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# **Online Banking System**

Submitted by

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Submitted for the partial fulfillment for the degree of  
Bachelor of Technology in  
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## **APPROVAL**

This is to certify that the project report entitled "**Online Banking System**" prepared under my supervision by **Nirmallya Kundu, WBUT Roll No. 18700110022**, be accepted in partial fulfillment for the degree of Bachelor of Technology in Computer Science & Engineering which is affiliated to West Bengal University of Technology.

It is to be understood that by this approval, the undersigned does not necessarily endorse or approve any statement made, opinion expressed or conclusion drawn thereof, but approves the report only for the purpose for which it has been submitted.

.....  
Name & Designation of Internal Guide

.....  
Name & Designation of the HOD

# **1. INTRODUCTION**

The adoption of Electronic Banking by commercial enterprises has been in existence since the mid-90s, much greater in number due to lower operating costs associated with it.

Electronic banking has initially been in the form of automatic teller machines and telephone transactions. More recently, it has been transformed by the Internet, a new delivery channel for banking services that benefits both customers and banks.

Internet banking system services can include: Open an account, Balance enquiry, Request for Cheque book, Beneficiary payments (EFT), Viewing monthly statement, apply for e-Fixed Deposit, Fixed Deposit Maturity, Request for closing an account.

Furthermore, customer's application for electronic banking facilities is expanding as the cost savings on transactions over the Internet are significant.

Internet Banking System refers to systems that enable bank customers to Access accounts and general Information on bank products and services through a personal computer or other intelligent device.

The chances and threats that the internet symbolizes are no longer new to the present day banking sector. No traditional bank would dare face investment analysts without an Internet strategy. The main intention behind the commencement of electronic banking services is to provide the customers with an alternative that is more responsive and with less expensive options. With options just a click away, customers have more control than ever. Their expectations are usability and real-time answers. They also want personal attention and highly customized products and services.

## **2. PROBLEM DEFINITION**

### **2.1 Problem Statement**

Internet banking identifies a particular set of technological solutions for the development and the distribution of financial services, which rely upon the open architecture of the Internet. With the implementation of internet banking system, it maintain a direct relationship with the end users via the web and are able to provide a personal characterization to the interface, by offering additional customized services.

### **2.2 Problems with conventional system**

Problems with conventional system are as follows:

- **Lack of immediate retrievals:** - The information is very difficult to retrieve and to find particular information like- E.g.- To find out about the customer transaction history, the user has to go through various registers. This results in inconvenience and wastage of time.
- **Lack of immediate information storage:** - The information generated by various transactions takes time and efforts to be stored at right place.
- **Lack of prompt updating:-** Various changes to information like customer details or admin details are difficult to make as paper work is involved.
- **Error prone manual calculation:-** Manual calculations are error prone and take a lot of time this may result in incorrect information. For example calculation of service charge, bank interest, e-FD interest is error prone.
- **Preparation of accurate and prompt reports:-** This becomes a difficult task as information is difficult to collect from various registers.

### **2.3 Scope of the Study**

The scope of this project is limited to the activities of the operations unit of the banking system which includes opening of Account, Deposit of funds, Electronic funds transfer, Cheque balance and Monthly statement.

In the figure next page, is the use-case diagram of the Internet banking system that the customer can expect all those functions with the bank manager acceptance.

## 2.4 Goals of proposed system

1. **Planned approach towards working:-** The working in the organization will be well planned and organized. The data will be stored properly in data stores, which will help in retrieval of information as well as its storage.
2. **Accuracy:-** The level of accuracy in the proposed system will be higher. All operation would be done correctly and it ensures that whatever information is coming from the centre is accurate.
3. **Reliability:-** The reliability of the proposed system will be high due to the above stated reasons. The reason for the increased reliability of the system is that now there would be proper storage of information.
4. **No Redundancy:-** In the proposed system utmost care would be that no information is repeated anywhere, in storage or otherwise. This would assure economic use of storage space and consistency in the data stored.
5. **Immediate retrieval of information:-** The main objective of proposed system is to provide for a quick and efficient retrieval of information. Any type of information would be available whenever the user requires.
6. **Easy to Operate:-** The system should be easy to operate and should be such that it can be developed within a short period of time and fit in the limited budget.

## 2.5 Limitations of the Internet Banking System

- **Problems of security:** Various sites are not properly locked at to ensure whether the customer's money is safe in cyber world or not.
- **Wrong assumption:** Many people are afraid using Internet Banking because of the assumption that it is more expensive than the traditional method of dealing with bank transactions. They still prefer going to bank to perform transactions.
- **Lack of awareness:** Another great hindrance is lack of awareness because effective and wide media efforts in publishing Internet Banking need to be emphasized.

## **3. PLANNING**

### **3.1 Purpose**

- The Software is for the automation of Banking Facility.
- It maintains two levels of users:-
  - Administrator Level
  - Customer/User Level
- The Software Mainly Includes:-
  - New Account Open Application Form Fill Up
  - View Account Balance
  - Transfer Money
  - View Account Statement
  - Apply for e-FD (Online Fixed Deposit)
  - Admin Verify Account Open Form
  - Admin Verify Money Transfer
  - Admin Verify e-FD

### **3.2 Scope**

It can be used in any Bank for maintaining Customer Account details And all Customer Transaction.

### **3.3 Overview**

- Project is related to Online Banking System
- The project maintains two levels of users:-
  - ✓ Administrator Level- Branch Manager
  - ✓ User Level- Customer

### **3.4 Technologies To Be Used**

This project will be a web based application to be developed in J2EE.

- Database Design (My SQL 5.1)
- Form Design (JSP, HTML, CSS, JAVASCRIPT, AJAX)
- Coding (J2EE, HTML, CSS, JAVASCRIPT, AJAX)
- Testing (J2EE)

### **3.5 Functional Requirements**

- Customer can request details of the last ‘n’ number of transactions he has performed on any account.
- Customer can make a funds transfer to another account in the same bank.
- Customer can request for cheque book.
- Customer can view his monthly statement. She/he can also take print out of the same.
- Customer can make EFT’s to accounts at their and other banks.
- Customer can apply for e-Fixed Deposit.
- The system is providing balance enquiry facility.

### **3.6 Non-Functional Requirements**

Those requirements which are not the functionalities of a system but are the characteristics of a system are called the non-functionalities.

- Secure access of confidential data.
- 24X7 availability
- Better component design to get better performance at peak time
- Flexible service based architecture will be highly desirable for future extensions.

### **3.7 System Requirements Server Side**

- **Software Requirements**
  1. Operating System: Windows or linux or MAC
  2. User Interface: HTML, CSS
  3. Programming Language: J2EE
  4. Database: MYSQL
- **Hardware Requirements**
  1. Processor: any
  2. Hard Disk: 10 GB minimum
  3. RAM: 256MB or more
  4. Any Screen

### **3.8 System Requirements Client Side**

- **Software Requirements**
  1. Operating System: Windows or linux or MAC
  2. User Interface: Any Web Browser, eg. Chrome, Mozilla
- **Hardware Requirements**
  1. Processor: any
  2. Hard Disk: 10 GB minimum
  3. RAM: 256MB or more

## **3.9 Interface**

### **3.9.1 System Interface**

Application would be a self-contained system. It will not access data of any other application nor will other application have access to its data.

### **3.9.2 User Interface**

Application will be accessed through a Browser Interface. The interface would be viewed best using 1024 x 768 and 800 x 600 pixels resolution setting. The software would be fully compatible with Microsoft Internet Explorer for version 6 and above. No user would be able to access any part of the application without logging on to the system.

### **3.9.3 Hardware Interface**

#### **➤ For Server**

1. Intel Pentium III or above with
2. 512 MB RAM
3. 4 GB hard disk
4. Network Interface

#### **➤ For Client**

1. PC With
2. 256 MB RAM
3. Network Interface

### **3.9.4 Communication Interface**

The system should be accessed over LAN or WAN. For Clients to access application server the network should be running TCP/IP protocol.

## **3.10 Operations**

#### **➤ Client Side**

Interactive operations using options provided in the application, Example Data Entry generation and viewing of reports.

#### **➤ Server Side**

Database backup should be taken every day. In case of data base crash, last backup should be restored.

## 3.11 User Characteristics

The end user of the software can be divided into two categories

- **Administrator:** Access to master forms for the purpose of data entry and generation of reports.
- **Customer:** Access to his corresponding records and giving updating his record only.

## 3.12 Constraints & Assumptions

- **Constraints** - As this system is based on client server technology, so for normal operation minimum of 64 MB RAM will be required on all clients.
  1. User interface is only in English i.e. no other language option is available.
  2. User can login only with his username and password i.e. no guest facility is available
- **Assumptions** - In general it has been assumed that the user has complete knowledge of the system that means user is not a naïve user. Any data entered by him/her will be valid. To make the software as user friendly as possible but at the same time keeping in mind user requirements.

## 3.13 Project Scheduling

Pert chart and Gantt chart both are the project scheduling method. These are part of work break structure (WBS). In breaking down the work we are trying to decide which task is need to be done first. In scheduling, we decide the order how to do these tasks. Each work item in the WBS is associated with an activity tool performing that item. A schedule tries to order the activities tool ensure their timely completion.

Merely identifying project time requirement does not produce the number of days, a week or months to build in to the project schedule. It is only one factor. In most system project additional time is used on project activities. Management meeting, project reviews, education and training, interaction with users, seek time; vacation and holidays extend to schedule beyond the previous estimate.

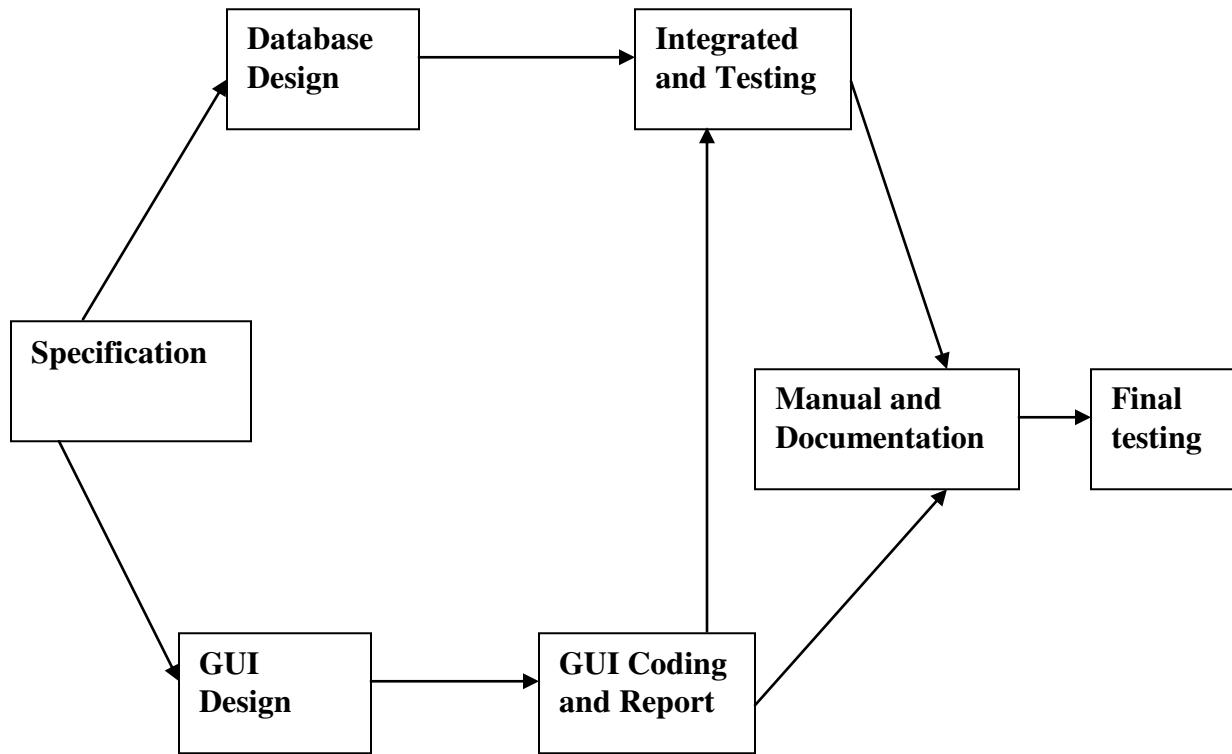
### 3.13.1 Gantt Chart

Activity	Weeks										
	1	2	3	4	5	6	7	8	9	10	11
Specification											
Design Database											
Design GUI Part											
Coding Part Report											
Integrated and Test											
Write Manual											

It was developed by Henry.L.Gantt. it is the project control technique used that can be used for scheduling and budgeting and resource planning . Gantt chart is a bar chart, with each bar representing an activity. The bars are drawn against timeline. The length of each bar is proportional to the length of time planed for the activity.

Our project planning uses above bar charts that show each activity in a system project. This chart uses bars to indicate the amount of time spent on each task the task are listed from top to bottom on the left side of the chart. Calendar time is shown from left to right in weeks horizontal bar is marked on the chart for each task, indicating when it start and when it is expected to be completed. So the first task is the system requirement specification is planed to take two weeks. The data base design and related component like normalization and relation is planed to take two weeks which will 3rd and 4 weeks. The third task is designed the front end it is scheduled to be done in three weeks, i.e. 3, 4, and 5th weeks. Then the coding and reporting part are scheduled to cover in 5 weeks i.e from 4th to 8th week. Only coding will take 2 to 3 week and the reporting part, which is a most important part. Then comes the integration of modules and testing is scheduled to be done in 3 weeks i.e. 8th to 10th week. The last part of the project is the overall documentation. This documentation includes user manual and others. It is scheduled to complete in 3 weeks.

### 3.13.2 Pert Chart



PERT (Project evolution and review technique). This consists of network of boxes and arrows. The boxes represent activities and the arrows represent task dependencies. PERT chart are more sophisticated form of activity chart, were instead of making a single estimate for each task pessimistic, likely and optimistic estimates are made. The boxes are usually annotated with the pessimistic, likely and optimistic estimate every task.

## **3.14. Feasibility Study**

Depending on the results of the initial investigation the survey is now expanded to a more detailed feasibility study. “**FEASIBILITY STUDY** ” is a test of system proposal according to its workability, impact of the organization, ability to meet needs and effective use of the resources. It focuses on these major questions:

1. What are the user’s demonstrable needs and how does a candidate system meet them?
2. What resources are available for given candidate system?
3. What are the likely impacts of the candidate system on the organization?
4. Whether it is worth to solve the problem?

During feasibility analysis for this project, following primary areas of interest are to be considered. Investigation and generating ideas about a new system does this.

