigned to the customer residence.
Occupation	Text	1	Occupation of the customer.
Designation	Text	20	Designation if the customer.
OfficeName	Text	50	Name of the customer's office.
OffiAdd1	Text	50	Office address1 of the customer.
OffiAdd2	Text	50	Office address1 of the customer.
Officity	Text	20	City where customer office is located.
Offipin	Text	6	Pincode of the customer office.
OffiPhone	Text	50	Phone no. of customers office.
OfficeURL	Text	50	Website of the customers' office.
OverallExp	Number	2	Overall experience of the customer.
CurEmpExp	Number	2	Current experience of the customer.
Qualification	Text	15	Academic Qualification of the customer.
MaritStatus	Number	1	Marital status of the customer.
DependentC	Number	2	Children dependant on the customer.
DependentO	Number	2	Others dependant on the customer.
MthIncome	Number	4	Monthly income of the customer.
OthIncome	Number	4	Other income of the customer.
MthExp	Number	4	Monthly expenses of the customer.
ProdCode	Text	3	Product code for the product selected.
SchemeCode	Text	4	Scheme code for the scheme selected.
PropCost	Number	4	Cost of the customers property.
LoanReqd	Number	4	Loan required by the customer.
LoanTenure	Number	2	Tenure of the loan.
ReqByDt	Date/Time	8	Loan Required by date .
Status	Text	50	Status of the application.
AppnDt	Date/Time	8	Date of the application.

prspctStatus	Text	1	Status of the application prospects.
TrgtComptDate	Date/Time	8	Target completion date for verification.
InsID	Text	5	ID of the institution.

6.ApplicantDetE:

Field Name	Data Type	Field Size	Description
CustID	AutoNumber	4	ID of the customer.
AppnNo	Text	10	Application number.
CustName	Text	50	Name of the customer.
Sex	Text	1	Gender of the customer.
DOB	Date/Time	8	Date of birth of the customer.
ResiAdd1	Text	50	Residence address1 of the customer.
ResiAdd2	Text	50	Residence address1 of the customer.
Resicity	Text	20	City where the customer residence is located.
Resipin	Text	6	Pincode of the customers residence.
ResiPhone	Text	14	Phone no. of customer residence.
Mobile	Text	15	Mobile no. of customer residence.
Pager	Text	15	Pager no. of customer residence.
EMail	Text	30	E-mail address of customer.
ResiStatus	Text	1	Status of customer residence.
Occupation	Text	1	Occupation of the customer.
Designation	Text	20	Designation of the customer.
OfficeName	Text	50	Name of customers office.
OffiAdd1	Text	50	Address1 of customers office.
OffiAdd2	Text	50	Address2 of customers office.
Officity	Text	20	City where the customers office is located.
Offipin	Text	6	Pincode of customers office.
OffiPhone	Text	50	Office phone no. of the customer.
OfficeURL	Text	50	Website of the customers office.
OverallExp	Number	2	Overall experience of the customer.
CurEmpExp	Number	2	Current experience of the customer.
Qualification	Text	15	Qualification of the customer.
MaritStatus	Text	1	Marital status of the customer.
DependentC	Number	2	Children dependant on the customer.
DependentO	Number	2	Others dependent on the customer.
MthIncome	Number	8	Monthly income of the customer.
OthIncome	Number	8	Other incomes of the customer.
MthExp	Number	8	Monthly expenses of the applicant.
ProdCode	Text	3	Product code of the product selected.
SchemeCode	Text	4	Scheme code of the scheme selected.
PropCost	Number	8	Cost of the customers property.
LoanReqd	Number	4	Loan required by the customer.
LoanTenure	Number	2	Tenure of the loan.
ReqByDt	Date/Time	8	Loan required by date.
Status	Text	50	Status of the application.

AppnDt	Date/Time	8	Date of the application.
prspctStatus	Text	1	Status of the application prospects.
TrgtComptDate	Date/Time	8	Target completion date for the applicant verification.
InsID	Text	5	ID of the institution.

