

HOME BANKING - CLIENT SIDE



PROJECT WORK DONE AT
OBJECTPRO SOFTWARE PRIVATE LIMITED, CHENNAI.

PROJECT REPORT P-568

SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE AWARD OF THE DEGREE OF
MASTER OF COMPUTER APPLICATIONS
OF BHARATHIAR UNIVERSITY, COIMBATORE.

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Coimbatore - 641 006.

MAY 2001

BONAFIDE CERTIFICATE

This is to certify that **Ms. RADIKA.M, M.C.A (Final Year) of Kumaraguru College of Technology** has successfully completed her project work titled “**“Home Banking”**” under my guidance.

This project was carried out by her during the period of **December '2000 to April '2001.**

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Dear Sir/Madam,

As we are bound by the conditions of the agreement with our client, we are unable to release the source code. We are ready to give full support to **Ms. Radika. M**, who completed this project. Wishing success for her future endeavours.

Regards,



Rangarajan. R
Deputy Manager

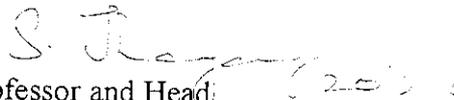
CERTIFICATE

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HOME BANKING – CLIENT SIDE

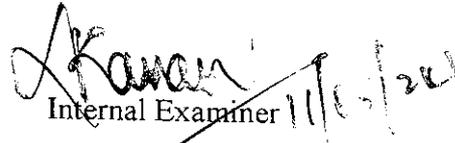
Submitted to the
Department of Computer Science and Engineering
Kumaraguru College of Technology

in partial fulfillment of the requirements for the award of the degree of Master of Computer Applications is a record of original work done by **Miss. M. Radika, Reg. No. 9838M0512** during her period of study in the Department of Computer Science and Engineering, Kumaraguru College of Technology, Coimbatore under my supervision and this project work has not formed the basis of award of any Degree/Diploma Associateship/Fellowship or similar title to any candidate of any candidate of any University.


Professor and Head


Staff-in-charge

submitted to University Examination held on 22/05/2011


Internal Examiner

External Examiner

DECLARATION

I hereby declare that this project entitled **HOME BANKING - CLIENT SIDE**, submitted to the Bharathiar University as the project of the Master of Computer Applications Degree, is a record of original work done by me under the supervision and guidance of **Mr. Gideon Sugirtha Raj**, Project Manager, Computer Services Department, ObjectPro Software Private Limited, Chennai and **Mr. M.V. Sethuramalingam, M.Sc. (CS), M.Phil.**, Department of Computer Sciences and Engineering, Kumaraguru College of Technology, Coimbatore. And this project work has not formed the basis for the award of any Degree/Diploma/Associateship/Fellowship or similar title to any candidate of any university.

Place : *Coimbatore*

Date : *20.11.2017*

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I am greatly privileged to express my deep sense of gratitude to my guide **Mr. M.V. Sethuramalingam, M.Sc(CS), M.Phil**, Lecturer, Dept. of Computer Science and Engineering, Kumaraguru College of Technology, for his valuable advice and encouragement.

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Radika. M

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SYNOPSIS

The project work entitled '**Home Banking - Client Side**' is an online banking system developed for ObjectPro Software Solutions Limited, Chennai. It provides webservice for the customers to do banking on-line.

The whole system has been categorized into three parts - the client side, server side, and the designing part. Due to the size of the project the client side alone is dealt in this part.

Home Banking is used to open an account for a customers in a bank and checking their account status from any where in the world via the Internet.

A demo has been given to the new users where they can find how to login and check their account status and all bank related activities.

The customer who wishes to open an account in Home Banking has to register himself , wherein he is allowed to choose his own user id and password.

The customer can view his current status, view his weekly transactions and monthly transactions. He can also transfer money from his account to another account, withdraw from his account and deposit money into his account.

Customers can interact with the banking system at the feedback section where they can give their views by sending the comments to the bank through the feedback form.

The system is developed using

➤ Personal Web Server

A web server used to satisfy the clients requests

➤ Active Server Pages

An advanced tool to communicate with the database and server by writing scripts in jsp.

➤ HTML

Tool to provide good interface for the users in web pages.

➤ Java Script

Scripting language used to process client side requests and validations.

➤ Microsoft Access

Back end to store database.

1. INTRODUCTION

1.1 PROJECT OVERVIEW

‘Home banking’ is an application supplying basic services for a bank customers. The application provides user services to customers of the home banking application through a Web browser and administration services for an internal bank application. The objective of this project is automating the account checking process of commercial banks.

The whole system has been categorized into three parts - the client side, server side, and the designing part. Due to the size of the project the client side alone is dealt in this part.

Home Banking is used to open an account for a customers in a bank and checking their account status from any where in the world via the Internet.

It includes the following features,

- ✓ Demo
 - ✓ Registration of customers
 - ✓ Checking and accessing their account information
 - ✓ View their Account status
 - ✓ Transfer of money from one account to other account
 - ✓ Withdrawals
-

- ✓ Deposits
- ✓ Feedback

A demo has been given to the new users where they can find how to login and check their account status and all bank related activities.

Any customer can open an account by using the software Home Banking by filling the Registration form and the type of account,

1. Current account
2. Saving account
3. Checking account

The customer can view his account status daily, view his weekly transactions and monthly transactions. He can also transfer money from his account to another account, withdraw from his account and deposit money into his account.

Customers can interact with the banking system at the feedback section where they can give their views by sending the comments to the bank through the feedback form.

1.2 ORGANIZATION PROFILE

OBJECTPRO SOFTWARE LIMITED, CHENNAI

Objectpro Software limited is a leading product/project developer focusing on end to end solution of the enterprise. We are a front ranking IT company, known for our impeccable track Record in software development, training, consultancy & on-site Services using object and component technology. Backed by a management endowed with a clear vision, object has evolved a unique organizational culture that is most conducive to achieve excellence in quality and performance. A team of software professionals with core competencies in e-commerce,enterprise applications, distributed computing and component solutions strives to translate the organizational objectives into reality.

Areas of Specialization

A. On the design front:

Object Oriented Analysis and Design, Design patterns, Unified Modeling Language Rational Rose.

B. Database Area :

Versant, Objectivity an Gemstone.

Our expertise is in developing e-solution application server products like weblogic, websphere etc.

Blazing new trails in Software Development

Objectpro designs develops and deploys software to meet the specific needs of service and manufacturing industries, health care and insurance sectors, to name a few. We have created a unique work environment that facilitates free interaction between the s/w developer design and expert so that they both understand the terminology and the nature of the work in a given domain. With experience and expertise in domain industry and s/w solutions, we match global standards and specifications with natural ease.

Standards matched by object pro

In the area of s/w design

- ❖ Unified modeling language (a unified approach of booch rambaugh & jacobson lorensen)
- ❖ Design patterns

In the area of s/w development

- ❖ Object coding standards
 - ❖ Uniform coding standards
 - ❖ Documentation done by developers
-

- ❖ Total documentation by technical writers
- ❖ Quality assurance
- ❖ Growing towards standard quality procedures

In the area of software deployment

- ❖ User manual
 - ❖ Cook-book installation manual
 - ❖ User training
 - ❖ Maintenance
 - ❖ User participation in deployment
-

2. SYSTEM STUDY & ANALYSIS

2.1 EXISTING SYSTEM

Requirement analysis is used to analyze the knowledge about the existing system. After understanding the limitations of the existing system and the identification of the problems, alternate system solutions are studied and recommendations are made about committing the resources required to design the system. Various studies are done in order to get the information like

- ◆ How the data are processed with in the organization.
- ◆ How data is spread over the organization.
- ◆ How data are searched for within the organization.
- ◆ How the users communicate.
- ◆ How the users distribute the data to others for their use.
- ◆ How safe the data is used within the organization.
- ◆ What are the files currently in use within the existing system.
- ◆ How the data flows between these files.
- ◆ What is the procedure in use for the data retrieval and transit.

LIMITATIONS OF EXISTING SYSTEM

The existing system uses a manual system for most of the process involved. Any user who wishes to have an account in the bank does the

registration process and signing up all in means of person. Then the user is provided with the list of facilities available in the bank at hand. The whole system works in this manner.

Since manual processing is the only way for accessing the information, this system will lead to the following limitations.