### **Steps in feasibility analysis:**

Eight steps involved in the feasibility analysis are:

1. Form a project team and appoint a project leader.
2. Prepare system flowcharts.
3. Enumerate potential proposed system.
4. Define and identify characteristics of proposed system.
5. Determine and evaluate performance and cost effective of each proposed system.
6. Weight system performance and cost data.
7. Select the best-proposed system.
8. Prepare and report final project directive to management.

### **3.14.1 Technical Feasibility**

A study of resource availability that may affect the ability to achieve an acceptable system. This evaluation determines whether the technology needed for the proposed system is available or not.

- Can the work for the project be done with current equipment existing software technology & available personal?
- Can the system be upgraded if developed?
- If new technology is needed then what can be developed?

This is concerned with specifying equipment and software that will successfully satisfy the user requirement. The technical needs of the system may include:

#### **➤ Front-end and back-end selection:**

An important issue for the development of a project is the selection of suitable front-end and back-end. When we decided to develop the project we went through an extensive study to determine the most suitable platform that suits the needs of the organization as

well as helps in development of the project. The aspects of our study included the following factors.

➤ **Front-end selection:**

1. It must have a graphical user interface that assists employees that are not from IT background.
2. Scalability and extensibility.
3. Flexibility.
4. Robustness.
5. According to the organization requirement and the culture.
6. Must provide excellent reporting features with good printing support.
7. Platform independent.
8. Easy to debug and maintain.
9. Event driven programming facility.
10. Front end must support some popular back end like MySQL.

According to the above stated features we selected J2EE as the front-end for developing our project.

➤ **Back-end Selection:**

1. Multiple user support.
2. Efficient data handling.
3. Provide inherent features for security.
4. Efficient data retrieval and maintenance.
5. Stored procedures.
6. Popularity.
7. Operating System compatible.
8. Easy to install.
9. Various drivers must be available.
10. Easy to implant with the Front-end.

According to above stated features we selected MySQL as the backend.

The technical feasibility is frequently the most difficult area encountered at this stage. It is essential that the process of analysis and definition be conducted in parallel with an assessment to technical feasibility. It centres on the existing computer system (hardware, software etc.) and to what extent it can support the proposed system.

### **3.14.2   Economical feasibility**

Economic justification is generally the “Bottom Line” consideration for most systems. Economic justification includes a broad range of concerns that includes cost benefit analysis. In this we weight the cost and the benefits associated with the candidate system and if it suits the basic purpose of the organization i.e. profit making, the project is making to the analysis and design phase. The financial and the economic questions during the preliminary investigation are verified to estimate the following:

- The cost to conduct a full system investigation
- The cost of hardware and software for the class of application being considered.

- The benefits in the form of reduced cost.
- The proposed system will give the minute information, as a result the performance is improved which in turn may be expected to provide increased profits.
- This feasibility checks whether the system can be developed with the available funds.

The **Online Banking System** does not require enormous amount of money to be developed. This can be done economically if planned judicially, so it is economically feasible. The cost of project depends upon the number of man-hours required.

### **3.14.3 Operational Feasibility**

It is mainly related to human organizations and political aspects. The points to be considered are:

- What changes will be brought with the system?
- What organization structures are disturbed?
- What new skills will be required? Do the existing staff members have these skills? If not, can they be trained in due course of time?

The system is operationally feasible as it very easy for the End users to operate it. It only needs basic information about Windows platform.

### **3.14.3 Schedule Feasibility**

Time evaluation is the most important consideration in the development of project. The time schedule required for the developed of this project is very important since more development time effect machine time, cost and cause delay in the development of other systems. A reliable **Online Banking System** can be developed in the considerable amount of time.

#### ***How feasible is the system proposed?***

This was analyzed by comparing the following factors with both the existing system and proposed system.

##### **➤ Cost**

The cost required in the proposed system is comparatively less to the existing system.

##### **➤ Effort**

Compared to the existing system the proposed system will provide a better working environment in which their will be ease of work and the effort required will be comparatively less than the existing system.

##### **➤ Time**

Also the time required generating a report or for doing any other work will be comparatively very less than in the existing system. Record finding and updating will take less time than the existing system.

##### **➤ Labor**

In the existing system the number of staff required for completing the work is more while the new system will require quite less number of staff.

## 4. DESIGN ISSUES

### 4.1 HIGH LEVEL DESIGN (OBJECT ORIENTED ANALYSIS)

This module presents the object oriented view of the system, analysis of the high level design and describes the objects needed to implement the system. Each one of these objects is described and documented, and a data dictionary providing details of each object is provided.

#### 4.1.1 Data Dictionary

**Table No.** : 1

**Table Name** : NEWS

**Description** : This table is used to store the Latest News regarding the bank.

Field	Type	Null	Key	Extra
SERIAL	INT(11)	NO	PRI	AUTO_INCREMENT
HEADING	VARCHAR(100)	NO		
DETAILS	VARCHAR(400)	NO		
TIMESTAMP1	DATE	NO		
STATUS	VARCHAR(50)	NO		

**Table No.** : 2

**Table Name** : STATEANDCITY

**Description** : This table is used to store all the cities and corresponding states of India.

Field	Type	Null	Key	Extra
SERIAL	INT(11)	NO	PRI	AUTO_INCREMENT
STATE	VARCHAR(50)	NO		
CITY	VARCHAR(50)	NO		

**Table No.** : 3

**Table Name** : BRANCHDETAILS

**Description** : This table is used to store the details of the branches of the bank.

Field	Type	Null	Key	Extra
SERIAL	INT(11)	NO		
BRANCHCODE	VARCHAR(50)	NO	PRI	
BRANCHNAME	VARCHAR(50)	NO		
BRANCHSTATE	VARCHAR(50)	NO		
BANKCITY	VARCHAR(50)	NO		
BRANCHPINCODE	VARCHAR(50)	NO		
BRANCHADDRESS	VARCHAR(100)	NO		

STATUS	VARCHAR(50)	NO		
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**Table No.** : 4

**Table Name** : COMPLAINBOX

**Description** : This table is used to store the registered complaint of the customer.

Field	Type	Null	Key	Extra
SERIAL	INT(11)	NO	PRI	AUTO_INCREMENT
EMAIL	VARCHAR(50)	NO		
SUBJECT	VARCHAR(1000)	NO		
COMPLAIN	VARCHAR(1000)	NO		
REPLY	VARCHAR(1000)	YES		
STATUS	VARCHAR(50)	NO		

**Table No.** : 5

**Table Name** : APPLICATION

**Description** : This table is used to generate the application numbers.

Field	Type	Null	Key	Extra
SERIAL	INT(11)	NO	PRI	AUTO_INCREMENT
APPLICATIONNO	INT(11)	NO		

**Table No.** : 6

**Table Name** : PERSONALDETAILS

**Description** : This table is used to store the personal details of the customer

Field	Type	Null	Key	Extra
APPLICATIONNO	INT(11)	NO	MUL	
CID	VARCHAR(50)	NO	PRI	
BRANCHCODE	VARCHAR(50)	NO	MUL	
CTYPE	VARCHAR(50)	NO		
CAGE	VARCHAR(50)	NO		
SALUTATION	VARCHAR(50)	NO		
FNAME	VARCHAR(50)	NO		
MNAME	VARCHAR(50)	YES		
LNAME	VARCHAR(50)	NO		
GUARDIAN	VARCHAR(50)	NO		
GSALUTATION	VARCHAR(50)	NO		
GNAME	VARCHAR(50)	NO		
DOB	DATE	NO		
GENDER	VARCHAR(50)	NO		

NATIONALITY	VARCHAR(50)	NO		
MAIDEN	VARCHAR(50)	NO		
MARITAL	VARCHAR(50)	NO		
UIDLABEL	VARCHAR(50)	YES		
UIDNO	VARCHAR(50)	YES		
HOMENO	VARCHAR(50)	YES		
STREET	VARCHAR(50)	YES		
LANDMARK	VARCHAR(50)	YES		
DISTRICT	VARCHAR(50)	YES		
CITY	VARCHAR(50)	NO		
STATE	VARCHAR(50)	NO		
PINCODE	VARCHAR(50)	NO		
ADDSAME	VARCHAR(50)	NO		
XHOMENO	VARCHAR(50)	YES		
XSTREET	VARCHAR(50)	YES		
XLANDMARK	VARCHAR(50)	YES		
XDISTRICT	VARCHAR(50)	YES		
XCITY	VARCHAR(50)	NO		
XSTATE	VARCHAR(50)	NO		
XPINCODE	VARCHAR(50)	NO		
MPCODE	VARCHAR(50)	YES		
MOBILE	VARCHAR(50)	NO		
LPCODE	VARCHAR(50)	YES		
LANDLINE	VARCHAR(50)	NO		
EID	VARCHAR(50)	YES		
EDOAMIN	VARCHAR(50)	YES		
EMAIL	VARCHAR(50)	NO		
DOR	DATE	NO		
STATUS	VARCHAR(50)	NO		

**Table No.**

: 7

**Table Name**

: FORM60

**Description**

: This table is used to store the Form 60/61 details of the customer those who do not have IT PAN Card.

Field	Type	Null	Key	Extra
FORM60NO	INT(11)	NO	PRI	

CID	VARCHAR(50)	NO	MUL	
FULLNAME	VARCHAR(50)	NO		
ADDRESS	VARCHAR(100)	NO		
OPENINGOF	VARCHAR(50)	NO		
ISSUEOF	VARCHAR(50)	NO		
TAMOUNT	DECIMAL(12,2)	NO		
TAX	VARCHAR(3)	NO		
DOCUMENT	VARCHAR(200)	NO		
STATUS	VARCHAR(50)	NO		

**Table No.** : 8

**Table Name** : ADDITIONALDETAILS

**Description** : This table is used to store the additional details of the customer

Field	Type	Null	Key	Extra
APPLICATIONNO	INT(11)	NO	PRI	
CID	VARCHAR(50)	NO	MUL	
RELIGION	VARCHAR(50)	YES		
CATEGORY	VARCHAR(50)	YES		
EDUCATION	VARCHAR(50)	NO		
OCCUPATION	VARCHAR(50)	NO		
ORGANIZATION	VARCHAR(50)	YES		
DESIGNATION	VARCHAR(50)	YES		
INCOME	VARCHAR(50)	NO		
TERM	VARCHAR(50)	NO		
ASSETVALUE	DECIMAL(12,2)	YES		
VEHICLE	VARCHAR(50)	YES		
LIFEINSURANCEVALUE	DECIMAL(12,2)	YES		
LIFEINSURANCE	VARCHAR(50)	YES		
LOAN	VARCHAR(50)	YES		
HOUSE	VARCHAR(50)	YES		
MUTUALFUND	VARCHAR(50)	YES		
CREDITCARD	VARCHAR(50)	YES		
IT	VARCHAR(50)	NO		
ITNO	VARCHAR(50)	NO		
STATUS	VARCHAR(50)	NO		

**Table No.** : 9  
**Table Name** : PERSONALIDENTIFICATION  
**Description** : This table is used to store the personal identification details of the customer

Field	Type	Null	Key	Extra
APPLICATIONNO	INT(11)	NO	PRI	
CID	VARCHAR(50)	NO	MUL	
POILABEL	VARCHAR(50)	NO		
POINO	VARCHAR(50)	NO		
POIPLACE	VARCHAR(50)	YES		
POIDATE	DATE	YES		
POALABEL	VARCHAR(50)	NO		
POANO	VARCHAR(50)	NO		
POAPLACE	VARCHAR(50)	YES		
POADATE	DATE	YES		
OTHERACCOUNT	INT(11)	NO		
STATUS	VARCHAR(50)	NO		

**Table No.** : 10  
**Table Name** : OTHERACCOUNTS  
**Description** : This table is used to store other accounts of a customer in same/different other banks.

Field	Type	Null	Key	Extra
SERIAL	VARCHAR(50)	NO	PRI	AUTO_INCREMENT
CID	VARCHAR(50)	NO	MUL	
BANK	VARCHAR(50)	NO		
BRANCH	VARCHAR(50)	YES		
ACCOUNTTYPE	VARCHAR(50)	YES		
ACCOUNTNO	VARCHAR(50)	YES		
STATUS	VARCHAR(50)	YES		

**Table No.** : 11  
**Table Name** : APPLICATIONSTATUS  
**Description** : This table is used to store the current status of the customer SB Account open application.

Field	Type	Null	Key	Extra
APPLICATIONNO	INT(11)	NO	PRI	
CID	VARCHAR(50)	NO	MUL	
EMAIL	VARCHAR(50)	YES		

BRANCHCODE	VARCHAR(50)	NO		
STATUS	VARCHAR(50)	NO		
REMARKS	VARCHAR(100)	YES		

**Table No.** : 12

**Table Name** : CUSTOMERACCOUNT

**Description** : This table is used to store the customer account details.

Field	Type	Null	Key	Extra
SERIAL	INT(11)	NO		
ACCOUNTNO	VARCHAR(50)	NO	PRI	
CID	VARCHAR(50)	NO	MUL	
BRANCHCODE	VARCHAR(50)	NO		
EMAIL	VARCHAR(50)	NO		
USERNAME	VARCHAR(50)	NO		
PASSWORD	VARCHAR(50)	NO		
BALANCE	DOUBLE	NO		
STATUS	VARCHAR(50)	YES		

**Table No.** : 13

**Table Name** : CUSTOMERSETTINGS

**Description** : This table is used to store the customer account settings.

Field	Type	Null	Key	Extra
USERNAME	VARCHAR(50)	NO	PRI	
ACCOUNTNO	VARCHAR(50)	NO	MUL	
PASSWORD	VARCHAR(50)	NO		
QUESTION	VARCHAR(50)	NO		
ANSWER	VARCHAR(50)	NO		
TWOSTEPVERIFICATION	VARCHAR(50)	NO		
SETTINGS	VARCHAR(1000)	YES		
STATUS	VARCHAR(50)	NO		

**Table No.** : 14

**Table Name** : CUSTOMERLOGIN

**Description** : This table is used to store the login details of the customer.

Field	Type	Null	Key	Extra
SERIAL	INT(11)	NO	PRI	AUTO_INCREMENT
USERNAME	VARCHAR(50)	NO		
IPADDRESS	VARCHAR(50)	NO		

LOGINTIMESTAMP	TIMESTAMP	NO		ON CURRENT_TIMESTAMP	UPDATE
----------------	-----------	----	--	----------------------	--------

**Table No.** : 15

**Table Name** : ADDCUSTOMERACCOUNT

**Description** : This table is used to store multiple account numbers of a customer.

Field	Type	Null	Key	Extra
SERIAL	INT(11)	NO	PRI	AUTO_INCREMENT
USERNAME	VARCHAR(50)	YES		
ACCOUNTNO	VARCHAR(50)	YES		
STATUS	VARCHAR(50)	YES		