7.ApplicantDetV:

Field Name	Data Type	Field Size	Description
CustID	Number	4	ID of the customer.
AppnNo	Text	10	Application number.
CustName	Text	50	Name of the customer.
Sex	Text	1	Gender of the customer.
DOB	Date/Time	8	Date of birth of the customer.
ResiAdd1	Text	50	Residential address1 of the customer.
ResiAdd2	Text	50	Residential address2 of the customer.
Resicity	Text	20	City where the customers residence is located.
Resipin	Text	6	Pincode of the customers residence.
ResiPhone	Text	14	Phone no. of the customers residence.
Mobile	Text	15	Mobile no. of the customer.
Pager	Text	15	Pager no. of the customer.
EMail	Text	30	E-mail address of the customer.
ResiStatus	Text	1	Status of the customers residence.
Occupation	Text	1	Occupation of the customer.
Designation	Text	20	Designation of the customer.
OfficeName	Text	50	Name of customers office.
OffiAdd1	Text	50	Office address1 of the customer.
OffiAdd2	Text	50	Office address2 of the customer.
Officity	Text	20	City where the customers office is located.
Offipin	Text	6	Pincode of the customers office.
OffiPhone	Text	50	Phone no. of the customers office.
OfficeURL	Text	50	Website of the customers office.
OverallExp	Number	2	Overall experience of the customer.
CurEmpExp	Number	2	Current experience of the customer.
Qualification	Text	15	Qualification of the customer.
MaritStatus	Text	1	Marital status of the customer.
DependentC	Number	2	Children dependant on the customer.
DependentO	Number	2	Others dependent on the customer.
MthIncome	Number	4	Monthly income of the customer.
OthIncome	Number	4	Other income of the customer.
MthExp	Number	4	Monthly expenses of the customer.
ProdCode	Text	3	Product Code of the product selected.
SchemeCode	Text	4	Scheme code of the scheme selected.
PropCost	Number	4	Cost of the customers property.
LoanReqd	Number	4	Loan required by the customer.
LoanTenure	Number	2	Tenure if the loan.
ReqByDt	Date/Time	8	Loan required date .
Status	Text	50	Status of the application.
AppnDt	Date/Time	8	Application received date.
InsID	Text	5	ID of the institution.

8.apptrack:

Field Name	Data Type	Field Size	Description
AppnNo	Text	10	Application number.
DATE_TIME	Date/Time	8	Date and time of receiving application.
COMMENT	Memo	536870910	Comments about the application.
COMME_BY	Text	25	Commented by person.
STATUS	Text	50	Status of the application.

9.CityMas:

Field Name	Data Type	Field Size	Description
ORGID	Text	5	ID of the organisation.
CITYID	Text	5	ID of the city.
CITYNAME	Text	35	Name of the city.

10.Cpvdetails:

Field Name	Data Type	Field Size	Description
AppnNo	Text	50	Application Number.
resilandmark	Text	50	Residence landmark.
housetype	Text	50	Type of house.
resiaccess	Text	50	Access to the residence.
residetail	Text	50	Details of residence.
rentpermonth	Number	4	Rent per month for the residence.
loanonresi	Yes/No	2	Has the customer taken loan on residence.
verifrom	Text	50	Verified from: society name plate, name plate on door, watchman, neighbour
stayincity	Number	4	Years of stay in city
stayincurrresi	Number	4	years of current residence
resisize	Text	50	Area in sqare feet: <400, 400 to 800, 800 to 1200, 1200 to 1500, >1500
resilocality	Text	50	Locality of the residence: posh, upper middle class, middle class, lower middle class
interiors	Text	50	interiors of house: well maintained, average maintenance, poorly maintained
assetsvisible	Text	50	Assets visible at home: phone, refrigerator, TV, Music system, cooler, a/c
tolocate	Text	50	How easy to locate the house? easy, difficult, unable to locate
2wvehicle	Text	50	two wheeler: owned, financed, co. provided