- A manual system increases the amount of paper work and clerical cost involved, thus increasing the costs involved in the processes.
 - It results in wastage of time for the communication between the bank and the customers.
 - There can be information mishandling at every stage during the transaction of the amount.
 - The Existing system in an unsecured information flow it can also lead to consistency and redundancy of the same information.
 - Manual system results in non - uniform communication between the bank and the customers. The communication in short, will not be effective at all.
 - With effect of all these limitations the organization finally loses its position within the market with respect to its competitors.
-

These disadvantages of the existing system have led to the development of new system using digital technology which replaces the paper-based processes, resulting in lower costs, greater accuracy, higher speed and larger scale of availability.

2.2 PROPOSED SYSTEM



The proposed system should be developed in such a way to solve the problems faced by the existing system. For achieving this the ideal environment is the Windows Environment; as it is the most popular multi-tasking system available today. The tool used to develop the system is Active Server Pages for it's flexibility and versatility.

The proposed system uses Microsoft Access that is a database system with powerful querying functions and easy accessing. The system is very user-friendly and driven by hyperlink. Enough security features are provided both to the admin side functions consisting of the databases and the client of the new system. A good user interface is provided to the user in the form of an easily understandable point – and – click interface system.

The system has been segregated into three based upon the mode of use by the user in the client side and administrator side. The client side alone is dealt in this section of the project. The client side functions from the view point of the end user of the system.

The client side functions of the proposed system works as follows:

Any user who wishes to open an account in the bank can do so by registering himself as a user. Within the organization home page that is

shown initially, options have been given for both the Registered User and the New User of the organization. Once the new user gives his particulars and chooses his own User Name and Password, which forms the basis of his identification through out the account access. Signing up the registration means that the user agrees, that any transaction done via this system are as legal and binding than a transaction done through over the phone or person.

Once the user logs in with the User Id and Password, the system provides the user with the list of facilities and accounts available wherein he can choose the account of his own choice. As the user chooses the account, and registers, he is allowed to access his account. In the account access, user is allowed to view his account status or deposit money or allowed to do the transactions he wishes.

Provisions has been given to the user to view the status of his account, to transact amount from his account to some other account, to withdraw his money and to deposit into his account. Before logging out the user is allowed to give his feedback in the feedback form about the services provided in this system and as well as the services in the bank.

The advantages of this system are as follows:

The bottom line is that if the system is implemented correctly can save organization's money. However the specific benefits are

➤ Streamlined Banking Processes

The internet fosters a culture of connectivity and speed that can be translated into a need to develop business systems faster than the competition and create business process that cross functions and organizations. In order to engage in e-commerce with customers, rapidly synthesize banking processes, and continuously innovate the banking for greater efficiency, organizations are making this system a commercial imperative.

➤ Extension of the customer chain

The proposed system offers banking, the ability to reach new customers, such as small accounts that wouldn't have been interest-effective for the bank to handle or that are located elsewhere in the world.

➤ Procurement Trends

For those organizations that choose to develop longer-term relationships with more customers, this provides a wider field to select from, when developing these relationships.

➤ Technology wealth

The developed system flourishes in a banking environment where technology is a driver for competitive advantage. Technology advancements now enable the hardware, software, and infrastructure necessary for high-performance systems.

FEASIBILITY STUDY

The purpose of the feasibility study is

- To gather the informations required,
- To analyze the gathered information and
- To document the data needed to make an informal intelligent decision regarding a system's practicability.

The various types of feasibility study conducted on the proposed system are as follows.

TECHNICAL FEASIBILITY:

- The memory capacity of the existing hardware is quite sufficient for the execution of the system.
 - The speed of the existing hardware and the system is quite sufficient.
 - Technical enhancement may be needed in this system in future, and it will not force any barrier to estimated budget.
-

Thus a thorough study reveals that this project is technically feasible.

ECONOMIC FEASIBILITY:

The cost of the system is evaluated here.

- There is no extra cost needed for implementing the system, if the organization already has network and windows environment.
- Since it is very easy to use, no training is needed. So training cost can be avoided.
- This system is flexible so that further enhancement is possible according to the future needs of the users.

OPERATIONAL FEASIBILITY:

The developed system provides a very easy understandable and readable point-and-click interface system. It has used all the latest Internet technology for it's development. Hence it shows the operatinal feasibility is also present.

2.3 REQUIREMENTS OF NEW SYSTEM

The e-commerce facility has been set up by the organization for their banking transactions. In this system the account access, withdrawals, deposits and transactions are done via some electronic means. The system is being designed in order to overcome the limitations faced by the existing system and hence should possess the following features.

- The system should enable communication between both the customer and the organization faster and more accurately. Since all the process starting from the signing up and account access until the final transaction in the accounts are done electronically, it improves the efficiency and results in a more reliable transaction.
 - It should help in increasing the customers of the bank at a lower cost. The only cost involved during the transaction is for the internet connection, which is very less compared to that involved in the case of manual transactions.
 - It should have a speedy order fulfillment and tracking system. The user can achieve the updation and retrieval of data at any data.
 - There should be uniform communication between the customer and the organization through out the system.
-

2.4 USER CHARACTERISTICS

The system has been designed as a very easy to understand point - and - click interface system. The whole system is partitioned into two - the client side and the admin side depending on the mode of operation of the system by the corresponding user at each side. Hence the characteristics to be possessed by the user vary on both the sides.

CLIENT SIDE USER CHARACTERISTICS:

The user using this system should possess the following knowledge

- A fair knowledge about the internet and the service providers is needed for operating the system.
 - The user should know about the business to consumer transaction system and the order in which the transactions take place.
 - He should also possess knowledge about the various terminologies involved in the transaction that involves signing up, account access, withdrawals, deposits and transactions.
-

3. PROGRAMMING ENVIRONMENT

3.1 HARDWARE CONFIGURATION

- Intel 486 and above
- 16 MB RAM
- Cache Memory 512 KB
- Network Interface Card

SOFTWARE CONFIGURATION

- Windows Operating System
 - Netscape Communicator 4.5 or Internet Explorer
 - MS Access ODBC Driver
 - Personal Web Server.
-

3.2 DESCRIPTION OF SOFTWARES AND PACKAGES USED

The software used to develop the proposed system is as follows:

- ◆ Java server pages
 - Internet tool used for web publications.
- ◆ Hypertext Markup Language
 - Internet tool used for web designing.
- ◆ Java Script
 - Scripting language used to run client side events.
- ◆ Personal Web Server
 - Web Server used to satisfy client side requests.
- ◆ Microsoft Access
 - Database used to store values.

ABOUT OPERATING SYSTEM

Windows 98 is a 32-bit, preemptive multitasking operating system that belongs to the Microsoft Windows family of operating system products. This operating system is being used in the project for the following reasons.

- Windows 98 Server is enabled to work as a network operating system. Unlike previous versions of Windows, Windows 98 really is a complete, true operating system in itself, not relying on Dos for
-

lower level function. When computer with Windows 98 starts up, it starts immediately in Windows 98.

- Windows 98 is a 32-bit Operating System with a graphical interface. It is not a revision of any of the other Windows operating systems such as Windows for workgroups 3.x, but rather an entirely new operating system.

The feature provided includes

Portability : Unlike most operating systems, Windows 98 can run on a variety of platforms. This flexibility can be a great advantage when implementing a computer strategy for an organization.

Multitasking Operations: From the perspective of the end user, multitasking means that different type of applications can run simultaneously. While the user is working on one application can be running in the background.

File Systems: Windows 98 supports a variety of file systems, including FAT, NTFS and VFAT.

File Allocation Table(FAT): The file system used in DOS.

New Technology File System(NTFS): The file system introduced by Windows 98.

Virtual File Allocation Table(VFAT): The file system introduced by Windows 95.

Security : Windows 98's security features such as a mandatory logon procedure, memory protection, and auditing and limited network access have been developed.

Support for many clients : A wide variety of clients can serve as workstation on a Windows 98 network such as Windows 3.x, Windows Workgroups, MS-DOS, Windows -95, Windows -NT Workstation.

Windows 98 has been designed to operate well on the same network as Novell NetWare and Unix file, print and application servers. Windows 98 includes tools to provide seamless connectivity to NetWare servers.

Storage space : Windows 98 supports a virtually limitless amount of memory and hard disk space.

- **RAM** : Windows 98 supports 4 gigabytes
- **Hard Disk Space** : Windows 98 supports 16 hex bytes.

Reasons for selecting Active Server Pages

The ASP is a technology for building dynamic and interactive web applications. The primary difference between ASP and the other new generation technologies mentioned is that ASP must be executed on the

web server, while the pages generated by other technologies are interpreted by the browser(or client). And the advantages that ASP which makes us to choose for our project, is that,

- **Simplicity and speed:** It is very simple and speed over the CGI and Perl.
- **Browser Independence:** The ASP portion of a page runs on the server and sends only results to the client independent of the browser that is used by the clients.
- **Active Server Objects:** There are five Active Server Objects, each of which deals with a specific aspect of interactivity and are intended to simplify browser and page control.