**Table No.** : 16

**Table Name** : MONEYTRANSFER

**Description** : This table is used to store the Fund Transfer/Money Transfer transaction details of the customer.

Field	Type	Null	Key	Extra
TRANSACTIONID	VARCHAR(50)	NO	PRI	
BRANCHCODE	VARCHAR(50)	NO		
EMAIL	VARCHAR(50)	NO		
SENDER_ACCOUNTNO	VARCHAR(50)	NO	MUL	
RECEIVER_ACCOUNTNO	VARCHAR(50)	NO		
RECEIVER_BANK	VARCHAR(50)	NO		
AMOUNT	DOUBLE	NO		
BANKCHARGES	DOUBLE	NO		
TOTALAMOUNT	DOUBLE	NO		
TRANSACTIONTIMESTAMP	TIMESTAMP	NO		ON UPDATE CURRENT_TIMESTAMP
STATUS	VARCHAR(50)	NO		

**Table No.** : 17

**Table Name** : FIXEDDEPOSITSCHEME

**Description** : This table is used to store the E-Fixed Deposit details of all the schemes available.

Field	Type	Null	Key	Extra
SERAIL	VARCHAR(50)	NO	PRI	
CUSTOMERTYPE	VARCHAR(50)	NO	MUL	
CUSTOMERAGE	VARCHAR(50)	NO		
MIN_DAYS	INT(11)	NO		
MAX_DAYS	INT(11)	NO		

INTEREST	DOUBLE	NO		
PREMATUREPENALTY	DOUBLE	NO		
STATUS	VARCHAR(50)	NO		

**Table No.** : 18

**Table Name** : FIXEDDEPOSITDETAILS

**Description** : This table is used to store the E-Fixed Deposit details of the customer

Field	Type	Null	Key	Extra
FID	VARCHAR(50)	NO	PRI	
ACCOUNTNO	VARCHAR(50)	NO	MUL	
BRANCHCODE	VARCHAR(50)	NO		
CTYPE	VARCHAR(50)	NO		
CAGE	VARCHAR(50)	NO		
NAME	VARCHAR(50)	NO		
DOB	DATE	NO		
NATIONALITY	VARCHAR(50)	NO		
UIDLABEL	VARCHAR(50)	YES		
UIDNO	VARCHAR(50)	YES		
CADDRESS	VARCHAR(500)	NO		
PADDRESS	VARCHAR(500)	NO		
MOBILE	VARCHAR(50)	NO		
LANDLINE	VARCHAR(50)	NO		
EMAIL	VARCHAR(50)	NO		
IT	VARCHAR(50)	NO		
ITNO	VARCHAR(50)	NO		
STATUS	VARCHAR(50)	NO		

**Table No.** : 19

**Table Name** : FIXEDDEPOSIT

**Description** : This table is used to store the E-Fixed Deposit transaction details of the customer

Field	Type	Null	Key	Extra
TRANSACTIONID	VARCHAR(50)	NO	PRI	
FID	VARCHAR(50)	NO	MUL	
ACCOUNTNO	VARCHAR(50)	NO	MUL	
BRANCHCODE	VARCHAR(50)	NO		
EMAIL	VARCHAR(50)	NO		

AMOUNT	DOUBLE	NO		
INTEREST	DOUBLE	NO		
PREMATUREPENALTY	DOUBLE	NO		
TERM	INT(11)	NO		
START_DATE	DATE	NO		
END_DATE	DATE	NO		
TRANSACTION TIMESTAMP	TIMESTAMP	NO	ON UPDATE CURRENT_TIMESTAMP	
STATUS	VARCHAR(50)	NO		

**Table No.** : 20

**Table Name** : FIXEDDEPOSITMATURE

**Description** : This table is used to store the E-Fixed Deposit maturity details.

Field	Type	Null	Key	Extra
SERIAL	INT(11)	NO	PRI	AUTO_INCREMENT
FID	VARCHAR(50)	NO	MUL	
TRANSACTIONID	VARCHAR(50)	NO	MUL	
ACCOUNTNO	VARCHAR(50)	NO		
BRANCHCODE	VARCHAR(50)	NO		
AMOUNT	DOUBLE	NO		
INTERESTAMOUNT	DOUBLE	NO		
PREMATUREPENALTYAMOUNT	DOUBLE	NO		
TOTALAMOUNT	DOUBLE	NO		
MATURE_DATE	DATE	NO		

**Table No.** : 21

**Table Name** : TRANSACTIONDETAILS

**Description** : This table is used to store the each and every transaction details of the customer.

Field	Type	Null	Key	Extra
SERIAL	INT(11)	NO	PRI	AUTO_INCREMENT
ACCOUNTNO	VARCHAR(50)	NO	MUL	
BRANCHCODE	VARCHAR(50)	NO		
TRANSACTIONID	VARCHAR(50)	NO		
TRANSACTIONTYPE	VARCHAR(50)	NO		
TRANSACTIONAMOUNT	DOUBLE	NO		
BALANCE	DOUBLE	NO		
REMARKS	VARCHAR(100)	NO		

TRANSACTIONTIMESTAMP	TIMESTAMP	NO		ON CURRENT_TIMESTAMP	UPDATE
STATUS	VARCHAR(50)	NO			

**Table No.** : 22

**Table Name** : ADMINACCOUNT

**Description** : This table is used to store the details of the administrators.

Field	Type	Null	Key	Extra
USERNAME	VARCHAR(50)	NO	PRI	
PASSWORD	VARCHAR(50)	NO		
BRANCHCODE	VARCHAR(50)	NO		
NAME	VARCHAR(100)	NO		
EMAIL	VARCHAR(50)	NO		
STATUS	VARCHAR(50)	NO		

**Table No.** : 23

**Table Name** : ADMINLOGIN

**Description** : This table is used to store the login details of the administrators.

Field	Type	Null	Key	Extra
SERIAL	INT(11)	NO	PRI	AUTO_INCREMENT
USERNAME	VARCHAR(50)	NO		
LOGINTIMESTAMP	TIMESTAMP	NO		ON UPDATE CURRENT_TIMESTAMP
IPADDRESS	VARCHAR(50)	NO		

**Table No.** : 24

**Table Name** : BANKCONSTRAINTS

**Description** : This table is used to store the constraints to be imposed on the customer as per the bank rules and regulations.

Field	Type	Null	Key	Extra
SERIAL	INT(11)	NO	PRI	AUTO_INCREMENT
NAME	VARCHAR(100)	NO		
VALUE	VARCHAR(100)	NO		
TYPE	VARCHAR(50)	NO		

**Table No.** : 25

**Table Name** : BANKACCOUNT

**Description** : This table is used to store the transaction details of the Bank

Field	Type	Null	Key	Extra
SERIAL	INT(11)	NO	PRI	AUTO_INCREMENT
TRANSACTIONID	VARCHAR(50)	NO		
ACCOUNTNO	VARCHAR(50)	NO		

BRANCHCODE	VARCHAR(100)	NO		
BANKCHARGES	DOUBLR	NO		
TRANSACTIONTYPE	VARCHAR(50)			
TRANSACTIONTIMESTAMP	TIMESTAMP		ON CURRENT_TIMESTAMP	UPDATE
STATUS	VARCHAR(50)	NO		

## 4.1.2 Data Operations

Operation	JSP Files	Associated Servlet, Data Access Objects, Java Beans
Bank Home Page	BankOfBengalHome.jsp	NewsDAO.java, News.java
SB Account Opening Registration	OnlineAccOpenFormPart1.jsp, OnlineAccOpenFormPart2.jsp, OnlineAccOpenFormPart3.jsp, BranchChooserWindow.jsp, BranchChooserAjax.jsp, GetCityFromStateAjax.jsp	Form1PersonalDetailsServlet.java, Form2AdditionalDetailsServlet.java, Form3PersonalIdentificationServlet.java, Form1PersonalDetailsDAO.java, Form2AdditionalDetailsDAO.java, Form3PersonalIdentificationDAO.java, OtherAccountsDAO.java, Form60DAO.java, StateAndCityDAO.java, BranchDetailsDAO.java, ApplicationStatusDAO.java, Form1PersonalDetails.java, Form2AdditionalDetails.java, Form3PersonalIdentification.java, StateAndCity.java, BranchDetails.java, OtherAccounts.java, Form60.java, ApplicationStatus.java, SendEmail.java
SB Account Opening Application Status	ApplicationStatus.jsp, ApplicationStatusAjax.jsp	ApplicationStatusDAO.java, ApplicationStatus.java
Customer Login	CustomerLogin.jsp,	CustomerLoginServlet.java, CustomerAccountDAO.java, CustomerLoginDAO.java, CustomerAccount.java, CustomerLogin.java, PasswordEncryption.java
Customer Change Default Password After 1 <sup>st</sup> Login	ChangeDefaultPassword.jsp	ChangeDefaultPasswordServlet.java, CustomerAccountDAO.java, CustomerLoginDAO.java, CustomerSettingsDAO.java, CustomerAccount.java, CustomerLogin.java, CustomerSettings.java, PasswordEncryption.java
Customer Logout	CustomerLogout.jsp	

Customer Home Page	CustomerHome.jsp, CustomerWelcome.jsp	CustomerAccountDAO.java, CustomerAccount.java
Customer Account(s) Add/Link	AddCustomerAccount.jsp	AddCustomerAccountServlet.java, AddCustomerAccountDAO.java, AddCustomerAccount.java
Customer Account(s) Balance Details	CustomerAccountDetails.jsp, CustomerAccountDetailsAjax.jsp	CustomerAccountDAO.java, CustomerAccount.java
Customer Transfer Money To Other Account	CustomerAccountSelectMT.jsp, CustomerTransferMoney.jsp, CustomerTransferMoneySuccessful.jsp, CustomerInsufficientBalance.jsp, CustomerPasswordMismatch.jsp, CustomerAccountSelectAjax.jsp	CustomerAccountSelectMTServlet.java, CustomerTransferMoneyServlet.java, CustomerAccountDAO.java, AddCustomerAccountDAO.java, MoneyTransferDAO.java, TransactionDetailsDAO.java, BankAccountDAO.java, BankConstraintsDAO.java, CustomerAccount.java, AddCustomerAccount.java, MoneyTransfer.java, TransactionDetails.java, BankAccount.java, BankConstraints.java, SendEmail.java, PasswordEncryption.java
Customer Applying For e-FD (Online Fixed Deposit)	OnlineFDPart1.jsp, CustomerAccountSelectFD.jsp, OnlineFDPart2.jsp, OnlineFDPart3.jsp, OnlineFDPart1Ajax.jsp, OnlineFDPart2Ajax.jsp, OnlineFDPart3Ajax.jsp, CustomerAccountSelectAjax.jsp, CustomerPasswordMismatch.jsp, CustomerInsufficientBalance.jsp	CustomerAccountSelectFDServlet.java, OnlineFDPart2Servlet.java, OnlineFDPart3Servlet.java, CustomerAccountDAO.java, AddCustomerAccountDAO.java, FixedDepositDAO.java, FixedDepositDetailsDAO.java, BankAccountDAO.java, BankConstraintsDAO.java, TransactionDetailsDAO.java, FixedDepositSchemeDAO.java, CustomerAccount.java, AddCustomerAccount.java, FixedDepositScheme.java, FixedDeposit.java, FixedDepositDetails.java, BankAccount.java, BankConstraints.java, TransactionDetails.java, SendEmail.java, PasswordEncryption.java
Customer Last Transaction Details 3	CustomerAccountSelectTD.jsp, CustomerTransactionDetails.jsp, CustomertransactionDetailsAjax.jsp, CustomerAccountSelectAjax.jsp	CustomerAccountSelectTDServlet.java, CustomerAccountDAO.java, AddCustomerAccountDAO.java, TransactionDetailsDAO.java, CustomerAccount.java, AddCustomerAccount.java, TransactionDetails.java
Customer Account	CustomerAccountSelectTS.jsp,	CustomerAccountSelectTSServlet.java,

Statement Yearly/Monthly	CustomerTransactionStatement.jsp, CustomertransactionStatementAjax.jsp, CustomerAccountSelectAjax.jsp	CustomerAccountDAO.java, AddCustomerAccountDAO.java, TransactionDetailsDAO.java, CustomerAccount.java, AddCustomerAccount.java, TransactionDetails.java
Customer Last 5 Login Details	CustomerLoginDetails.jsp, CustomerLoginDetailsAjax.jsp	CustomerLoginDAO.java, CustomerLogin.java
Customer Request For Closing An Account	CustomerAccountClose.jsp, AccountCloseSuccess.jsp, AccountCloseFailure.jsp, CustomerAccountSelectAjax.jsp	CustomerAccountCloseServlet.java, CustomerSettingsDAO.java, CustomerAccountDAO.java, AddCustomerAccountDAO.java, CustomerSettings.java, CustomerAccount.java, AddCustomerAccount.java, SendEmail.java, PasswordEncryption.java
Customer Register A Complain/ Ask A Query	ComplainRegister.jsp, ComplainRegistered.jsp	ComplainEntryServlet.java, ComplainBoxDAO.java, ComplainBox.java
Customer Change Password	CustomerChangePassword.jsp, CustomerWelcome.jsp	CustomerChangePasswordServlet.java, CustomerAccountDAO.java, CustomerSettingsDAO.java, CustomerAccount.java, CustomerSettings.java, SendEmail.java, PasswordEncryption.java
Admin Login	Admin Login.jsp	AdminLoginServlet.java, AdminAccountDAO.java, AdminLoginDAO.java, AdminAccount.java, AdminLogin.java, PasswordEncryption.java
Admin Change Default Password After 1 <sup>st</sup> Login	AdminChangeDefaultPasssword.jsp	AdminChange DefaultPasswordServlet.java, AdminAccountDAO.java, AdminAccount.java, AdminPasswordEncryption.java
Admin Logout	AdminLogout.jsp	
Admin Home Page	AdminHome.jsp	AdminAccountDAO.java, AdminAccount.java
Admin Update Bank News	AdminUpdateLatestNews.jsp, AdminUpdateLatestNewsSuccessful.jsp	UpdateLatestNewsServlet.java, NewsDAO.java, News.java
Admin View All Bank News	AdminViewLatestNews.jsp, AdminViewLatestNewsAjax.jsp	NewsDAO.java, News.java
Admin Delete One or Multiple Bank News	AdminDeleteLatestNews.jsp, AdminViewLatestNewsAjax.jsp, AdminDeleteLatestNewsAjax.jsp	NewsDAO.java, News.java