2wmodel	Text	50	Model name
2wmfdyear	Number	2	Year of manufacture
car	Text	50	car: owned, financed, co. provided
carmaker	Text	50	Car maker/mode
carmfdyear	Number	2	Year of manufacture
carfinancer	Text	50	financed from?
carregno	Text	50	car registration no.
assets	Text	50	Other assets owned by the applicant
resiagent	Text	50	Name of then agent who did residence verification
offlandmark	Text	50	Land mark observed
offaccess	Text	50	Office easily approachable from: railway station, bus stop, not easily approachable
customers	Text	50	Main customers
competitors	Text	50	main competitors
offdetail	Text	50	Detail of customers office.
offlocation	Text	50	Location of the office: commercial area, industrial estate, residential, others
offlocality	Text	50	Locality: posh, upper middle class, lower middle class
furnishing	Text	50	Furnishing: well furnished, average furnished, sparely furnished
offsize	Text	50	size of the office in square ft.: >100, 200-1000, 1000-5000, >5000
offassets	Text	50	Assets visible at the time of visit: telephones, computers, fax, photo copier, A/C
employees	Number	4	No of employees visible
activitylvl	Text	50	Level of activity observed in office: high, medium, low, non
obsvfi	Text	10	Observations of fi agency: positive, negative, neutral
fdbckref	Text	250	Feed backs thro' ref checks.
comments	Text	250	Comments of collection in charge
recommend	Text	50	Recommendation of collections in charge: recommended, rejected
offagent	Text	50	Name of the agent who did office verification.
insID	Text	5	ID of the institution.

11.Crit_Fields:

Field Name	Data Type	Field Size	Description
FieldName	Text	50	Name of the field
FieldDesc	Text	50	Description of the fields
Criticality	Yes/No	2	Description of the field whether Critical or not Critical

12.CityZoMas:

Field Name	Data Type	Field Size	Description
ORGID	Text	5	ID of the organisation.
CITYID	Text	5	ID of the city.
CIYZOID	Text	5	City zone ID.
ZONENAME	Text	50	Zone name

13.Groups:

Field Name	Data Type	Field Size	Description
GroupID	Text	3	ID of the user group.
GroupName	Text	4	Name of the user group.
Description	Text	30	Description of the user group.
InsID	Text	5	ID of the institution.

14.Group_Screen:

Field Name	Data Type	Field Size	Description
GroupID	Text	20	ID of the user group selected.
ScreenID	Text	20	ID of the screen selected.
InsID	Text	5	ID of the institution.

15.InsMaster:

Field Name	Data Type	Field Size	Description
InsID	Text	5	ID of the institution.
Name	Text	30	Name of the institution.
Address1	Text	20	Address1 of the institution.
Address2	Text	20	Address2 of the institution.
City	Text	15	City where the institution is located.
PinCode	Text	50	Pincode of the city.
PhoneNo	Text	50	Phone no. of the institution.
NumOfAgents	Number	4	Number of agents who belong to the institution.
SuperInsID	Text	5	SuperInsID of the institution.
InsIDFlag	Text	1	Flag for the institution.

16.PasteErrors:

Field Name	Data Type	Field Size	Description
CustID	Text	255	ID of the customer.
AppnNo	Text	255	Application number.
CustName	Text	255	Name of the customer.
Sex	Text	255	Gender of the customer.
DOB	Date/Time		Date of birth of the customer.
ResiAdd1	Text	255	Residence address1 of the customer.
ResiAdd2	Text	255	Residence address2 of the customer.
Resicity	Text	255	City where the residence of customer is located.
ResiPin	Text	255	Pincode of the city.
ResiPhone	Text	255	Phonr no. of customer residence.
Mobile	Text	255	Mobile no. of customer .
Pager	Text	255	Pager no. of the customer
Email	Text	255	Email address of the customer.
ResiStstus	Text	255	Status of customer residence.
Occupation	Text	255	Occupation of the customer.
Designation	Text	255	Designation of the customer.
OfficeName	Text	255	Office name of the customer.
OffiAdd1	Text	255	Office address1 of the customer.
OffiAdd2	Text	255	Office address2 of the customer.
Officity	Text	255	City where the customers office is located.
Offipin	Text	255	Pincode of the city.
Offiphone	Text	255	Phone no. of customer office.
OfficeURL	Text	255	Website of the customers office.
OverallExp	Number	Long Integer	Overall experience of the customer.
CurEmpExp	Number	Integer	Current emp0loyement experience of the customer.
Qualification	Text	255	Qualification of the customer.
MaritStatus	Text	255	Marital status of the customer.
DependentC	Number	Integer	Children dependant on the customer.
DependentO	Number`	Integer	Others dependent on the customer.
MthIncome	Number	Long Integer	Monthly income of the customer.
OthIncome	Number	Long Integer	Other income of the customer.
MthExp	Number	Long integer	Monthly expense of the customer.
ProdCode	Text	255	Product code of the product selected.
SchemeCode	Text	255	Scheme code for the scheme selected.
PropCost	Number	Long Integer	Cost of customer property.
LoanReqd	Number	Long Integer	Loan required by the customer.
LoanTenure	Number	Integer	Tenure of the loan/
ReqByDt	Date/Time		Loan required date for the customer.