1. Response Object:

Send text, data and cookies to the browser and control each stage of transmitting the page.

Methods: write, redirect, end, flush and cookies

Properties: buffer, cookies.

2. Server Objects:

Create COM objects, some conversion facilities and overall

Scripting control.

Methods: createobject, mappath, URLEncode, HTMLEncode

Properties: script timeout.

3. Request Object

Read submitted form data and cookies.

Methods: query string, from, cookies

4. Application Object

Allow you to manipulate global data in your script that will be visible to all users browsing the site or your script code.

Methods: lock, unlock.

- **Network Traffic Control:** Minimizes network traffic by limiting the need for the browser and server to talk to each other
 - **Quicker Loading Time:** ASP speeds-up the loading time because only the page of HTML is downloaded in the client's system.
 - **Language Support:** Allows you to run programs in languages that aren't supported by the user's browser.
-

- **Data Security:** Asp is able to provide the client with data that does not reside on the client's machine.

Reasons for selecting Hyper Text Markup Language

Hyper Text Markup Language (HTML) is a collection of platform independent styles (indicated by markup tags) that define the various components of World Wide Web (WWW) document. HTML was invented by Tim Berners-Lee while at CERN, the European Laboratory for Particle Physics in Geneva. HTML documents are plain-text files that can be created using any text editor.

An element is a fundamental component of the structure of a text document. some examples are *heads, tables, paragraphs* and *lists*. To denote the various elements in a HTML document you should use tags. Some elements may include an attribute, which is additional information that is included inside the start tag. HTML is not case sensitive. Not all tags are supported by the World Wide Web browsers. If a browser does not support a tag, it will simply ignore it.

For passing the value from client side to server side we use HTML forms tag.

The form can contain interface elements such as text fields, buttons, check box, radio buttons, and selection lists that let users enter

text and make choices. Each interface element in the form must be defined with an appropriate tag. As well as user input elements, the form can contain other elements such as heading, paragraphs, tables and so on.

When the form is displayed in a web browser, the user can fill it out by making choices and entering text using interface elements. And then submit the form by clicking a “submit” button.

Forms uses two types of methods one is “post” and another is “get”. We pass the value into ASP file using the ACTION method. The input values are taken into the asp file for processing at the client side. Sometimes JavaScript is also used in the HTML file for more efficiency.

Eg.

```
<form method = “post” action= “resp.asp”>  
Enter name : <input type = “text” name = “name”>  
Enter password : <input type = “password” name = “ pass”>  
<input type = “submit” value = “ login” >  
</form>
```

The above example pass the value of name and password for the resp.asp file and the user inputs are processed at the server side using asp.

Reasons for selecting JavaScript

JavaScript is an easy to use object-scripting language designed for creating live online applications that link together objects and resources on both client and server. JavaScript is designed for use by HTML page

authors and enterprise application developers to dynamically script the behavior of objects running on either a client or server. Netscape develops JavaScript and Microsoft develops Jscript. With JavaScript we can easily create interactive web pages.

Java Script is

- Designed to create net-centric application
- Complementary to and integrate with java
- Complementary to and integrate with HTML
- Open and cross platform.

Reasons for selecting Personal Web Server

Microsoft Personal Web Server is a desktop Web server that makes it possible to publish personal home page and share documents on the corporate network. PWS can be used as a development staging platform before uploading a site to an Internet provider. It also makes documents available by Web browser from corporate intranet. Browser can be used to preview a site before uploading, to see how it looks and functions when served. PWS makes a great platform for testing a site before hosting it on the Company server, or on an Internet service provider. It also includes check links, forms, scripts, and applications to be sure they display and function correctly.

Personal Web Server helps to bring down the barriers to information sharing today. Everything needed to create, personalize, and serve web site is available in PWS.

Reasons for selecting MS-Access

MS-ACCESS is a powerful multi-user DBMS available with the Microsoft office and which used in the project as the back – end to store the database.

MS-ACCESS has been chosen within the system for the following reasons.

Access is a multi-featured DBMS that can be used by both beginners and those who have previous DBMS experience.

- Access is windows based application and therefore has an interface similar to Windows 98.
 - Access maintains a single disk file for a database and all its associated objects. However, Access can create links to tables in any other.
 - DBMS capable of handling large volumes of data spread across several databases and users.
 - Access lets you import from or export to FoxPro, Excel, Oracle and other data formats
-

- Access provides user level security features and encrypting/decrypting databases, tables along with password protected databases, tables.

Basic steps for using ADO :

1. Create an instance of the Connection Object

The first step for interfacing with the database is creating an instance of the connection object. Using the following ASP statements we can create the connection object,

```
Set DatabaseConnection = server.createobject (" ADODB.Connection")
```

2. Open the connection to the database

Using the open method and specifying the DSN, opens the connection to the database Database Connection.Open " DSN name"

3. Issue the SQL comments to the databases

After establishing the connection with the database, the Execute method of the connection object is used to issue SQL commands. SQL statements can be used to insert, delete and retrieve database information.

The syntax of Execute method of the connection object is given below,

```
DatabaseConnection.Execute "< SQL Statement >"
```

4. Close the database connection

After accessing the database, the database connection should be closed. Closing the database connection immediately after using the database makes efficient use of the database resources. The syntax for closing the database connection

DatabaseConnection.Close

Set DatabaseConnection = Nothing

4. SYSTEM DESIGN AND DEVELOPMENT

4.1 INPUT DESIGN

The input design is the link that ties information system into the world of its users. Input design consists of developing specification and procedures for data preparation, steps necessary to fit transaction data into a form that is usable for computer processing.

The input design pertaining to the Home Banking system can be of two classes namely are to be hosted as a web page and the other to the bank staff to update the databases. The input screens are designed as to serve the objectives such as effectiveness, accuracy, simplicity and attractiveness.

Whenever a user enters into the banking site, the homepage is displayed wherein there are two options - for New Users and Registered Users. If the option new user is selected then a registration screen is displayed wherein he has to choose his own user name and password.

The inputs given in the Registration form are,

Name

Age

Sex

Address

E-mail

Phone

Account Number

Branch

Login ID

Password

Once the Registration is over the user is allowed to access to his accounts. In this the user is allowed to choose Account Type from the list of options such as Savings Account, Current Account, Checkings Account and Account Number as an input.

When a user needs to withdraw money from his account, he has to fill in the withdrawal form which includes the Withdrawal Amount as an input.

When a user needs to deposit money into his account, he has to fill in the deposit form which includes the Deposit Amount as an input.

If a user wants to transact amount from his account to some other account, the amount to transfer and the account to transfer is given as an input.

The user is allowed to place their comments in the feedback form, which acts as an input for the future rectifications to be made.

4.2 OUTPUT DESIGN

One of the most important features of an information system for users is the output it produces. Output is information delivered to users through the information system. Without quality output, the entire system may appear to be unnecessary that users will avoid using it.

The output design of this system is done so that the output screen consists of all the necessary details presented in an attractive and easy readable form.

Any person who wishes to open an account in the bank should first register himself as a user. Once the user fills in the details of Login Name and Password and signs up he is provided with the account access.

When a user selects to view his account status he is provided with the option of daily view, weekly view and monthly view. In daily view the user is provided with the output which displays the User ID, Account Number, Account Type, View Date and the Balance to date. In the weekly view the output is displayed with debit and credit transactions made in that week with the date. In the monthly view debit and credit transactions with the date for the whole month is displayed as an output to the user.

The conformation for the transactions, withdrawals and deposits done by the customer are displayed on the screen for the customer insurance.



4.3 DATABASE DESIGN

All the details of the Home Banking are stored in the database. The following are descriptions of the tables.

Customer Table

This table contains the personal details of customers

Field Name	Description	Data Type
Cust_name	Customer Name	Text
Cust_age	Customer Age	Number
Cust_sex	Customer Sex	Text
Cust_address	Customer Address	Text
Cust_email	Customer Email	Text
Cust_ph	Customer Phone	Number
Acc_no	Account Number	Number
Br_name	Branch Name	Text
Login_id	Login ID	Text
Pass	Password	Text

Account Access Table

This table contains the details of customer's account type and account number.