Admin Verify SB Account Application And Allot Account No.	AdminVerifyApplications.jsp, AdminVerifyFormPart1.jsp, AdminVerifyFormPart2.jsp, AdminVerifyFormPart3.jsp, AdminVerifyFinalStage.jsp, AdminVerifyApplicationsAjax.jsp, AdminVerifyFormPart1Ajax.jsp, AdminVerifyFormPart2Ajax.jsp, AdminVerifyFormPart3Ajax.jsp, AdminVerifyFinalStageAjax.jsp, AdminVerifyFinalAcceptAjax.jsp, AdminVerifyFinalRejectAjax.jsp	CustomerAccountDAO.java, ApplicationStatusDAO.java, Form1PersonalDetailsDAO.java, Form2AdditionalDetailsDAO.java, Form3PersonalIdentificationDAO.java, OtherAccountsDAO.java, Form60DAO.java, BranchDetailsDAO.java, CustomerAccount.java, ApplicationStatus.java Form1PersonalDetails.java, Form2AdditionalDetails.java, Form3PersonalIdentification.java, BranchDetails.java, OtherAccounts.java, Form60.java, SendEmail.java, PasswordGenerator.java, PasswordEncryption.java
Admin Edit SB Account Application Form	AdminEditFormPart1.jsp, AdminEditFormPart2.jsp, AdminEditFormPart3.jsp, AdminViewForm60Window.jsp, AdminEditFormSuccess.jsp, CityChooserWindow.jsp XCityChooserWindow.jsp, AdminEditFormPart1Ajax.jsp, AdminEditFormPart2Ajax.jsp, AdminEditFormPart3Ajax.jsp, AdminViewForm60Ajax.jsp, GetCityFromStateAjax.jsp	AdminEditForm1Servlet.java, AdminEditForm2Servlet.java, AdminEditForm3Servlet.java, Form1PersonalDetailsDAO.java, Form2AdditionalDetailsDAO.java, Form3PersonalIdentificationDAO.java, OtherAccountsDAO.java, Form60DAO.java, StateAndCityDAO.java, BranchDetailsDAO.java, Form1PersonalDetails.java, Form2AdditionalDetails.java, Form3PersonalIdentification.java, BranchDetails.java, StateAndCity.java, OtherAccounts.java, Form60.java
Admin View Customer's SB Application Status	ApplicationStatus.jsp, ApplicationStatusAjax.jsp	ApplicationStatusDAO.java, ApplicationStatus.java
Admin Edit Customer's Email Address & Contact Details	AdminEditContactDeatails.jsp, AdminEditContactsSuccess.jsp, CityChooserWindow.jsp, XCityChooserWindow.jsp, AdminEditFormPart1Ajax.jsp, GetCIDAjax.jsp, GetACCAjax.jsp, GetCityFromStateAjax.jsp	AdminEditContactDetailsServlet.java, Form1PersonalDetailsDAO.java, StateAndCityDAO.java, Form1PersonalDetails.java, BranchDetails.java, StateAndCity.java
Admin Add A New Branch	AddBranchDetailsWindow.jsp, AddBranchDetailsSuccessful.jsp, GetCityFromStateAjax.jsp	AddBranchDetailsServlet.java, BranchDetailsDAO.java, StateAndCityDAO.java, BranchDetails.java, StateAndCity.java
Add A New Admin/ Branch Manager	AddBranchManagerWindow.jsp, AddBranchManagerSuccessful.jsp, GetCityFromStateAjax.jsp, GetBranchCodeAjax.jsp,	AddBranchManagerServlet.java, AdminAccountDAO.java, BranchDetailsDAO.java, StateAndCityDAO.java,

	GetBranchNameAjax.jsp	AdminAccount.java, BranchDetails.java, StateAndCity.java, SendEmail.java, PasswordGenerator.java PasswordEncryption.java
Admin Update Bank Constraints, e.g: Minimum Account Balance, Service Charges etc.	UpdateBankConstraints.jsp, UpdateBankConstraintsSuccessful.jsp	UpdateBankConstraintsServlet.java, BankConstraintsDAO.java, BankConstraints.java
Admin View All Transaction Of A Branch Yearly/Monthly/Daily	AdminTransaction StatementBranchSelect.jsp, BranchChooserWindow.jsp, AdminTransactionStatement.jsp, AdminTransactionStatementAjax.jsp, GetCityFromStateAjax.jsp	AdminTSBranchSelectServlet.java, TransactionDetailsDAO, StateAndCityDAO.java, BranchDetailsDAO.java, StateAndCity.java, BranchDetails.java, TransactionDetails.java
Admin View Bank Account Statement Of A Branch Yearly/Monthly/Daily	BranchTransaction StatementBranchSelect.jsp, BranchChooserWindow.jsp, BankTransactionStatement.jsp, BankTransactionStatementAjax.jsp, GetCityFromStateAjax.jsp	BankTSBranchSelectServlet.java, BankAccountDAO, StateAndCityDAO.java, BranchDetailsDAO.java, StateAndCity.java, BranchDetails.java, BankAccount.java
Admin View Customer Account Statement Of A Customer Yearly/Monthly/Daily	AdminCustomerAccountSelectTS.jsp, AdminCustomerTS.jsp, AdminCustomerTSAjax.jsp,	AdminCustomer AccountSelectTSServlet.java, CustomerAccountDAO.java, TransactionDetailsDAO.java, CustomerAccount.java, TransactionDetails.java
Admin Verify And Finalize Customer's Money Transfer To Other Account	AdminVerifyMoneyTransfer.jsp, AdminverifyMoneyTransferAjax.jsp, AdminVerifyMoneyTransferWindow.jsp, AdminVerify MoneyTransferWindowAjax.jsp, AdminVerifyAccountAjax.jsp, AdminVerify MoneyTransferAcceptAjax.jsp, AdminVerify MoneyTransferRejectAjax.jsp	MoneyTransferDAO.java, TransactionDetailsDAO.java, CustomerAccountDAO.java, BankAccountDAO.java, MoneyTransfer.java, TransactionDetails.java, CustomerAccount.java, BankAccount.java, SendEmail.java
Admin Verify e-FD (Online Fixed Deposit) Application And Money Transfer To Bank's Account	AdminVerifyFD.jsp, AdminVerifyFDWindow.jsp, AdminVerifyFDWindowAjax.jsp, AdminVerifyFDAjax.jsp, AdminFDAcceptAjax.jsp, AdminFDRejectAjax.jsp	FixedDepositDAO.java, FixedDepositDetailsDAO.java, TransactionDetailsDAO.java, CustomerAccountDAO.java, FixedDeposit.java, FixedDepositDetails.java, TransactionDetails.java, CustomerAccount.java, SendEmail.java

Admin Verify e-FD (Online Fixed Deposit) Maturity And Maturity Money Transfer To Customer's Account	AdminMatureFD.jsp, AdminMatureFDAjax.jsp, AdminMatureFDWindow.jsp, AdminMatureFDWindowAjax.jsp, AdminMatureFDSuccess.jsp	AdminMatureFDServlet.java, FixedDepositMatureDAO.java, FixedDepositDAO.java, FixedDepositDetailsDAO.java, CustomerAccountDAO.java, BankAccountDAO.java, TransactionDetailsDAO.java, FixedDepositMature.java, FixedDeposit.java, FixedDepositDetails.java, CustomerAccount.java, BankAccount.java, TransactionDetails.java, SendEmail.java
Admin View And Reply To Customer Complain And Queries	ComplainReply.jsp, ComplainReplyWindow.jsp, EmailSent.jsp, ComplainReplyAjax.jsp	ComplainReplyServlet.java, ComplainBoxDAO.java, ComplainBox.java, SendEmail.java
Admin Branch Wise Send Email To All Customers About New Offers And Promotions	NewCustomerOffer.jsp, GetCityFromStateAjax.jsp, GetBranchCodeAjax.jsp, GetBranchNameAjax.jsp	NewCustomerOfferServlet.java, CustomerAccountDAO.java, CustomerAccount, SendEmail.java
Admin Send Email To A Customer About Any Notification	AdminSendEmail.jsp	AdminSendEmailServlet.java, SendEmail.java
Admin Verify And Close Customer Account. 1.Verify Pending Money Transfer 2.Reject Pending e-FD Application 3.Mature Any e-FD 4.Close Account 5.Encash The Account Balance	AdminVerifyAccountClose.jsp, AdminVerifyAccountCloseWindow.jsp, AdminVerify MoneyTransferBeforeAccountClose.jsp, AdminVerifyFDBeforeAccountClose.jsp, AdminMatureFDBeforeAccountClose.jsp, AdminVerifyMoneyTransfer.jsp, AdminverifyMoneyTransferAjax.jsp, AdminVerifyMoneyTransferWindow.jsp, AdminVerifyFD.jsp, AdminVerifyFDWindow.jsp, AdminMatureFD.jsp, AdminMatureFDAjax.jsp, AdminMatureFDWindow.jsp, AdminMatureFDWindowAjax.jsp, AdminMatureFDSuccess.jsp, AdminVerifyFDWindowAjax.jsp, AdminVerifyFDAjax.jsp, AdminFDRejectAjax.jsp, AdminVerify MoneyTransferWindowAjax.jsp, AdminVerifyAccountAjax.jsp, AdminVerify MoneyTransferAcceptAjax.jsp, AdminVerify MoneyTransferRejectAjax.jsp, AdminVerifyMoneyTransfer	AdminMatureFDServlet.java, MoneyTransferDAO.java, TransactionDetailsDAO.java, CustomerAccountDAO.java, BankAccountDAO.java, FixedDepositMatureDAO.java, FixedDepositDAO.java, FixedDepositDetailsDAO.java, Form1PersonalDetailsDAO.java, Form2AdditionalDetailsDAO.java, Form3PersonalIdentificationDAO.java, OtherAccountsDAO.java, Form60DAO.java, ApplicationStatusDAO.java, MoneyTransfer.java, TransactionDetails.java, CustomerAccount.java, BankAccount.java, FixedDepositMature.java, FixedDeposit.java, FixedDepositDetails.java, Form1PersonalDetails.java, Form2AdditionalDetails.java, Form3PersonalIdentification.java, OtherAccounts.java, Form60.java, ApplicationStatus.java, SendEmail.java

	BeforeAccountCloseAjax.jsp, AdminVerifyFD BeforeAccountCloseAjax.jsp, AdminMatureFD BeforeAccountCloseAjax.jsp, AdminVerifyAccountCloseAjax.jsp, AdminVerify AccountCloseWindowAjax.jsp, AdminAccountCloseAcceptAjax.jsp	
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## **4.2 Data Flow Diagram**

### **4.2.1 Dataflow Diagram**

Data derive business activities. In the course of handling transactions and completing tasks; data are input, processed, stored, retrieved changed and output generated. Data flow analysis studies the use of data in each activity and documents these finding diagrammatically in DFD.

DFD is the graphical tool used to describe and analyze the movement of data through a system. This forms the basis from which other components are developed.

DFD can be of two types:

- Physical DFD
- Logical DFD

#### **4.2.1 Physical DFD**

It is implementation dependent view of the current system showing the tasks to be carried out. It includes the physical description of objects.

#### **4.2.2 Logical DFD**

It is implementation dependent view of the current system focusing on flow of data between processes without regard for the specific devices. DFD is first draw for very general view of the overall system and then the lower level DFD are developed more details.

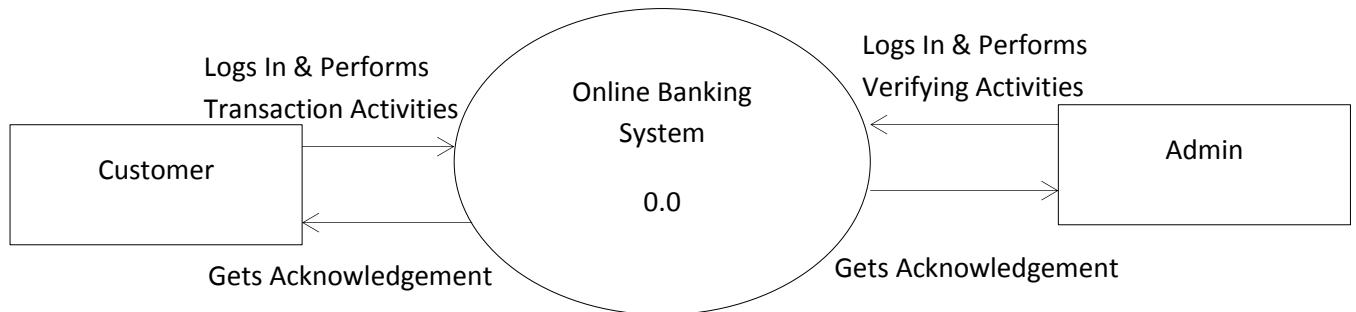
#### **4.2.3 Context Diagram**

The top level DFD is known as context diagram. This is the first step in the requirement determination, which aims at learning the general characteristics of the business process under investigation. It containing a single process but it gives the most general and broadcast view of the system. Moreover it gives the pictorial representation of the scope boundaries of the system under study. Main purpose is to identify what is to be included in the area under study.

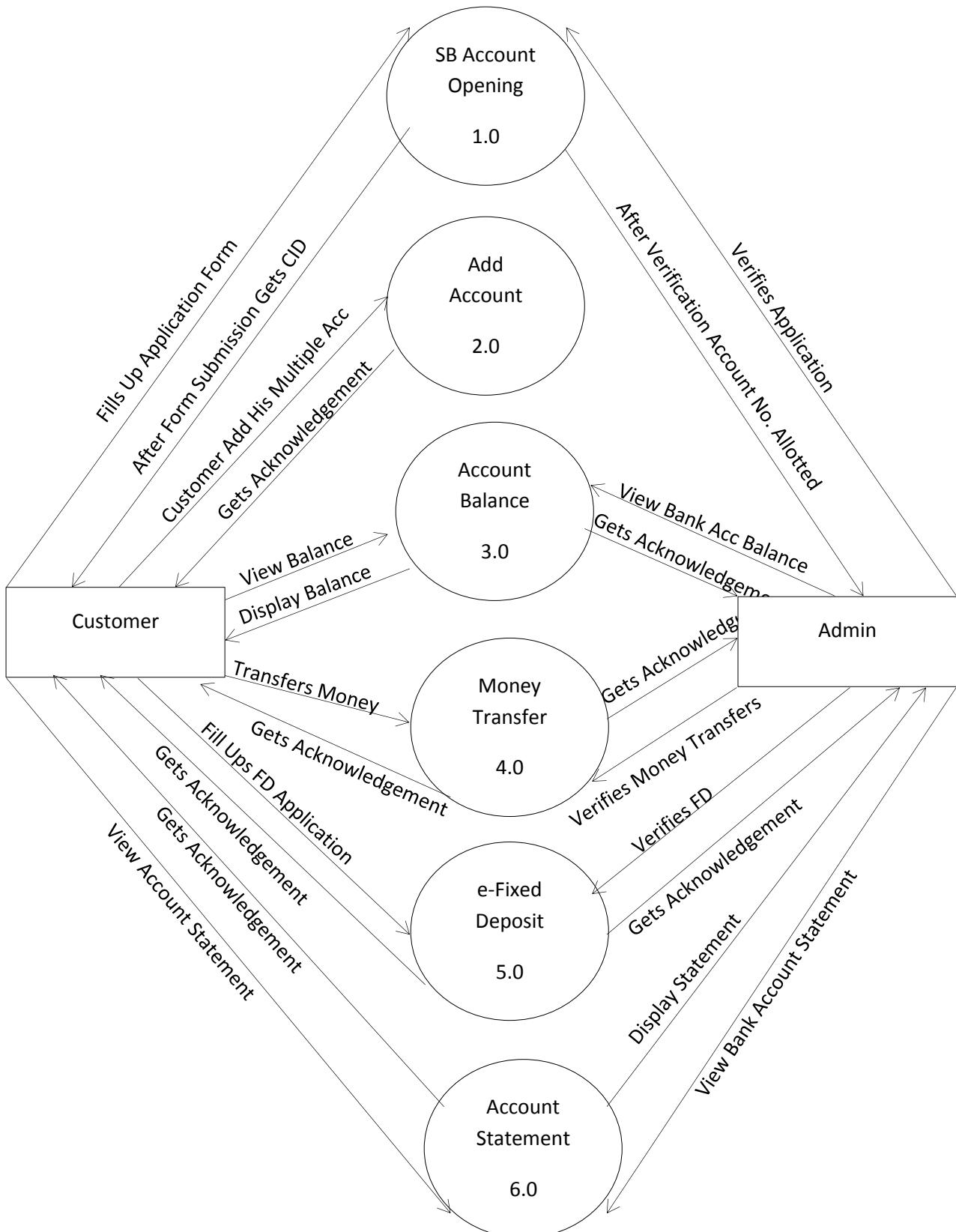
#### 4.2.4 Detailed DFD

After the context diagram has been done the single process is exploded into further process for details of data flows and process. The subsequent diagrams are called as Detailed DFD.