Status	Text	255	Status of the application
AppnDt	Date/Time		Application received date.
InsID	Text	255	Id of the institution.

17.ProductMaster:

Field Name	Data Type	Field Size	Description
productID	Text	3	ID of the product.
productName	Text	35	Name of the product.
InsID	Text	5	ID of the institution.

18.Prod_scheme:

Field Name	Data Type	Field Size	Description
ProductID	Text	3	ID of the product.
schemeCode	Text	4	Code of the scheme.
schemeDesc	Text	30	Description f the scheme.
InsID	Text	5	ID of the institution.

19.SchemeMas:

Field Name	Data Type	Field Size	Description
COMPCODE	Text	6	Code of the institution
SCHEMECOD	Text	4	Code of the scheme
ORDER	Number	4	Display order
EFFECTDATE	Number	8	Effective date
SCHEMENAME	Text	22	Name of the scheme
SCHEMEDESC	Text	30	Scheme Description
INTRATE	Text	8	Interest Rate
INTR_REST	Text	1	Interest Rest
SAL_MULTIP	Text	1	Salary Multiples
LCR	Number	4	Loan to Cost Ratio
MINLCR	Number	4	Minimum Loan to Cost Ratio
MAXLCR	Number	4	Maximum Loan to Cost Ratio
IIR	Number	4	Installment to Income Ratio
MINIIR	Number	4	Minimum Installment to Income Ratio
MAXIIR	Number	4	Maximum Installment to Income Ratio
MINLOANAGE	Number	4	Minimum age to avail the loan
MAXLOANAGE	Number	4	Maximum age to avail the loan
MINLOANAMT	Number	4	Minimum loan amount
MAXLOANAMT	Number	4	Maximum loan amount
MINPERIOD	Number	4	Minimum period
MAXPERIOD	Number	4	Maximum period to
ELIGI_RTC	Text	1	Eligibility parameter (Round truncate ceiling)
EMI_RTC	Text	1	Equated monthly income round

			truncate ceiling
EMI1LACRTC	Text	1	Emi for l Lac Parameter
EMI_DECPRE	Number	4	Decimal Precision
ELIDEADRES	Text	1	Eligibility Deadlock Resolution
FLAG	Text	1	Temperary status flag used by front end application
SO_FEE	Text	8	Switch over fee
MINPF	Text	8	Minimum processing fee
MAXPF	Text	8	Maximum processing fee
MINAF	Text	8	Minimum administration fee
MAXAF	Text	8	Maximum administration fee
PROCESDAY	Number	4	Number of days required for the processing by the institution
PRODUCTCOD	Text	2	Product code

20.Screens:

Field Name	Data Type	Field Size	Description
ScreenID	Text	20	ID of the screen
ScreenName	Text	20	Name of the screen
Description	Text	50	Description of the screen
ScreenUser	Text	1	User of the screen

21.Users:

Field Name	Data Type	Field size	Description
UserID	Text	20	ID of the user
GroupID	Text	20	ID of the group
InsID	Text	5	ID of the organisation
UserName	Text	30	Name of the user
Password	Text	20	Password of the user
Start_Date	Text	8	Start date for the user
End_Date	Text	8	End date for the user
Inactive	Text	2	Inactive/Active facility of the user

22.WrkDisVerAgnc:

Field Name	Data Type	Field Size	Description
AppnNo	Text	10	Serial number of the application
CustID	Number	4	ID of the customer
AppnRtng	Text	1	Rating of the application
AppnDt	Text	8	Allocated date of the application
ReqByDt	Text	8	Required by date of the application
CompDt	Text	8	Completion date of the application
Status	Text	1	Status of the application
ProdCode	Text	3	Product code

AppnName	Text	30	Name of the application
ResiAdd1	Text	50	First address of the residence
ResiAdd2	Text	50	First address of the residence
ResiLoc	Text	15	Location of the residence
ResiPin	Text	50	Pin code of the residence
ResiPhone	Text	50	Phone number of the residence
Mobile	Text	15	Mobile number of the applicant
Pager	Text	15	Pager number of the applicant
EMail	Text	30	E- mail ID of the applicant
AgncRes	Text	30	Residence of the agency
OffiName	Text	30	Name of the office
OffiAdd1	Text	50	First address of the office
OffiiAdd2	Text	50	Second address of the office
OffLoc	Text	15	Location of the office
OffiPin	Text	50	Pin code of the office
OffiPhone	Text	50	Phone number of the office
OfficeURL	Text	50	URL of the office website
AgncOff	Text	30	Office of the agency
AllocDt	Text	8	Allocated date
InsID	Text	5	Institution ID

Database design view detail for Collection:

1. Ageing

Field Name	Data Type	Field Size
ORGID	Text	5
LOANREFNO	Text	16
STATUSASON	Date/Time	8
PONEMONDUE	Date/Time	8
PTWOMONDUE	Date/Time	8
PTHRMONDUE	Date/Time	8
PFOUMONDUE	Date/Time	8
PFIVMONDUE	Date/Time	4
ABO5MONDUE	Date/Time	8
TOTOVERDUE	Date/Time	8

2. BillCyMas

Field Name	Data Type	Field Size
ORGID	Text	5
PRODID	Text	5
SCHEMECOD	Text	4
BILLCYCL	Number	2
STARTDAY	Number	2
ENDDAY	Number	2
DELDAYS	Number	2

3. BillTrans

Field Name	Data Type	Field Size
CUSTID	Number	4
LOANREFNO	Text	16
BILLDATE	Date/Time	8
DUEDATE	Date/Time	8
BILLAMT	Date/Time	8
AMTRECD	Date/Time	8
STATUS	Text	1

4. CagntMas

Field Name	Data Type	Field Size
COLAGCYID	Text	5
COLAGNTID	Text	5
COLAGNTNA	Text	20
ORGID	Text	5

5. CtyMas

Field Name	Data Type	Field Size
ORGID	Text	5
CITYID	Text	5
CITYNAME	Text	35

6. CoJoAlHi

Field Name	Data Type	Field Size
ORGID	Text	5
LOANREFNO	Text	16
ALLOTTEDDT	Date/Time	8
COLLAGCYID	Text	5

7. ColCallS

Field Name	Data Type	Field Size
ORGID	Text	5
LOANREFNO	Text	16
SUPORGID	Text	5
COLAGNTID	Text	5
CONTDT	Date/Time	8
CUSTID	Text	15
INITPERS	Text	1
CONTMODE	Text	10
CONTPER	Text	20
RELTOCUS	Text	25
CONTPLAC	Text	25
PTPDATE	Date/Time	8
PTPAMT	Date/Time	8
PTPCONTP	Text	25
PTPCONPE	Text	25
REMSUG	Text	50
ATTRIBREAS	Text	50
CUSTINTENT	Text	5
CUSTBEHA	Text	15
RQSTFOLLUP	Text	50
SUGGFOLLUP	Text	50

8. CollRecd

Field Name	Data Type	Field Size
ORGID	Text	5
LOANREFNO	Text	16
CUSTID	Text	15
PAYMODE	Number	4
DD_CHQNO	Text	15
DD_CHQDT	Date/Time	8
BANKNAME	Text	35
Amount	Text	8
RECDDATE	Date/Time	8
RECDBYAGNT	Text	25

RECDBYORG	Text	35
TRECPTREF	Text	15
REMARKS	Text	100
STATUS	Text	1
RecdTime	Date/Time	8