Field Name	Description	Data Type
Acct_type	Account Type	Text
Acct_no	Account Number	Number

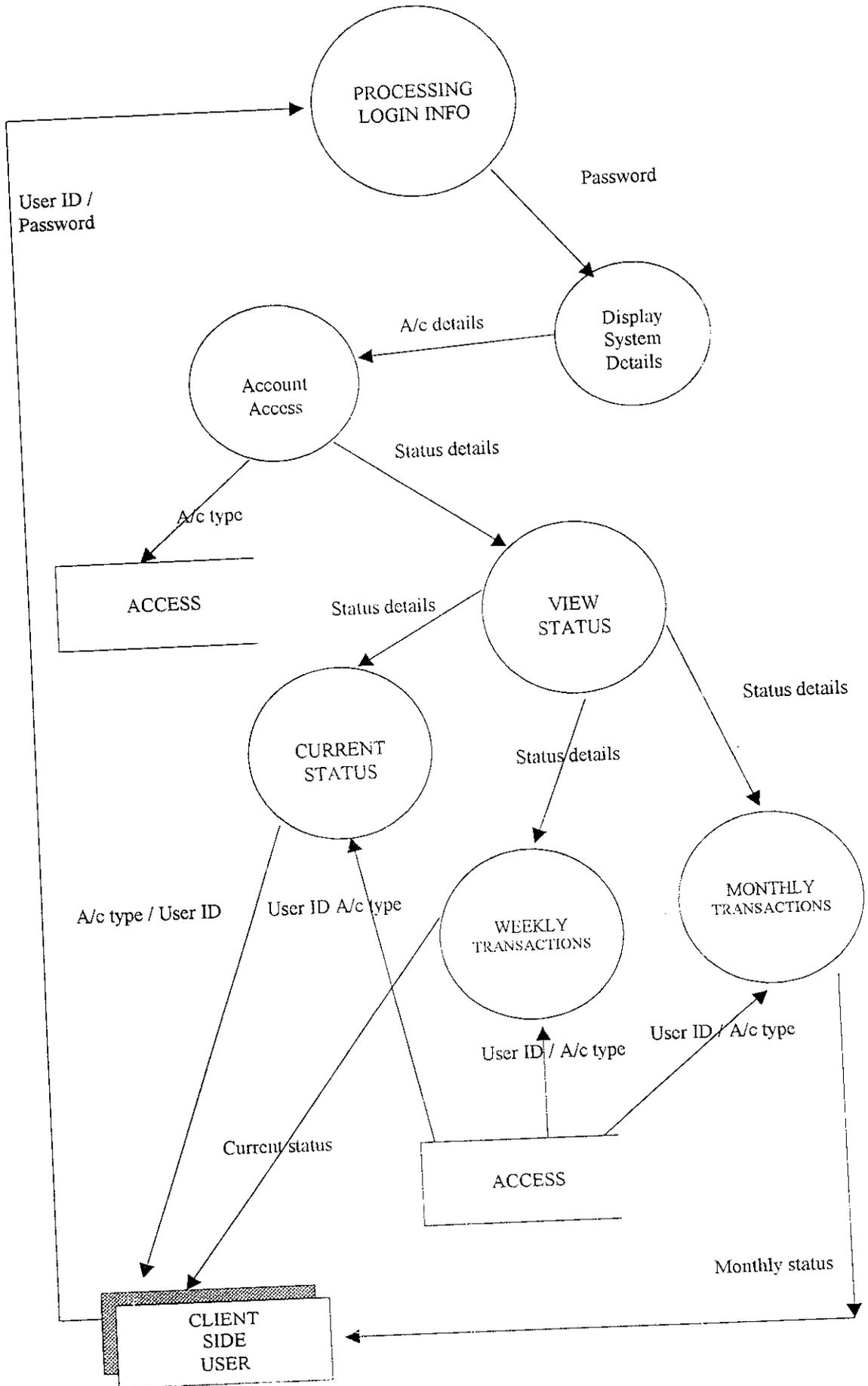
Transaction Table

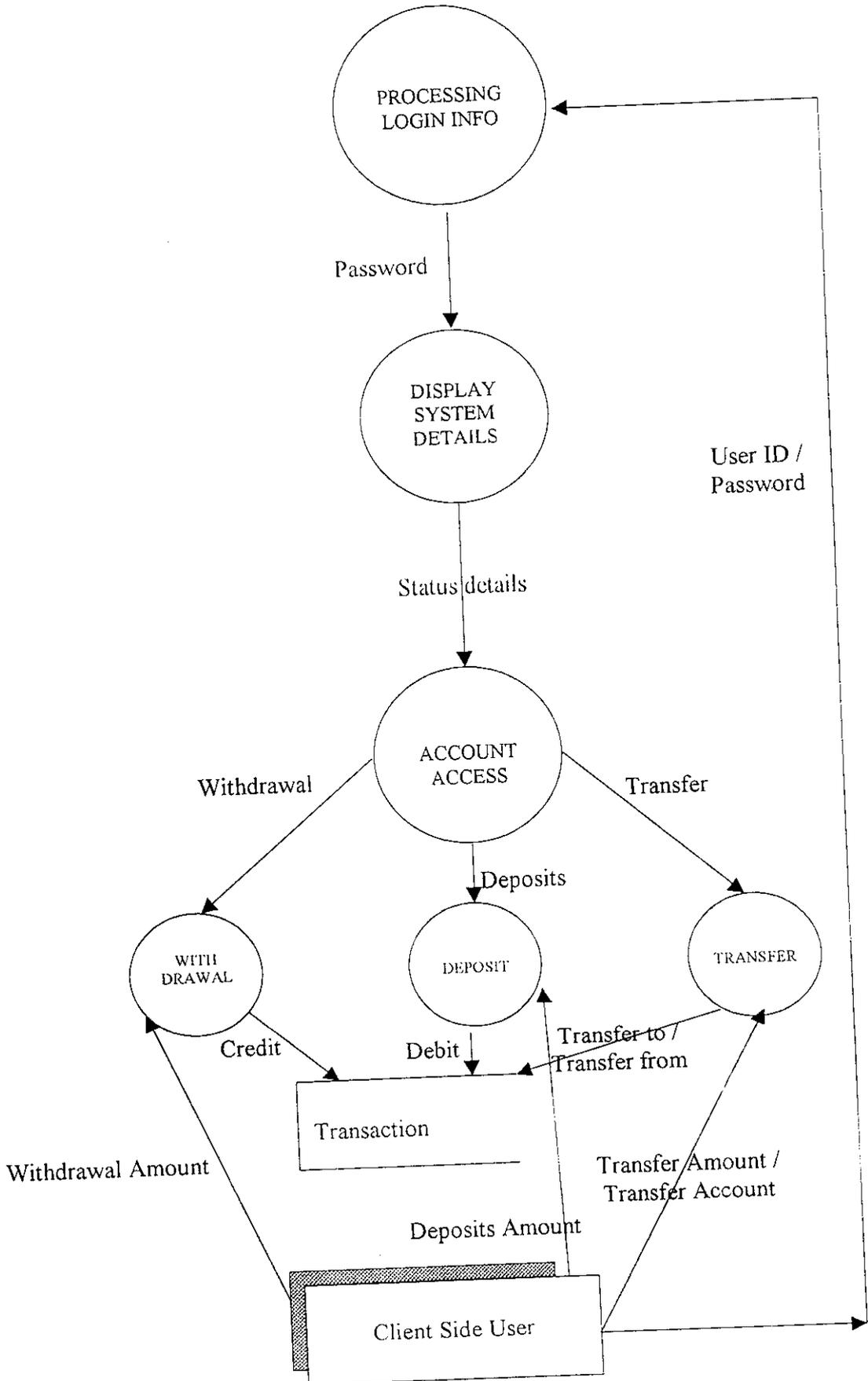
Transaction table stores the status of customer's account

Field Name	Description	Data Type
Login_id	User ID	Text
Cust_bal	Customer Balance	Currency
Cust_dr	Customer Debit	Currency
Cust_cr	Customer Credit	Currency
Trans_to	Transferred To	Number
Trans_from	Transferred From	Number
Date	Date	Date

4.4 PROCESS DESIGN

The next step is how the system is processing. The main activity in this phase is coding. Adequate care has to be taken while coding is being proceeded. Adequate comments are one of the very important considerations. The coding must be easily understandable as well as effective and efficient. Indentation must be provided wherever necessary. The coding can be proceeded module by module.





5. SYSTEM IMPLEMENTATION & TESTING

5.1 SYSTEM IMPLEMENTATION

In implementation the theoretical design is turned in to a working system and then to monitor the operation of the system to ensure that it continues to work efficiently and effectively.

It involves careful planning, investigation of the current system and its constraints on implementation. The system is implemented only after the thorough test is done on each of its subsystem and checking for, whether it is working according to the specification.