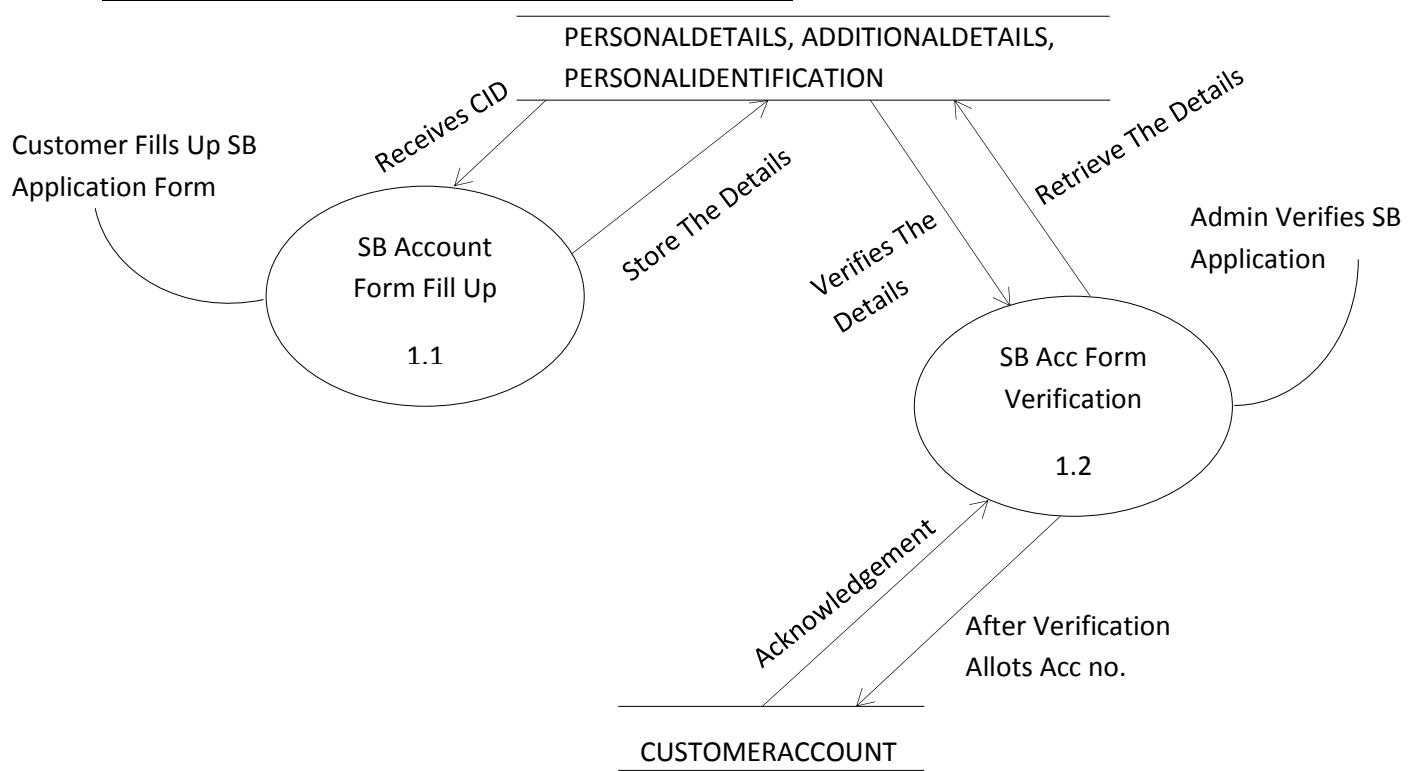
#### Context Level DFD (identifies sources and sink)



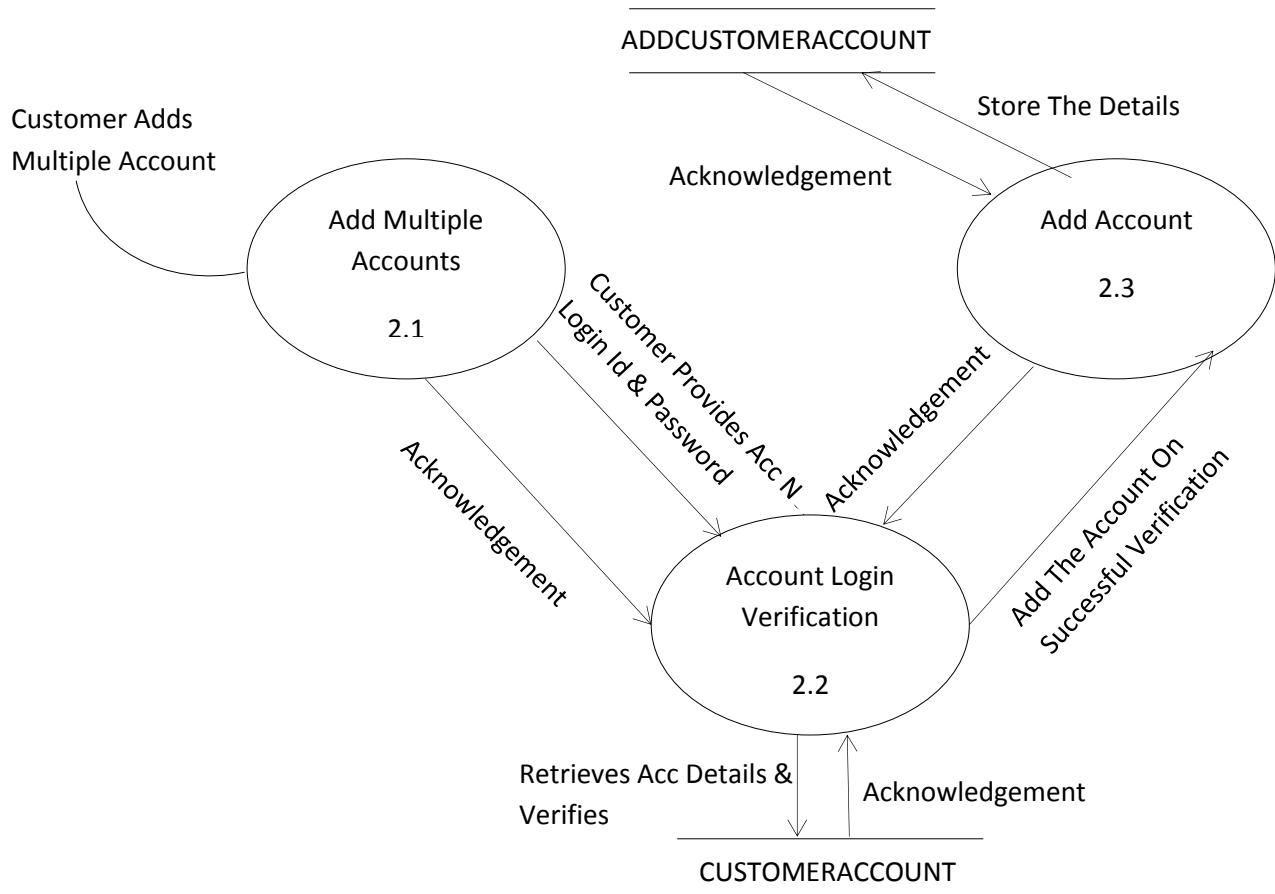
## 4.4 Level 0 DFD

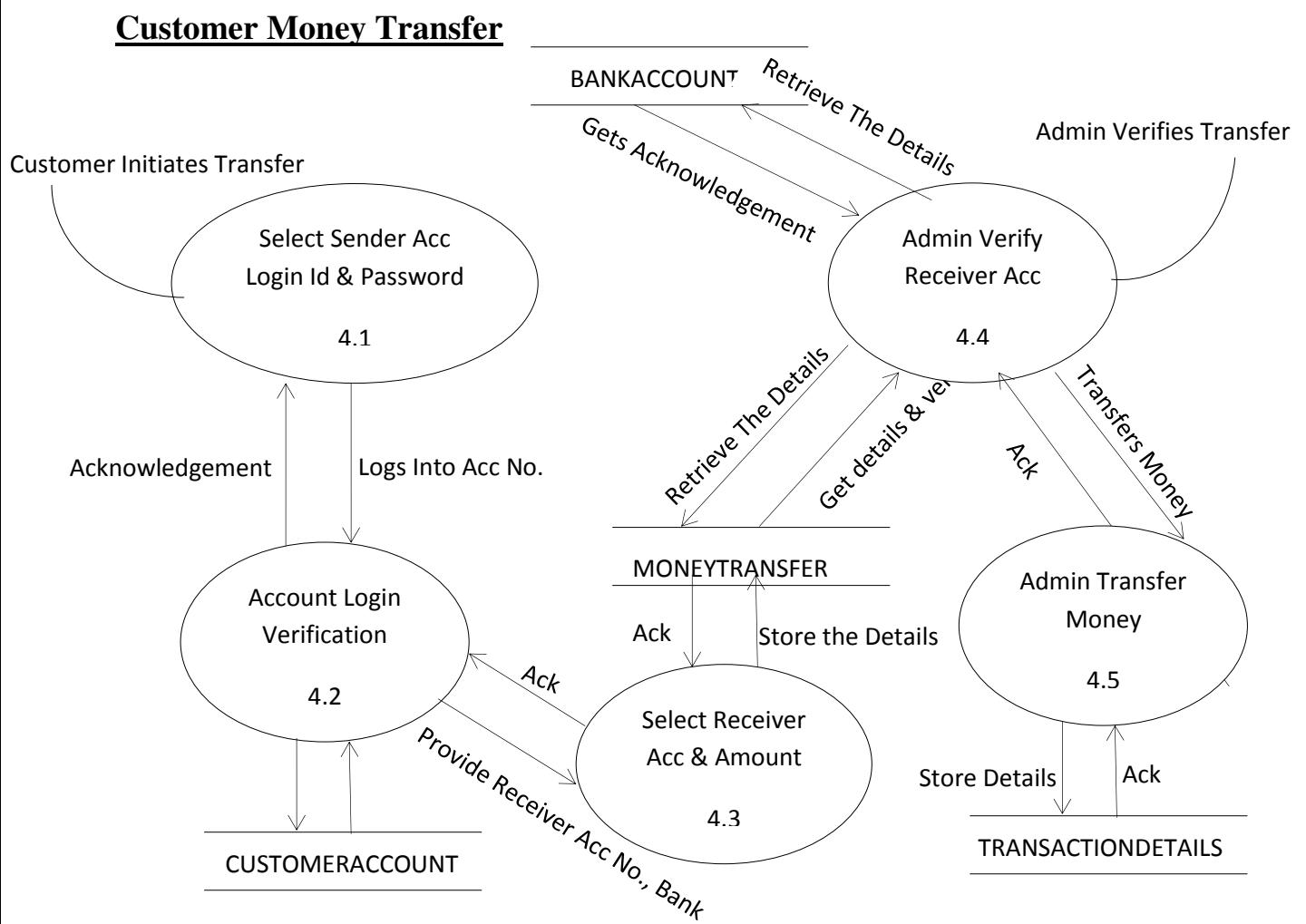
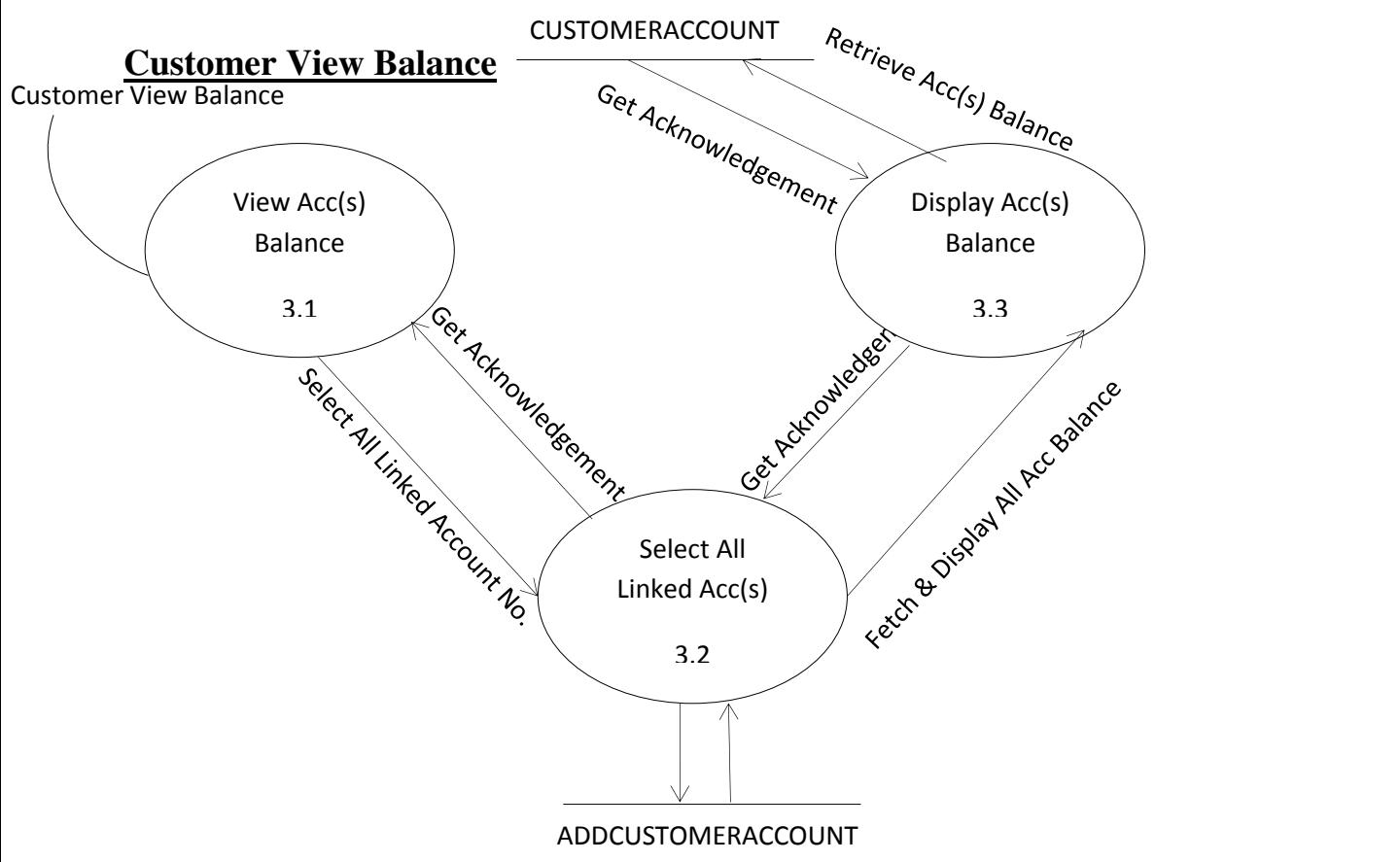