9. CtyZoMas

Field Name	Data Type	Field Size
ORGID	Text	5
CITYID	Text	5
CIYZOID	Text	5
ZONENAME	Text	50

10. CustMas

Field Name	Data Type	Field Size
ORGID	**Text**	**5**
CUSTID	Text	15
FIRSTNAME	Text	15
LASTNAME	Text	15
SEX	Text	1
DOB	Date/Time	8
RESIADD1	Text	50
RESIADD2	Text	50
RESICITY	Text	30
RESIPIN	Text	6
RESSTATE	Text	15
RESIPHONE	Text	15
RESIMOB	Text	15
RESCITYZON	Text	30
EMPLOYER	Text	50
OFFIADD1	Text	50
OFFIADD2	Text	50
OFFICITY	Text	5
OFFIPIN	Text	6
OFFSTATE	Text	15
OFFIPH	Text	15
OFfCITYZON	Text	30
EMAIL	Text	50

11. DefList

Field Name	Data Type	Field Size
OrgId	Text	5
RUNDATE	Date/Time	8
LoanRefNo	Text	15
CUSTID	Text	15
PRODID	Text	5
SCHEMECOD	Text	5
BILLCYCL	Number	2

MAILADDRPR	Text	1
NOOFODINST	Number	2
EMI	Number	8
TOTALAMTDUE	Number	8
Agentname	Text	50

12. InsMas

Field Name	Data Type	Field Size
ORGID	Text	5
SUPERINSID	Text	5
NAME	Text	50
ADDRESS1	Text	50
ADDRESS2	Text	50
CITYID	Text	5
CITY	Text	15
STATE	Text	15
PINCODE	Text	6
PHONE1	Text	15
PHONE2	Text	15
EMAIL	Text	40
NoOfAgts	Number	2
NoOfDAgt	Number	2

13. LACoJoAl

Field Name	Data Type	Field Size
ORGID	Text	5
LOANREFNO	Text	16
ALLOTEDDT	Date/Time	8
COLLAGCYID	Text	1

14. LoAgcyAs

Field Name	Data Type	Field Size
ORGID	Text	5
CITYID	Text	5
LOGAGCYID	Text	15
PRODID	Text	5
SCHEMECOD	Text	5
BILLCYCL	Number	2
NOOFODINST	Number	2

15. LoAgntAs

Field Name	Data Type	Field Size
ORGID	Text	5
LOGAGNTID	Text	5
COLAGCYID	Text	5
PRODID	Text	5
SCHEMECOD	Text	5

BILLCYCL	Number	2
NOOFODINST	Number	2
CITYID	Text	5
CITYZONEID	Text	5

16. LoanRMas

Field Name	Data Type	Field Size
ORGID	Text	5
BRANCHID	Text	5
LOANREFNO	Text	15
CUSTID	Number	4
MAILADDRPR	Text	1
PRODID	Text	5
SCHEMECOD	Text	4
LNDISBDT	Date/Time	8
BILLCYCl	Number	2
LNAMOUNT	Number	8
LNTENURE	Number	2
EMI	Number	8

17. LoPhAgcy

Field Name	Data Type	Field Size
ORGID	Text	5
CITYID	Text	5
LOGAGCYID	Text	15
COLLAGCYID	Text	5

18. LOPhAgnt

Field Name	Data Type	Field Size
ORGID	Text	5
COLAGCYID	Text	5
LOGAGNTID	Text	5
COLAGNTID	Text	5

19. ProdMas

Field Name	Data Type	Field Size
ORGID	**Text**	**5**
PRODID	Text	5
PRODDESC	Text	50