Implementation consists of

- Necessary changes are made to this system as described by the users.
- Developed package is tested using local machine as server and also with real server.
- All the errors are corrected.
- Hardware and software utilities are installed.

Since "Home Banking" consists of several modules. The modules alone cannot be implemented individually. The other modules such as server side and the design side also have to be developed and to be integrated for the successful implementation.

5.2 SYSTEM TESTING

OBJECTIVE:

The objective of this procedure is to devise procedures to define strategies for testing a software system in an attempt to detect errors/ bugs that may be present.

SCOPE:

The test strategies, defined in the test plans, applied to the software units like programs and to the software system as a whole.

TESTING METHODS

The test case design methods applied are

- White box Testing
- Black box Testing

WHITE BOX TESTING

- Using this testing method it was assured that all the independent paths were exercised at least once.
 - All the logical decisions on their true and false sides were executed.
 - All the loops were executed at their boundaries.
-

BLACK BOX TESTING

Using this technique incorrect and missing functions were rectified and corrected. Interfacing errors, performance errors, initialization errors and termination errors were also found using this technique.

TEST PLANNING

The testing activity can be divided into four different phases as given below

- Unit Testing
- Link Testing
- Systems Testing
- Acceptance Testing

The test plan should be prepared by the suitable members of the program development team depending upon the testing activity to be done by taking into consideration the requirements of the activity as discussed below. It should be done before the 'Quality Assurance Audit - 1'(QA-1) as per Program Design Procedure. Link testing and System testing would be carried out only in cases of specific customer requirements.

UNIT TESTING

- a) The programmer does unit testing after he completes coding and successfully compiles the program assigned to him. The Unit Test Plan should be prepared by the programmer when the program specifications are assigned to him.
- b) Following points should be taken into consideration while planning tests for unit testing.
 - The inputs required initiating execution of the program as a unit.
 - The expected processing that should be done on each unit.

Eg. Conversion of the data read into corresponding text or codes, changing display intensity of certain fields of a screen, message to be displayed on the screen (in case of online programs), grouping the output data as per the print controls (in case batch reporting programs), incrementing and displaying / printing certain counters like page numbers, serial numbers of a list, creation / updation of database records, file records, etc.

- The expected outputs .

Eg. A screen displaying information requested by the user (in case of online programs), the reports printing information after printing the data read.

- The paths to be chosen during certain conditions encountered while executing the program.

Eg. Response that should be obtained on pressing invalid Program Function (PF) keys (in case of online programs), scrolling forward / backward in the displayed list or transferring control to other programs when certain PF-Keys are pressed, etc.

- Other implied requirements of the customer.
- As far as possible each specified functional requirement of the specifications should be tested in a separate test.

The Unit Test Plan should be prepared in the standard format. The variable information in the header of each page such as the test plan name, the date of creation / updation of test plan, the project name, the customer name, the program name, the author of the test plan should be filled in by the programmer.

- c) The test should be serially numbered starting from 01 .The test number should be given starting from column in the format given in the Annex B.
 - e) If the databases or files used in online / batch programs, TSQ s (Temporary Storage Queues) or TDQ s (Transient Data Queues) used in CICS programs are required to be in a specific state before
-

commencing a particular unit test is carried out, it should be mentioned under the 'Pre-conditions' clause for that test. If there is no such requirement for a test, the 'Pre-condition' clause should be omitted. Each required state of a database, file, TSQ, or TDQ should be mentioned under a separate sub-clause. These sub-clause should be numbered alphabetically. The 'Pre-condition' clause should be coded in the format given in Annex – B.

- f) The test to be carried out should be mentioned under the 'Test' clause.
- g) The expected results for the test should be mentioned under the 'Result' clause.

LINK TESTING

- a) Link testing is done by the team leadership(s) or by the team member(s) of the project after a set of programs, that form a module by linking each other, has been certified to have completed the 'Quality Assurance Audit-3' (QA-3)
 - b) Following points should be taken into consideration while planning tests for link testing.
-

- The inputs required initiating execution of different programs in the module.

- The expected outputs from each programs of the module.

Eg. A screen displaying information requested by the user with required display intensities for different screen fields, messages passed between programs (in case of online programs), the reports printing information after printing the data read, etc.

- The paths to be choosen during certain conditions encountered while executing the programs of the module being tested.

Eg. Transfer of control to certain programs that should be obtained on pressing certain Program Funictons (PF) Keys (in case of online programs), initiation of certain programs in a batch programs suite when certain processing in a program is complete, etc.

- Other implied requirements of the customer.

- As far as possible each specified functional requirement of the specifications should be tested in a separate test.

SYSTEM TESTING

a) Systems testing is done by the team leader(s) or by the team member(s) of the project after all modules of the software package

have been certified to have completed the ' Quality Assurance Audit-3'(QA-3).

b) Following points should be taken into consideration while planning tests for system testing.

- The reflections of processing done in different programs of different modules.
- The paths to be chosen during certain conditions encountered while executing the software system.

Eg. Transfer of control to certain programs that should be obtained on pressing certain Program Function (PF) Keys (in case of online programs), initiation of certain programs in a batch program suite when certain processing in a program is complete, etc.

- The system performance requirements.
 - Other implied requirements of the customer.
 - As far as possible each specified functional requirement of the specifications should be tested in a separate test.
-

ACCEPTANCE TESTING

This is the final stage in the testing process. The system is tested with data supplied by the user and found no error is detected. The different kinds of data are used for the system testing. Acceptance testing is an important testing that has to be done.

6. CONCLUSION

The system provides provision for both New user & Registered user. Every user who wishes to open an account in the bank is allowed to choose the User Name & Password. Every action performed by the user on the client side is acknowledged by confirmation. The whole system has been designed in an easily understandable point & click interface way. The user has been provided with the provision to view the system details.

The system is designed in such an extendable fashion to incorporate the future changes into the system easily. The various user-friendly features are introduced in this project. There are several future ideas can develop this web application, still in mind. The system is developed according to requirements produced by the organization. All the dynamic links to other pages are generated and are tested with the actual system. And the application can be run in any browsers, but is mainly designed for Internet Explorer.

The Application is tested with the user requirements and verified for the validity. The software requirements have been met. Needed Documents are generated and adequate documentation has been provided for maintenance and further enhancements.

7. SCOPE FOR FURTHER DEVELOPMENT

“Home Banking” is a software for banking. Since it is an Internet based project, modifications and updations can be done easily. At any point of time HTML pages can be attached with hyper links to the existing page. So, the scope of the project is for throughout the lifetime.

In this system in particular the development could be made in future for transacting amounts from one branch to another branch. Further changes could be made by analysing the user feedbacks.

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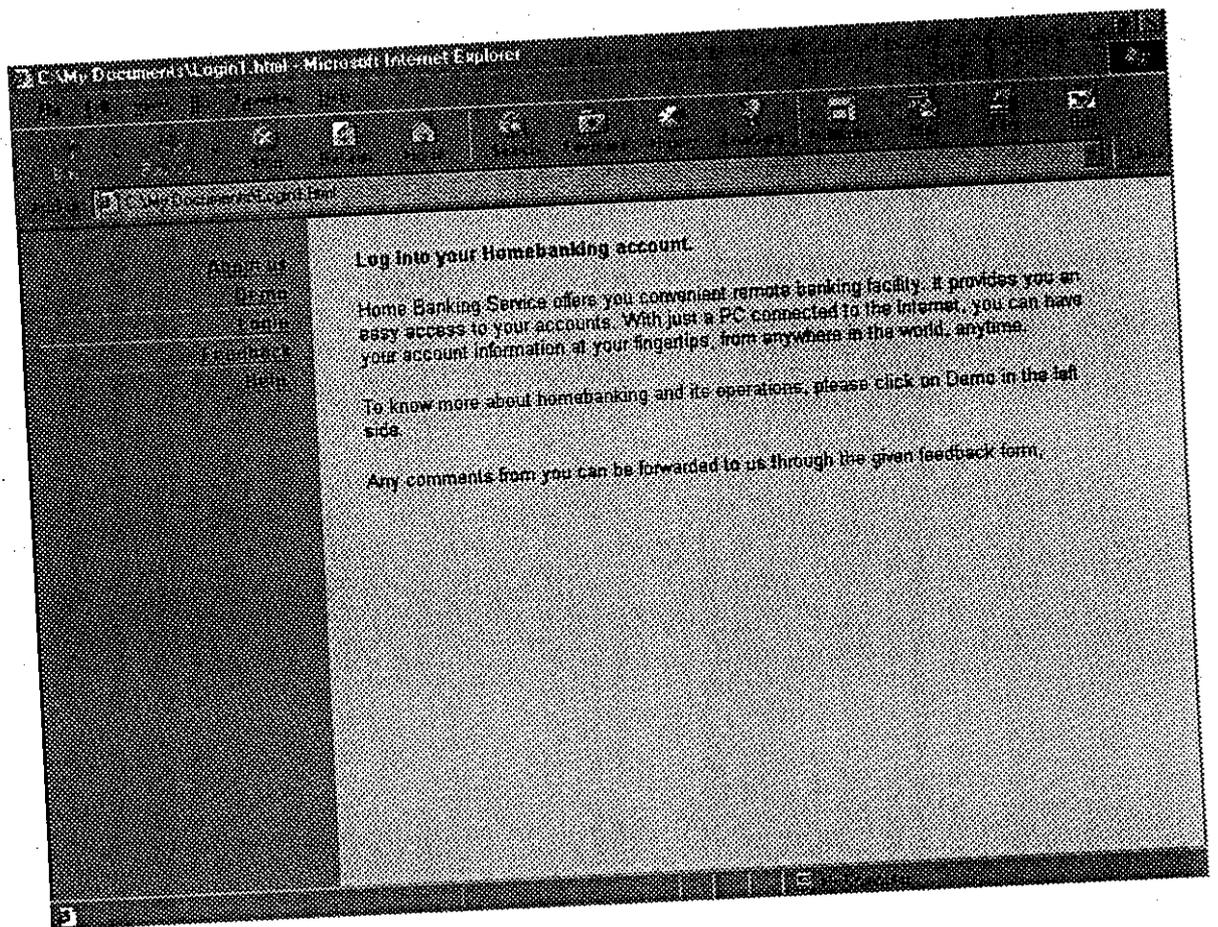
WEBSITES