## Level 1 DFD : Customer SB Account Open

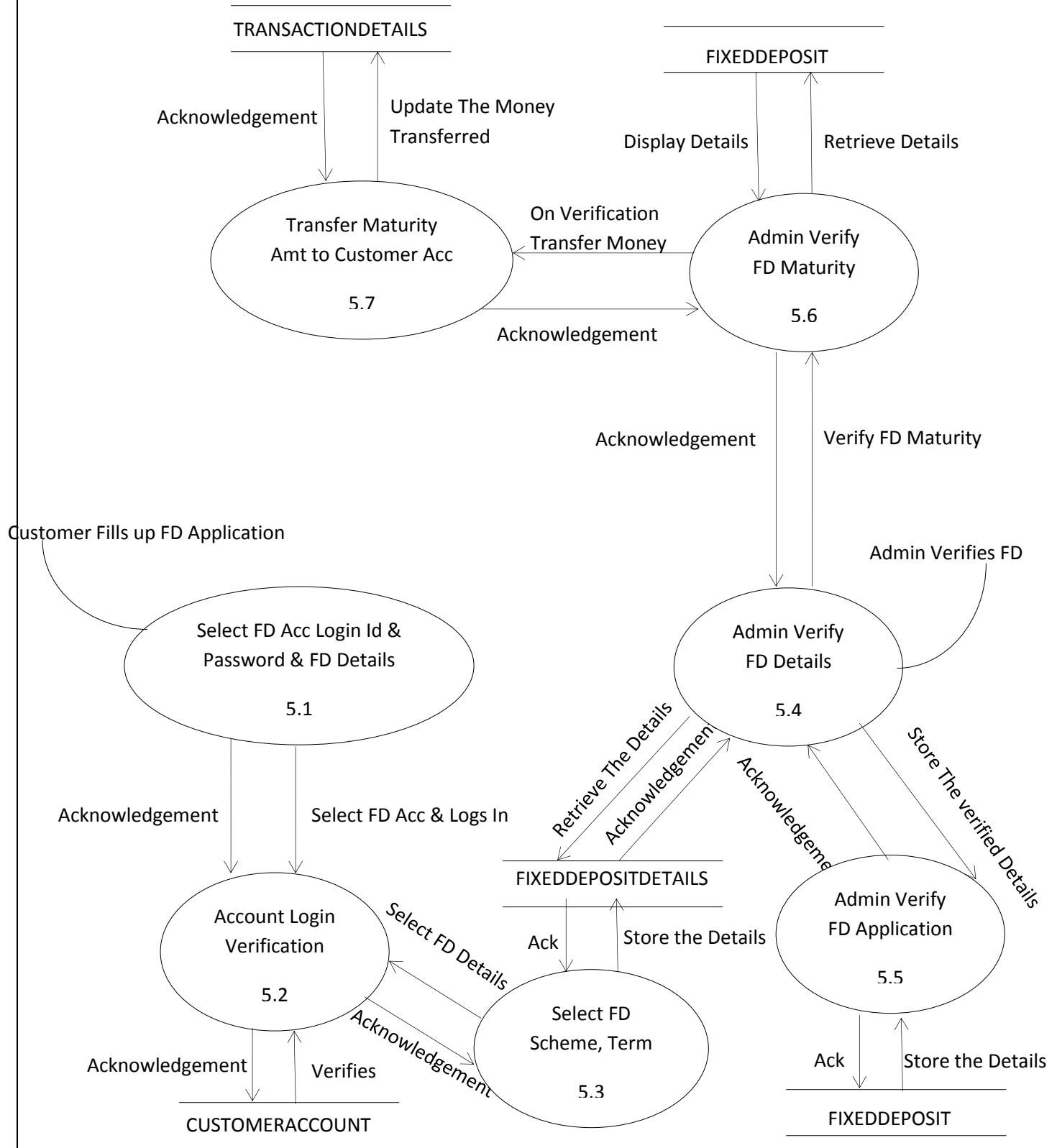


## Customer Link multiple Account(s)

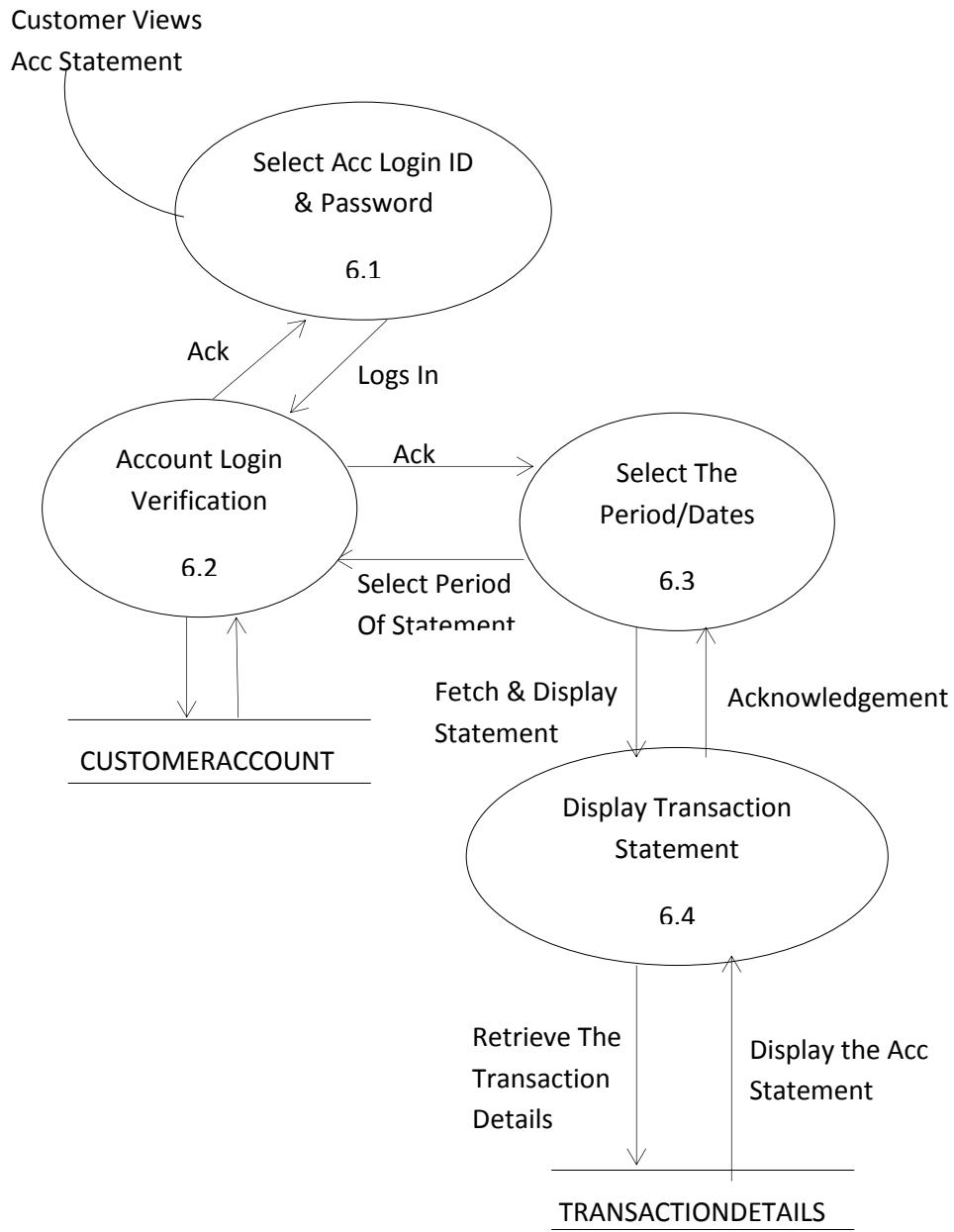




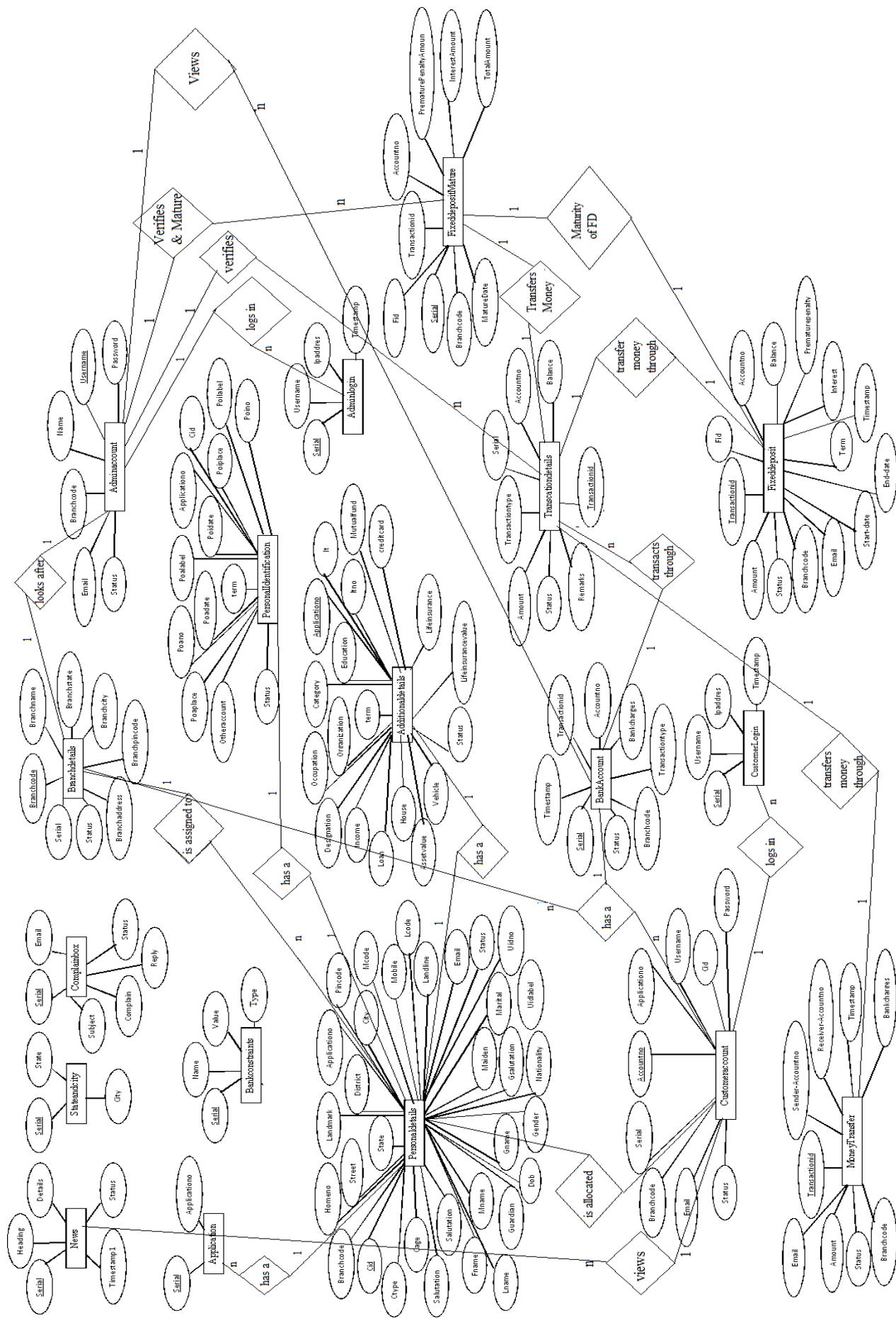
## Customer FD Application & Maturity



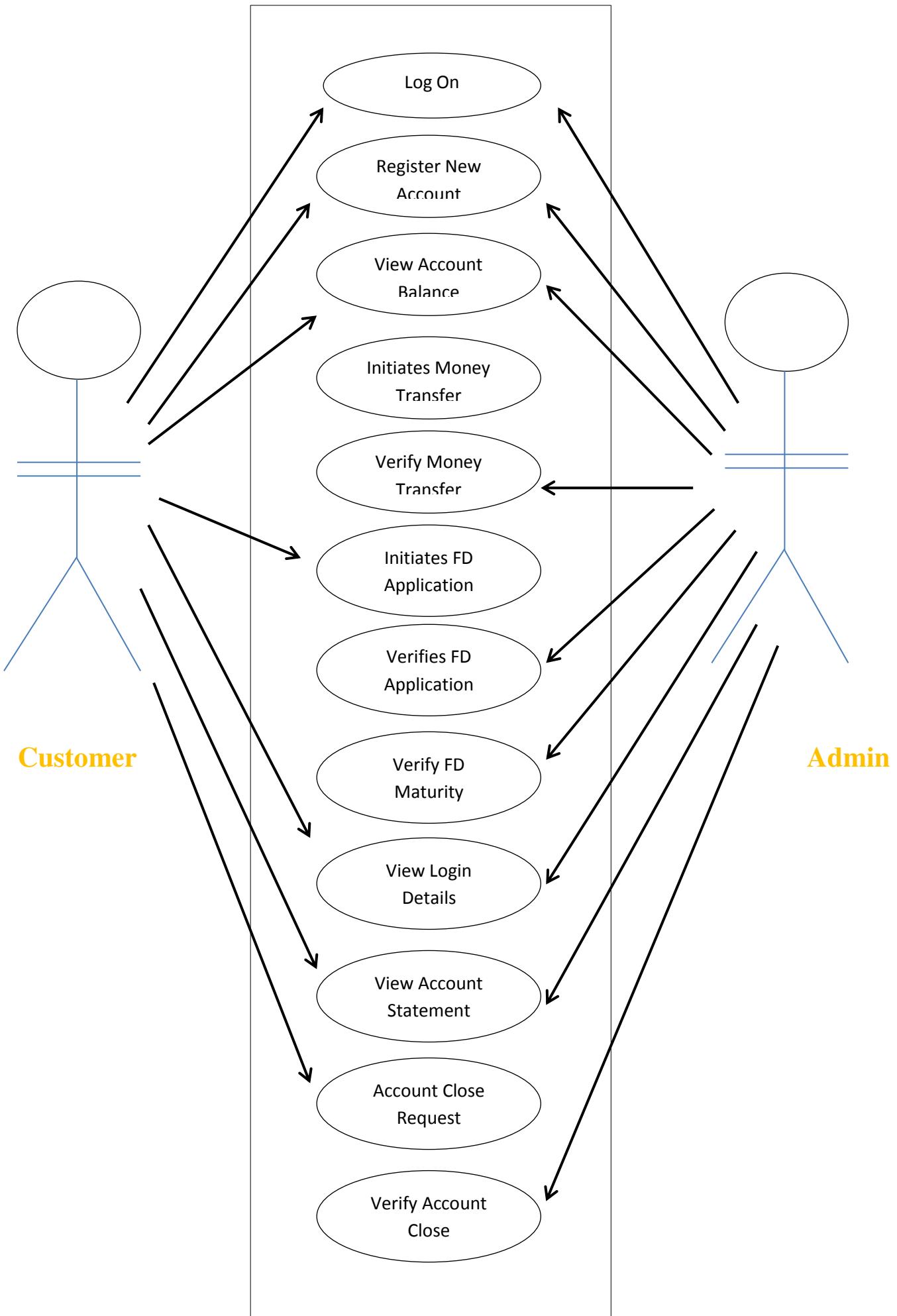
## Customer View Account Statement



## **4.3 Entity Relationship Diagram**



## **4.4 USE CASE Diagram**



## **4.5 SCREEN SHOTS**

## 1.1.Bank Of Bengal Home Page

The Bank To Every Indian

Bank Of Bengal is a new bank to every Indian established in the year 2014 with an aim to serve every Indian with the best Banking Services.

**Personal Banking**  
Personal Banking portal provides services with complete control over all banking demands online.  
[Login](#)

**Banking Administrator**  
Banking Administration application is only for the Administrative Purposes by the Administrators.  
[Login](#)

**Banking Queries**  
Banking Queries application provides features to Customer to ask any Query.  
[Ask Query](#)

**Latest News**

**Bank Of Bengal**  
Bank Of Bengal Is A Bank That Provides The Best Facilities To Its Customers To Have A Wider Banking [more...](#)

[Read All News](#)

## 1.2.Customer Home Page

Welcome To The Online Portal Of Bank Of Bengal !

Welcome, Mr. Nirmalya Kundu

[Home](#) | [Services](#) | [Complain](#) | [Online Application](#) | [Details](#) | [Settings](#)

[Balance Details](#)

[Transfer Money](#)

[e-Fixed Deposit](#)

[Last 3 Transactions](#)

[Account Statement](#)

[Add An Account](#)

[Close An Account](#)

[Last 5 Login](#)

[Register Complain](#)

Welcome To The Bank Of Bengal. The Bank That Provides Faster And Better Services

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### 1.3.Admin Home Page

The screenshot shows the 'Bank Of Bengal' Admin Home Page. The header features the bank's logo and the text 'Bank Of Bengal Welcomes You!'. On the left, there are three main menu sections: 'Upcoming News & Promotions' (with 'Update News', 'View All News', and 'Delete News' buttons), 'SB Account Verification & Update' (with 'Verify Applications', 'Edit Application', 'Application Status', and 'Edit Contact Details' buttons), and 'Complaints And Solution Box' (with 'Compose Email', 'BranchWise Notification', and 'View & Reply Complain' buttons). The central area contains a search bar with 'Search The Web' placeholder text, a 'Submit' button, and radio buttons for 'This Site' and 'The Web'. Below the search bar is the 'Administrator Details' section, which displays the administrator's name ('Nirmallya Kundu'), user ID ('nirmallya'), branch ('0'), and email ID ('nk.nirmallya.kundu@gmail.com'). The right side of the page is a sidebar titled 'Welcome, Nirmallya Kundu' and 'e Administrator Portal Of Bank Of Bengal !'. It includes sections for 'Transaction Statement' (with 'All Transaction', 'Bank Account', and 'Customer Account' buttons), 'Verify Account Activity' (with 'Money Transfer', 'e-FD Application', 'e-FD Maturity', and 'Verify Account Closing' buttons), and 'Update New Details Related To Bank' (with 'Add New Branch', 'Assign Branch Manager', and 'Update Bank Constraints' buttons). A note at the bottom states: 'This is the Administrator Portal Of Bank Of Bengal. It is the Administrator Portal that provides facilities to Update, Verify, Modify each and every minute details of the Bank as well as the Customer.' The footer contains the copyright notice: '© Copyright 2000 All Rights Reserved Bank Of Bengal'.

### 2.1. Customer Login

The screenshot shows the 'Customer Login||Bank Of' page in a web browser. The URL in the address bar is 'localhost:8081/BankOfBengal/CustomerLogin.jsp'. The main content is a 'Personal Banking Login' form. It has two input fields: 'Login ID : Username' and 'Password :'. Below the password field is a 'Login' button. At the bottom of the form, there is a link: 'Forgot your password? Click here to get it.'

## 2.2. Customer Change Default Password On 1<sup>st</sup> Login

The screenshot shows a web browser window titled "Change Password||Bank". The URL is "localhost:8081/BankOfBengal/ChangeDefaultPassword.jsp". The form is titled "Change Password". It contains the following fields:

- Username:** nk.nirmallya.kundu4
- New Password\***: A masked password field with a green progress bar indicating "Excellent".