20. SchBillCyc

Field Name	Data Type	Field Size
ORGID	Text	5
PRODID	Text	5

SCHEMECOD	Text	4
BILLCYCL	Number	2
INSTFUP	Number	2

21. SchemeMas

Field Name	Data Type	Field Size
ORGID	Text	6
SCHEMECOD	Text	4
ORDER	Number	4
EFFECTDATE	Date/Time	8
SCHEMENAME	Text	22
SCHEMEDESC	Text	30
INTRATE	Text	4
INTR_REST	Text	1
SAL_MULTIP	Text	1
LCR	Number	4
MINLCR	Number	4
MAXLCR	Number	4
IIR	Number	4
MINIIR	Number	4
MAXIIR	Number	4
MINLOANAGE	Number	4
MAXLOANAGE	Number	4
MINLOANAMT	Number	4
MAXLOANAMT	Number	4
MINPERIOD	Number	4
MAXPERIOD	Number	4
ELIGI_RTC	Text	1
EMI_RTC	Text	1
EMI1LACRTC	Text	1
EMI_DECPRE	Number	4
ELIDEADRES	Text	1
FLAG	Text	1
SO_FEE	Text	8
MINPF	Text	8
MAXPF	Text	8
MINAF	Text	8
MAXAF	Text	8
PROCESDAY	Number	4
PRODUCTCOD	Text	2

76.3. FEASIBILITY STUDY:

All projects are feasible –given unlimited resources and infinite time. Unfortunately, the development of a computer based system or product is more likely plagued by a scarcity of resources and difficult delivery date. It is both necessary and prudent to evaluate the feasibility of a project at the earliest possible time. Month or years of effort, thousands or millions of dollars and untold professional embarrassment can be averted if an ill-conceived system is recognized early in the definition phase.

A feasibility study is not warranted for systems in which economic justification is obvious, technical risk is low, few legal problems are expected, and no reasonable alternative exists.

The feasibility study may vary but the general outline is as follows,

1. Introduction
    A. Statement of the problem
    B. Implementation Environment
    C. Constraints

2. Management Summary and Recommendations
    A. Important Findings
    B. Comments
    C. Recommendations
    D. Impact

3. Alternatives
    A. Alternative system configurations.
    B. Criteria used in selecting the final approach.

4. System Description
    A. Abbreviated statement of scope.
    B. Feasibility of allocated elements

5. Cost-Benefit Analysis
6. Evaluation of technical risks.
7. Legal ramifications
8. Other project-specific Topics.

In our project, the feasibility study was reviewed first by the project management and then by the upper management. The "go/no-go" decision was made and the product was found to be feasible.

6.4. INSTALLATION:

The installation and checkout phase is the period of time in the software life cycle during which a software product is integrated into its operation environment and tested to ensure that it performs as required. Characteristics of installations include the installation staff, the duration of the installation process, the number of installation sites, the number of system versions and the adequacy of their configurations.

Installation procedures place a completed and tested application into an operations environment in a manner that satisfies user requirements for using the system. Sometimes this process is separate from development and is performed by an organisation different from that, which developed and tested the application. (e.g., by field or customer support engineers). In some cases, the software end user performs installation and its check out. This is typically the case in the personal computer software industry. In many cases, installation occurs in a very short span of time, sometimes in an hour or few hours. At that time, operation of the software in its production environment is expected to commence. Installation sometimes occurs in installements where one or more subsystems are added to the initial delivery, with the user acceptance testing period occurring after each installation. Each subsystem should be appropriately integrated with previous subsystems before release for acceptance testing.

Planning for installation:

Verify accuracy and completeness. Ensure the integrity of the data before, during, and after installation with accuracy and completeness controls. For e.g., if a data file is to be reformatted, plan a test to demonstrate but the integrity of the file is preserved by reformatting. If control totals are maintained, verify the final controls against the initial controls.

Maintaining and verifying an installation audit trial. Verify that all processes and changed that occur during installation are recorded.

Assuring the integrity of the previous system. In many cases, the software being installed is a replacement for the existing system. Verify that the installation process allows the existing system to continue operation until the new system is formally accepted and declared operational. It may be necessary to operate the two systems in parallel for some period of time, or to maintain the old system in case the new system fails.

Verifying compliance to installation or checkout standards. Ensure that the installation and checkout is performed in accordance with appropriate procedures, standards and guidelines.