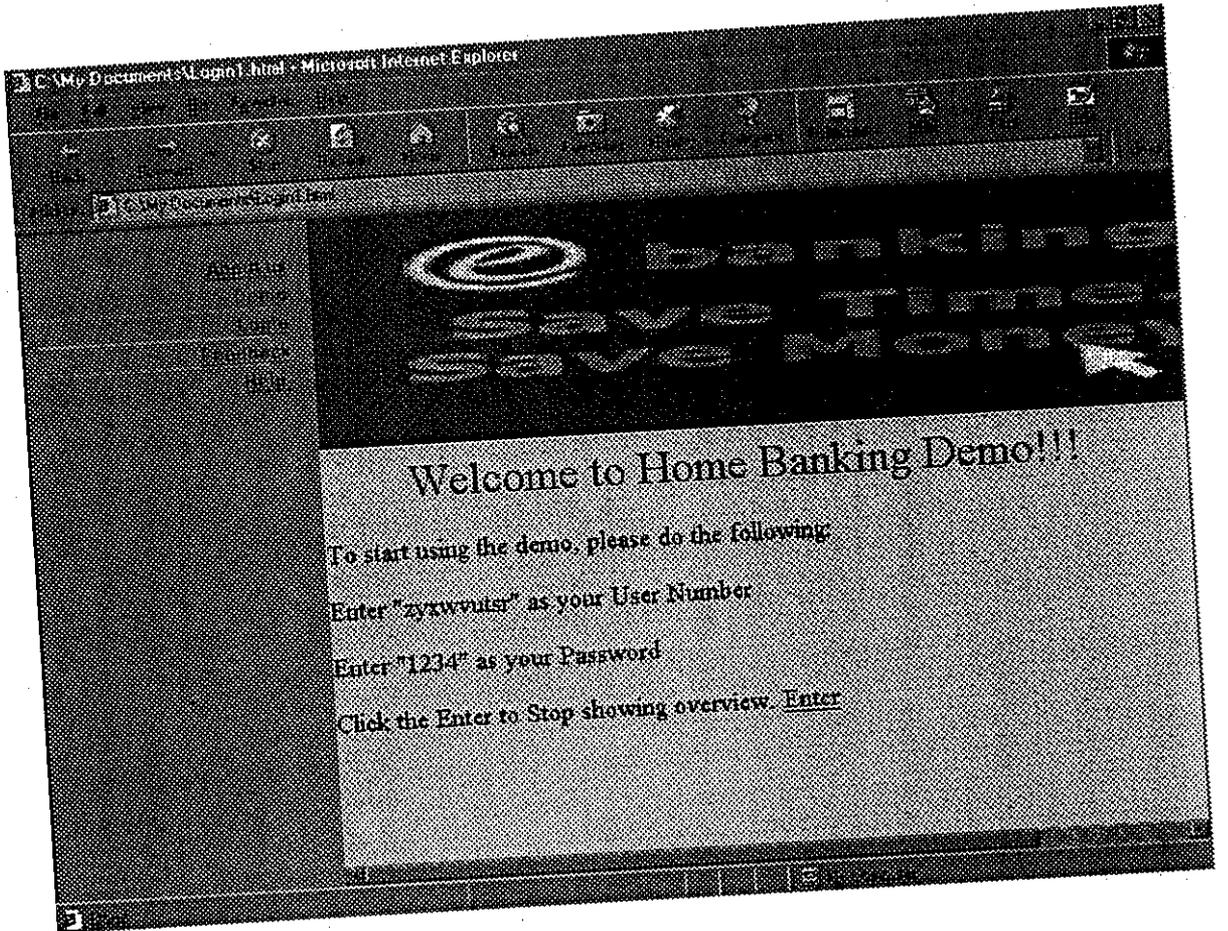
www.aspdeveloper.net

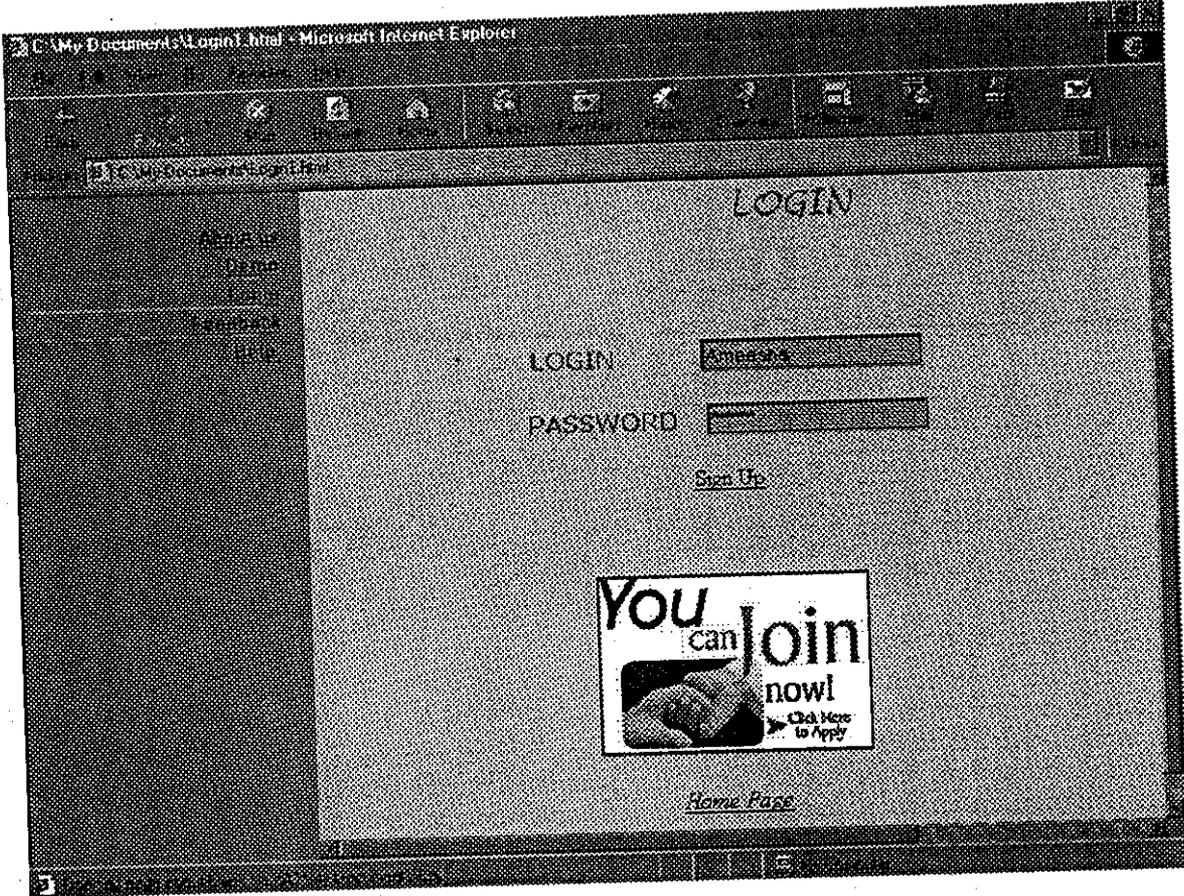
www.icici.com

www.hfbc.com

www.hsbc.com







C:\My Documents\Login.html - Microsoft Internet Explorer

http://www.example.com

LOGIN

- [About Us](#)
- [Home](#)
- [Contact](#)
- [Privacy](#)
- [Help](#)