- Confirm Password\***: A masked password field with a red progress bar indicating "Matched".
- Childhood Nickname:** A dropdown menu showing "What was your childhood nickname?" and a text input field containing "rohit".
- Two-Step Verification:** Radio buttons for "Enable" and "Disable".
- Submit:** A blue rounded button.

## 2.3. Customer Change Password

The screenshot shows the "Bank Of Bengal" website. The top navigation bar includes links for Home, Services, Complain, Online Application, Details, and Settings. The user is identified as "Welcome, Mr. Nirmallya Kundu". The left sidebar has links for Balance Details, Transfer Money, e-Fixed Deposit, Last 3 Transactions, Account Statement, Add An Account, Close An Account, Last 5 Login, and Register Complain. The main content area is titled "Change Password" and contains the following fields:

- Username:** nk.nirmallya.kundu4
- Old Password\***: A masked password field.
- New Password\***: A masked password field with a green progress bar indicating "Excellent".
- Confirm Password\***: A masked password field with a red progress bar indicating "Matched".
- Submit:** A blue rounded button.

## 2.4. Customer Get Forgot Password in Registered Email

The screenshot shows a web browser window with the title bar "Forgot Password||Bank Of" and the URL "localhost:8081/BankOfBengal/CustomerForgotPassword.jsp". The main content area has a blue header with the text "Get Forgot Password In Registered Email". Below it, there are two input fields: "UserName\*" containing "nk.nirmallya.kundu4" and a dropdown menu "What was your childhood nickname?" with "rohit" selected. A "Submit" button is located on the right side of the form.

## 2.5. Forgot Password Received In Email

The screenshot shows a Gmail inbox with the title bar "Gmail - ACCOUNT FORGOT". The URL in the address bar is "https://mail.google.com/mail/?ui=2&ik=d277a857d2&view=f". The inbox header shows "Nirmallya Kundu <bankofbengal.india@gmail.com>". The main content is an email from "bankofbengal.india@gmail.com <bankofbengal.india@gmail.com>" to "nk.nirmallya.kundu@gmail.com" dated "Sun, May 4, 2014 at 10:18 AM". The email subject is "ACCOUNT FORGOT PASSWORD". The body of the email contains the following text:

Dear Nirmallya,  
Your Login Details is As Follows:  
Username OR Login ID : nk.nirmallya.kundu4  
Password : Abcd1234!@#\$

-This is an auto generated Email.  
- Thank You  
Nirmallya Kundu  
Administrator - Bank Of Bengal

## 2.6. Customer Add Multiple Account(s)

The screenshot shows the Bank Of Bengal online portal interface. At the top, there is a logo and the text "Bank Of Bengal" followed by "To The Online Portal Of Bank Of Bengal !". On the right, it says "Welcome, Mr. Nirmalya Kundu". Below the header is a navigation bar with links: Home, Services, Complain, Online Application, Details, and Settings. A sidebar on the left contains links: Balance Details, Transfer Money, e-Fixed Deposit, Last 3 Transactions, Account Statement, Add An Account, Close An Account, Last 5 Login, and Register Complain. The main content area has a title "Add Another Account" and fields for "nk.nirmalya.kundu4" (Account No To Add), "ACC0100000002" (Login ID Of The Account), and "nk.nirmalya.kundu2" (Password Of The Account). There is also a "Add" button. At the bottom of the page, it says "Copyright © Bank Of Bengal".

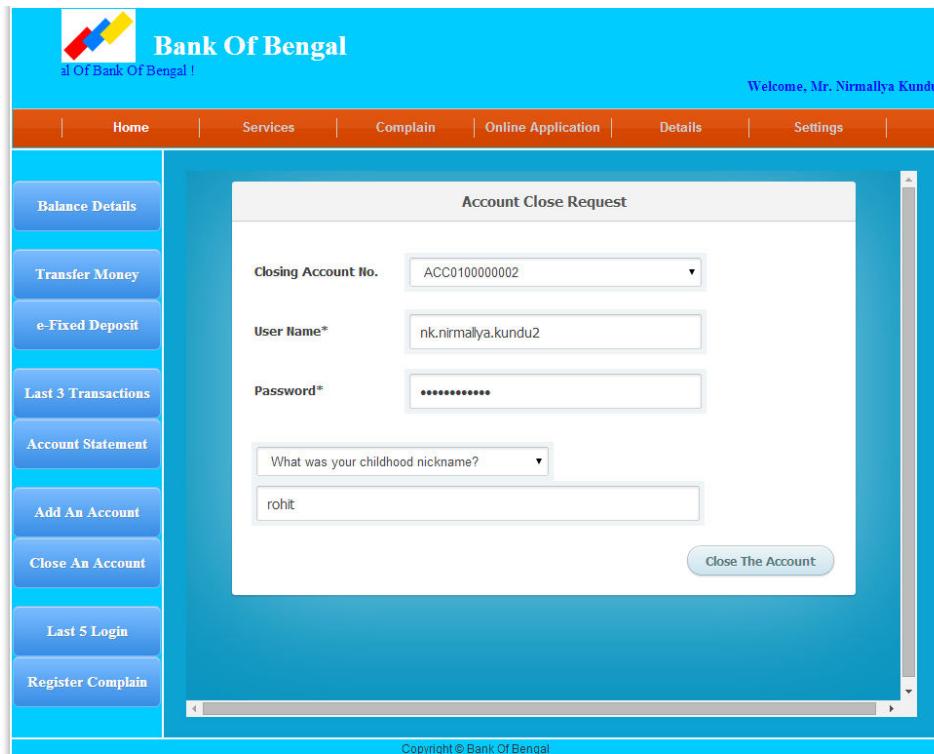
## 2.7. Customer Balance Details of All Linked/Added Account(s)

The screenshot shows the Bank Of Bengal online portal interface. At the top, there is a logo and the text "Bank Of Bengal" followed by "Welcome To The Online Portal Of Bank Of Bengal !". On the right, it says "Welcome, Mr. Nirmalya Kundu". Below the header is a navigation bar with links: Home, Services, Complain, Online Application, Details, and Settings. A sidebar on the left contains links: Balance Details, Transfer Money, e-Fixed Deposit, Last 3 Transactions, Account Statement, Add An Account, Close An Account, Last 5 Login, and Register Complain. The main content area has a title "Account Balance Details" and a table showing account numbers and current balances:

Account No	Current Balance INR.
ACC0100000004	585.9
ACC0100000002	1000.0

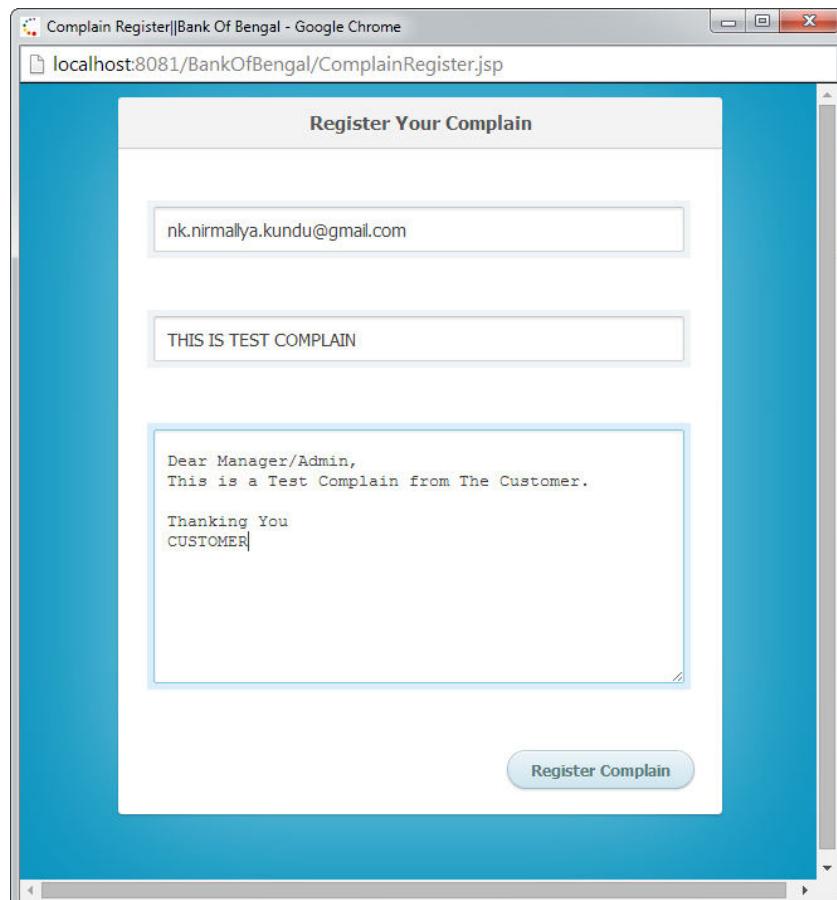
A "Close" button is located at the bottom right of the table. At the bottom of the page, it says "Copyright © Bank Of Bengal".