Deployment of the system:

The installation of our system mainly contains the following activities:

Institution Side:

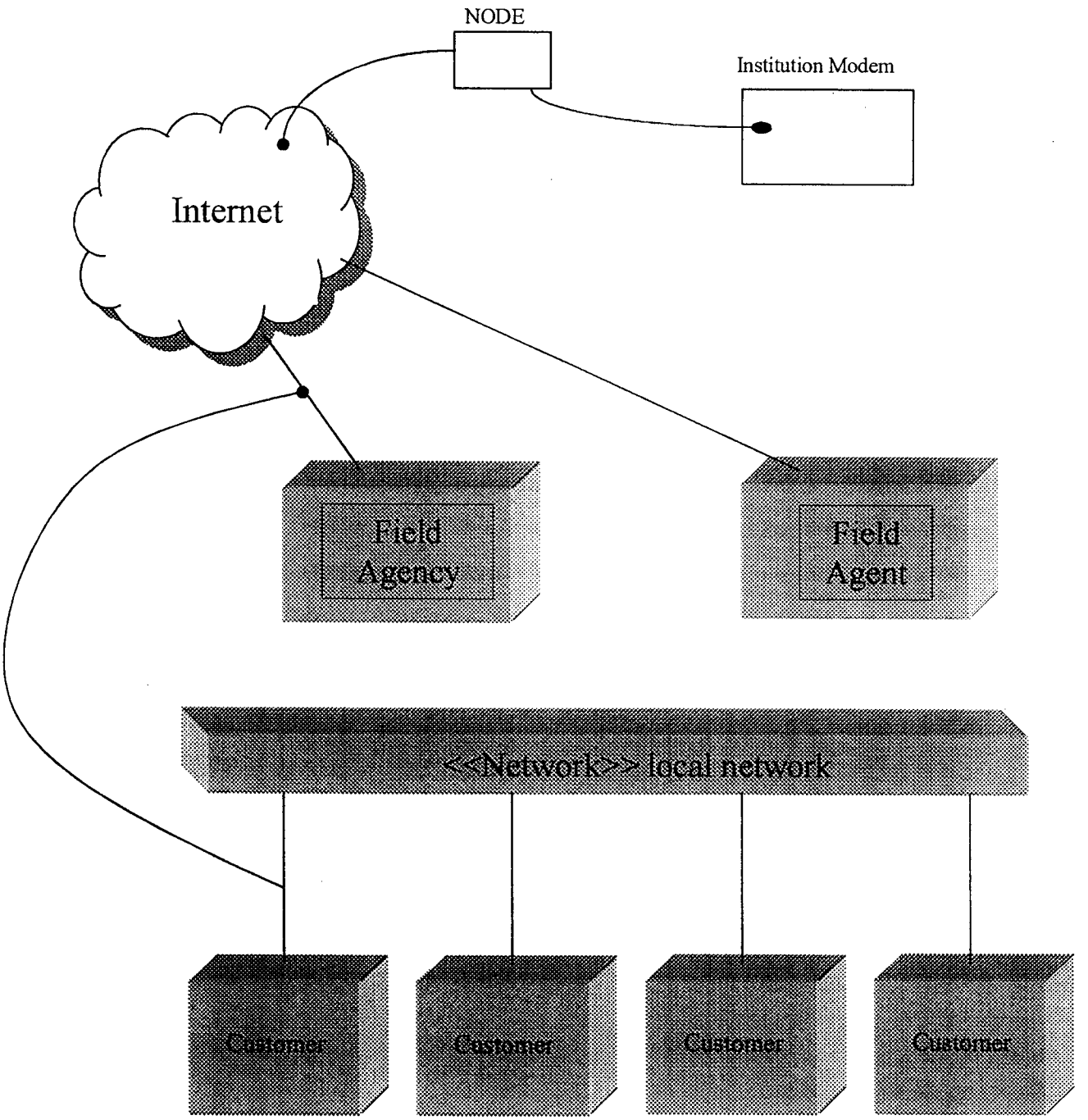
- Install and configure Apache Tomcat web server in the institution side.
- Create proper **context** for the agency application to contact the web server.
- Make necessary database connectivity.
- Install the application in the organisation side.
- Set up the modem in the organisation side.
- Run the server application in 24 hours a day.

Agency Side:

- Install the application in the field agency side.
- Set up the modem in the agency side.
- Make necessary database connectivity for the local connection.
- Run the client application whenever the field agency wants to contact the server.

The following deployment diagrams give an aid of how to install the system. It gives how the individual modules are deployed in the system after the installation.

Deployment Diagram:



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