LOGIN

PASSWORD

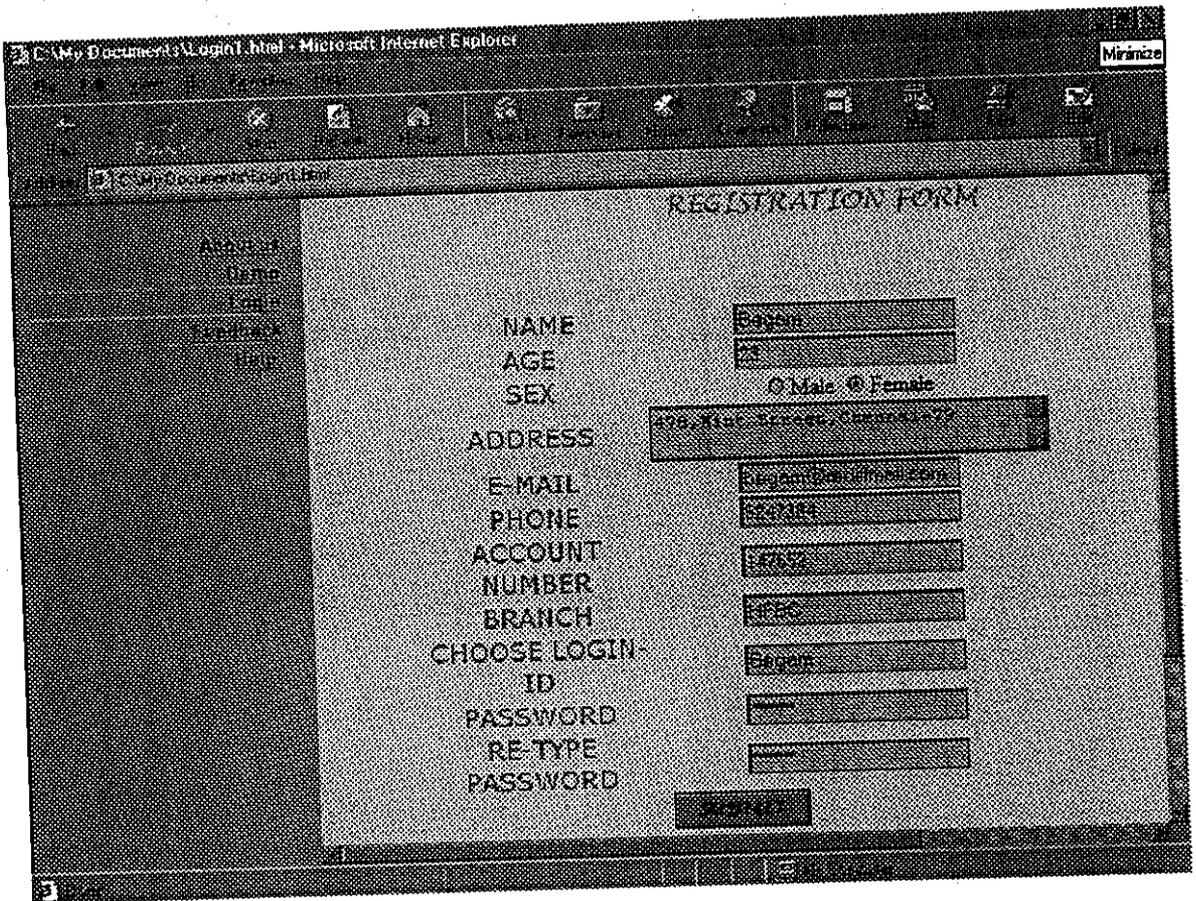
[Sign Up](#)

You
can **Join**
now!



[Click Here to Apply](#)

[Home Page](#)



- Home
- Login
- Feedback
- Help

REGISTRATION FORM

NAME

AGE

SEX Male Female

ADDRESS

E-MAIL

PHONE

ACCOUNT NUMBER

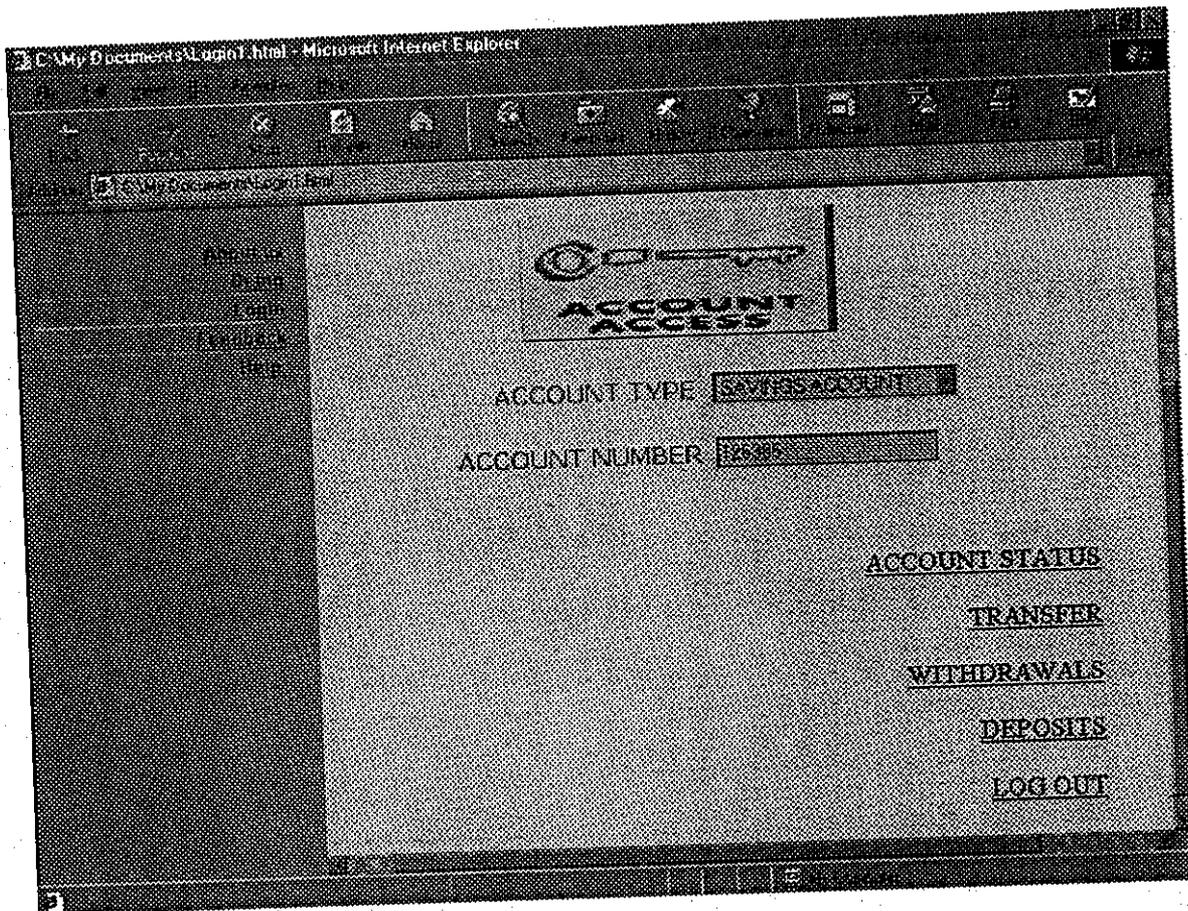
BRANCH

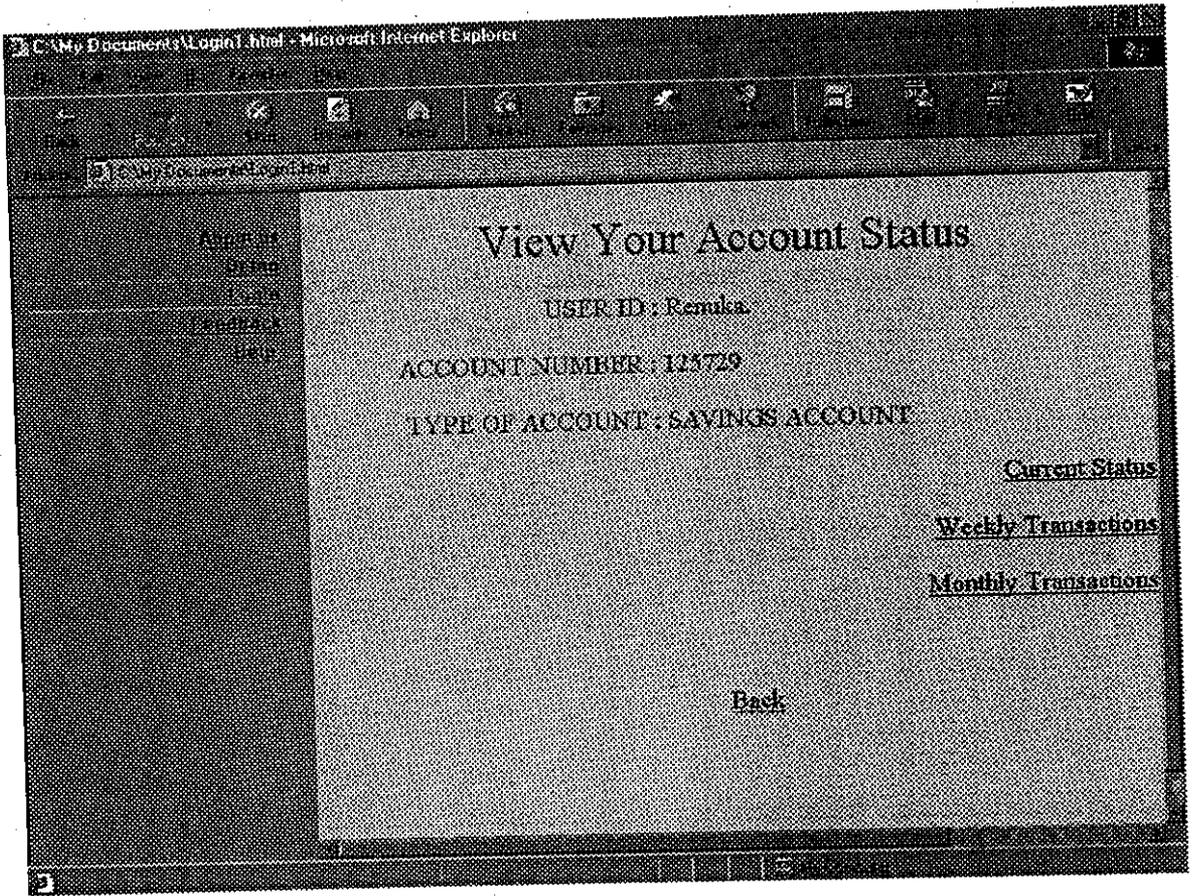
CHOOSE LOGIN-ID

PASSWORD

RE-TYPE PASSWORD

REGISTER





View Your Account Status

USER ID: Ramika

ACCOUNT NUMBER: 123729

TYPE OF ACCOUNT: SAVINGS ACCOUNT

Current Status

Weekly Transactions

Monthly Transactions

Back

C:\My Documents>Login1.html - Microsoft Internet Explorer

http://www.ssc.com/.../login1.html

 **Banking**
Save Time.
Save Money

Admin
Home
Login
Logout
Help

Current Status OF YOUR ACCOUNT

User Id	Account Number	Account Type	View Date	Balance
Aman Gupta	121345	Savings	00301	15648

[Transfer](#) [Withdraw](#) [Deposit](#) [VIEW](#) [Back](#)

C:\My Documents\Login1.html - Microsoft Internet Explorer

Home Back Forward Stop Refresh

http://www.computerbank.com

[Home](#)
[About Us](#)
[Products](#)
[Services](#)
[Contact Us](#)

Your Transactions This Week :

USER ID : Ncha
 ACCOUNT NUMBER : 147241
 TYPE OF ACCOUNT : Current Account

DATE	Credit	Debit	Transferred To	Transferred From	BALANCE
04/02/01	10000	-	147609		89000
04/03/01		15000		149236	104000
04/03/01	11000	-	127633		93600
04/05/01	24000	-	145009		59600

[Transfer](#) [With Draw](#) [Deposit](#) [VIEW](#) [Back](#)

Home Banking - Microsoft Internet Explorer

Transactions Made In This Month

USER ID : Kishore ACCOUNT NUMBER : 146732 TYPE OF ACCOUNT : Current A/C

DATE	CREDIT	DEBIT	TRANSFERED TO	TRANSFERED FROM	BALANCE
03/01/01		10000			3000
03/03/01		15000		137624	9500
03/04/01	6000		14022		39000
03/06/01		4000		140126	13000
03/09/01	7500		140293		35500
03/14/01		7000		129340	92500
03/20/01	10500		140204		12200

C:\My Documents\Login1.html - Microsoft Internet Explorer

ENTER YOUR TRANSACTIONS

USER ID : Radika

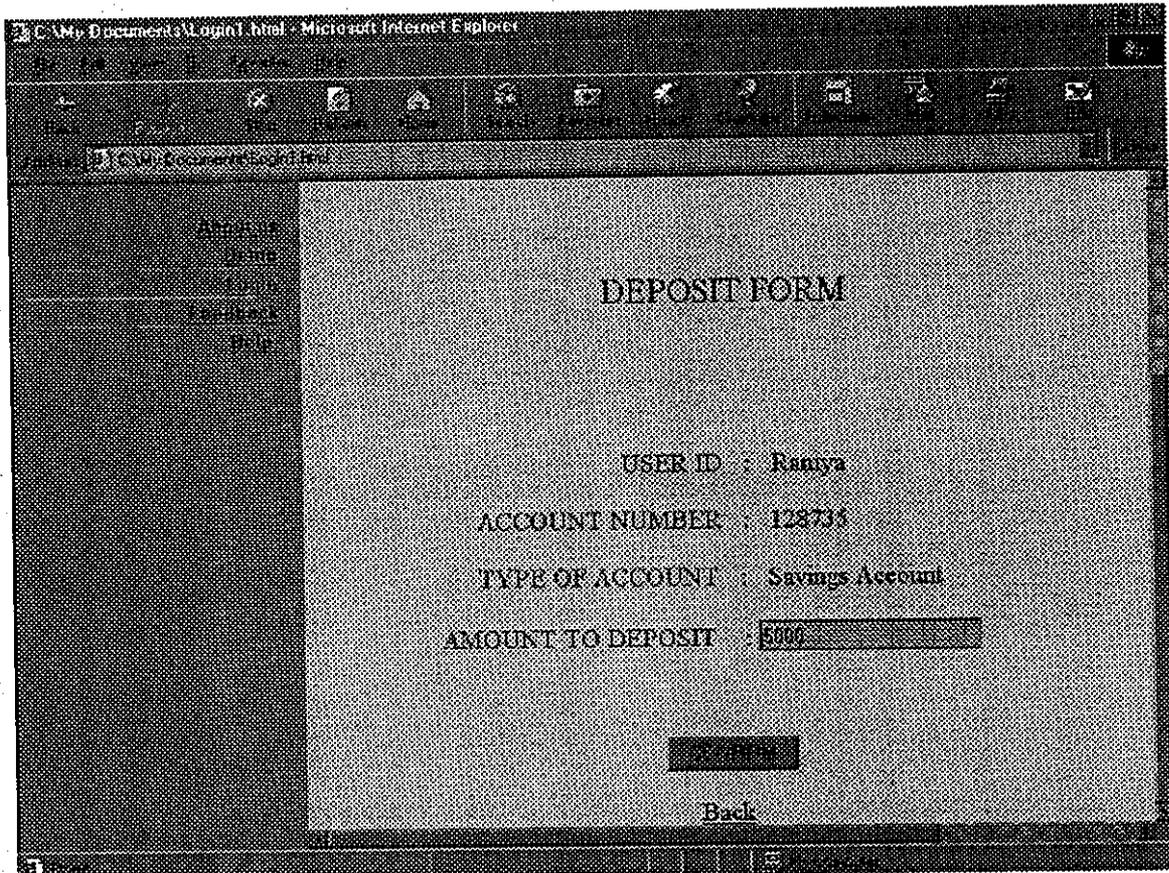
ACCOUNT NUMBER : 1456

TYPE OF ACCOUNT : Current Account

AMOUNT TO TRANSFER

ACCOUNT TO TRANSFER

[Back](#)



DEPOSIT FORM

USER ID : Ranya

ACCOUNT NUMBER : 123733

TYPE OF ACCOUNT : Savings Account

AMOUNT TO DEPOSIT :

[Back](#)