## 2.8. Customer Account Close Request



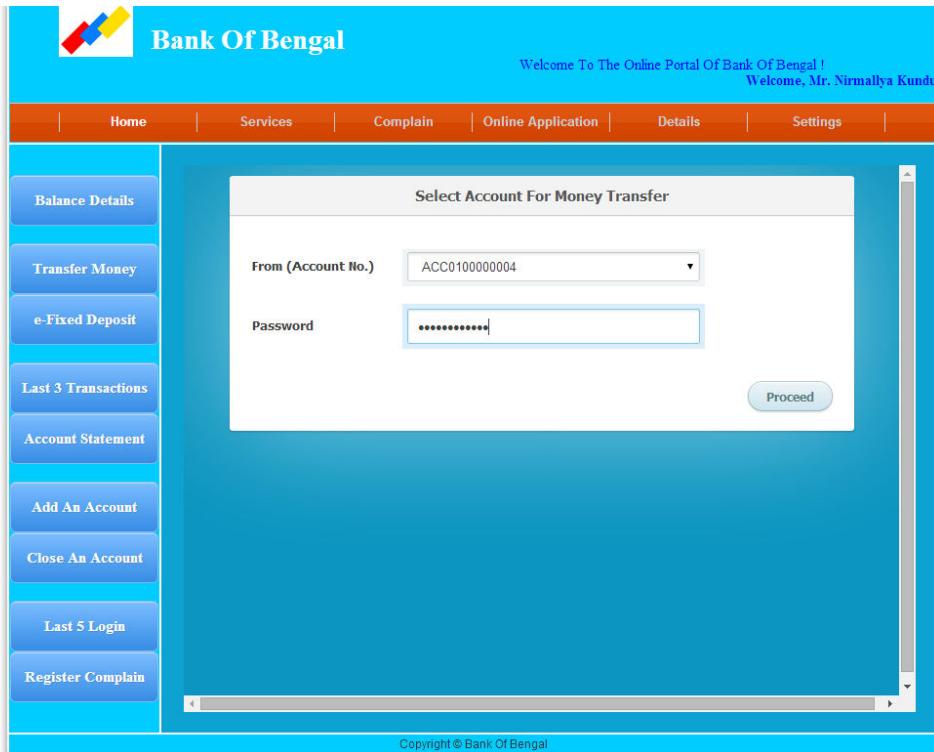
The screenshot shows the 'Account Close Request' form on the Bank Of Bengal website. The left sidebar contains links for Balance Details, Transfer Money, e-Fixed Deposit, Last 3 Transactions, Account Statement, Add An Account, Close An Account, Last 5 Login, and Register Complain. The main content area has a title 'Account Close Request'. It includes fields for 'Closing Account No.' (ACC010000002), 'User Name\*' (nk.nirmallya.kundu2), 'Password\*' (\*\*\*\*\*), and a dropdown for 'What was your childhood nickname?' with 'rohit' selected. A 'Close The Account' button is at the bottom right.

## 2.9. Customer Register A Complain/ Ask A Query



The screenshot shows the 'Register Your Complain' form in a browser window. The URL is 'localhost:8081/BankOfBengal/ComplainRegister.jsp'. The form has fields for 'Email' (nk.nirmallya.kundu@gmail.com) and 'Complain Text' (THIS IS TEST COMPLAIN). Below these is a large text area containing: 'Dear Manager/Admin,  
This is a Test Complain from The Customer.  
  
Thanking You  
CUSTOMER'. A 'Register Complain' button is at the bottom.

## 2.10. Customer Transfer Money to Other Account Step1: Select Own Account



Welcome To The Online Portal Of Bank Of Bengal !  
Welcome, Mr. Nirmalya Kundu

Home | Services | Complain | Online Application | Details | Settings

Balance Details  
Transfer Money  
e-Fixed Deposit  
Last 3 Transactions  
Account Statement  
Add An Account  
Close An Account  
Last 5 Login  
Register Complain

Select Account For Money Transfer

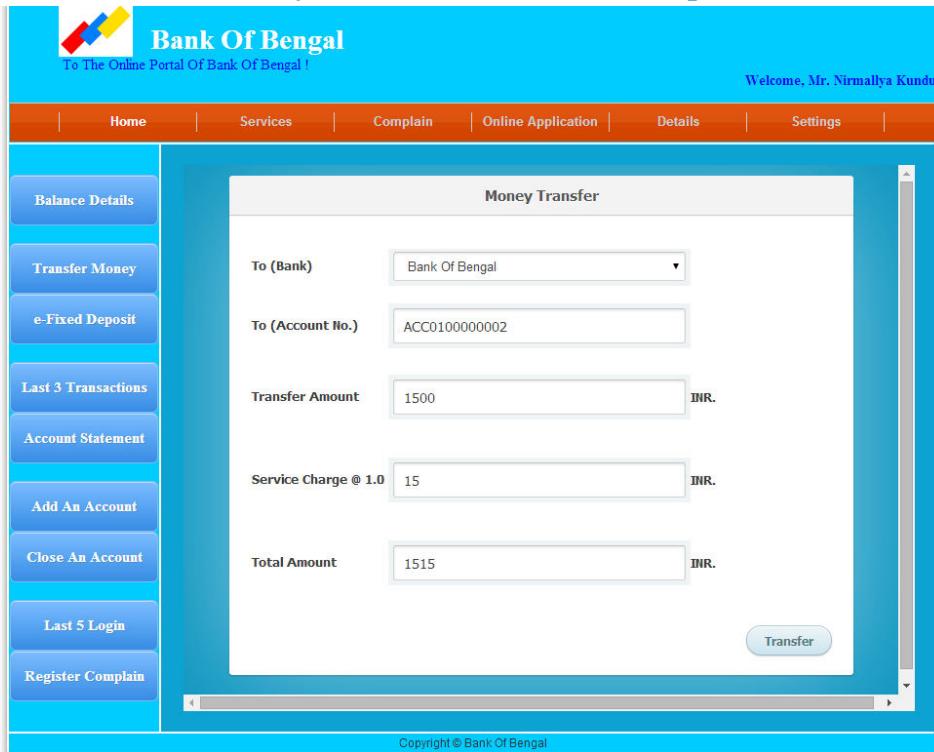
From (Account No.) : ACC0100000004

Password : \*\*\*\*\*

Proceed

Copyright © Bank Of Bengal.

## 2.11. Customer Transfer Money to Other Account Step2: Select Other Account



Welcome, Mr. Nirmalya Kundu

Home | Services | Complain | Online Application | Details | Settings

Balance Details  
Transfer Money  
e-Fixed Deposit  
Last 3 Transactions  
Account Statement  
Add An Account  
Close An Account  
Last 5 Login  
Register Complain

Money Transfer

To (Bank) : Bank Of Bengal

To (Account No.) : ACC0100000002

Transfer Amount : 1500 IRR.

Service Charge @ 1.0 : 15 IRR.

Total Amount : 1515 IRR.

Transfer

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## 2.12. Customer e-FD Step1: e-FD Scheme Review

The screenshot shows the Bank Of Bengal Online Portal. At the top, there is a logo and the text "Bank Of Bengal" and "The Online Portal Of Bank Of Bengal". Below the header, a navigation bar includes links for Home, Services, Complain, Online Application, Details, and Settings. A welcome message "Welcome, Mr. Nirmallya Kundu" is displayed. On the left, a sidebar lists various options: Balance Details, Transfer Money, e-Fixed Deposit, Last 3 Transactions, Account Statement, Add An Account, Close An Account, Last 5 Login, and Register Complain. The main content area displays a table titled "FD Scheme Details" with the following data:

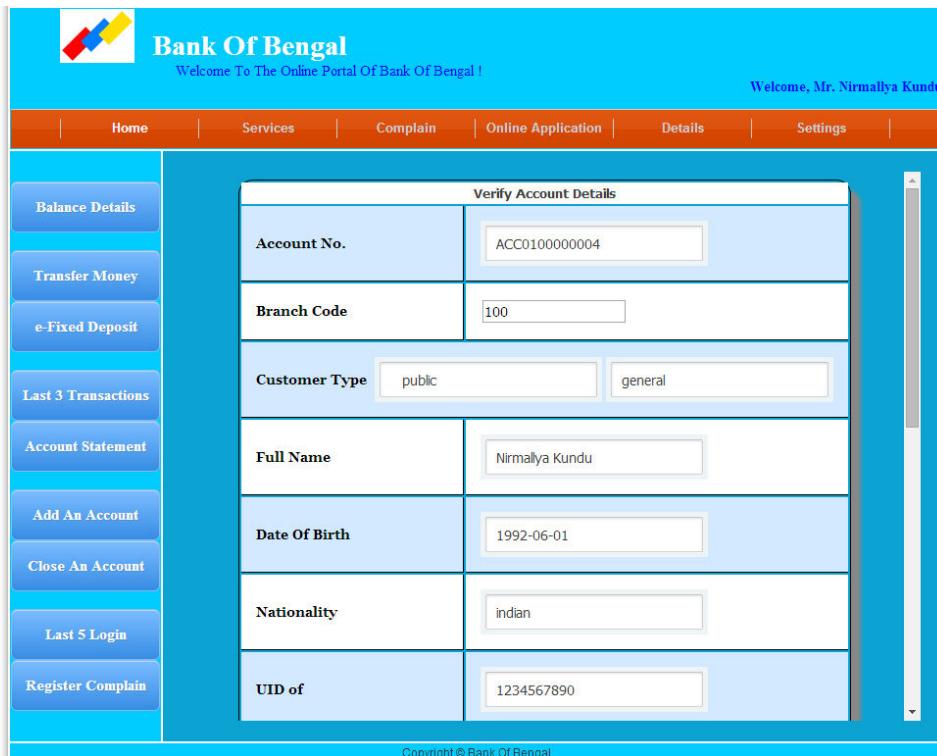
Tenor	Interest Rates	PreMature Penalty
7 days to 14 days	5.0	1.0
15 days to 29 days	5.5	1.0
30 days to 45 days	6.5	1.0
46 days to 60 days	7.5	1.0
61 days to 90 days	7.5	1.0
91 days to 179 days	8.5	1.0
180 days to 269 days	8.5	1.0
270 days to 364 days	8.5	1.0
1 years to less than 2 years	9.05	1.0
2 years or less than 5 years	9.05	1.0

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## 2.13. Customer e-FD Step2: Select Account

The screenshot shows the Bank Of Bengal Online Portal. The layout is similar to the previous page, with the logo, "Bank Of Bengal" and "The Online Portal Of Bank Of Bengal", the navigation bar, and the welcome message "Welcome, Mr. Nirmallya Kundu". The sidebar on the left contains the same list of options as before. The main content area now displays a form titled "Select Account For Money Transfer". It includes fields for "From (Account No.)" containing "ACC0100000004" and "Password" (represented by a series of asterisks). A "Proceed" button is located at the bottom right of the form. Copyright information "Copyright © Bank Of Bengal" is at the bottom.

## 2.14. Customer e-FD Step3: e-FD Application Details



Welcome To The Online Portal Of Bank Of Bengal !  
Welcome, Mr. Nirmallya Kundu

Home | Services | Complain | Online Application | Details | Settings |

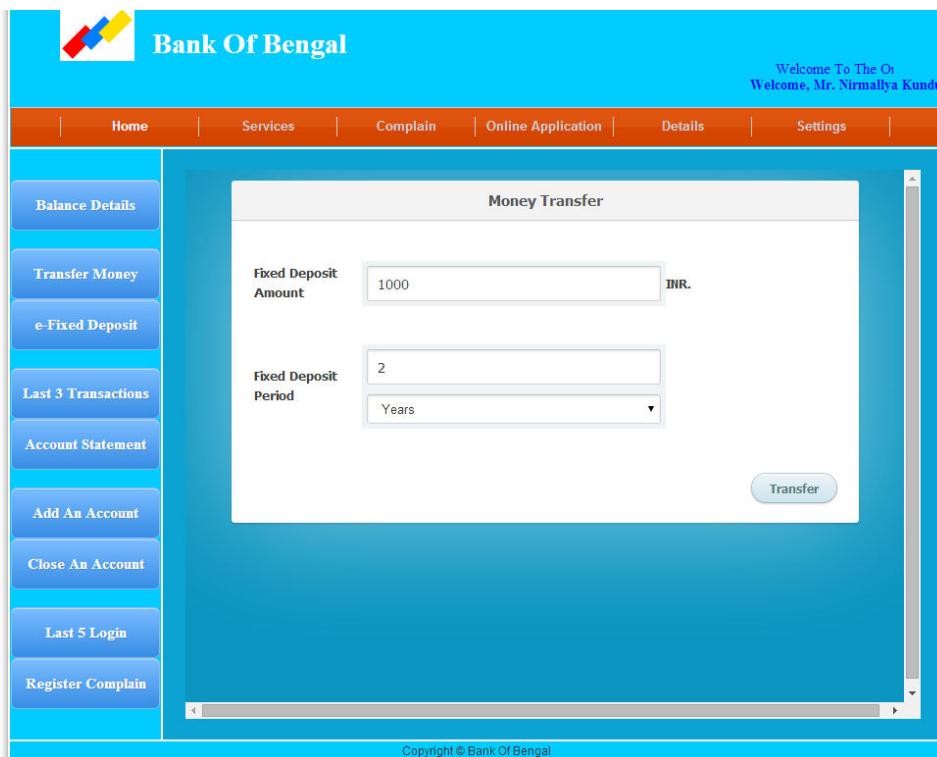
Balance Details  
Transfer Money  
e-Fixed Deposit  
Last 3 Transactions  
Account Statement  
Add An Account  
Close An Account  
Last 5 Login  
Register Complain

Verify Account Details

Account No.	ACC0100000004
Branch Code	100
Customer Type	public general
Full Name	Nirmallya Kundu
Date Of Birth	1992-06-01
Nationality	indian
UID of	1234567890

Copyright © Bank Of Bengal

## 2.15. Customer e-FD Step4: e-FD Term Selection & Money Transfer



Welcome To The Online Portal Of Bank Of Bengal !  
Welcome, Mr. Nirmallya Kundu

Home | Services | Complain | Online Application | Details | Settings |

Balance Details  
Transfer Money  
e-Fixed Deposit  
Last 3 Transactions  
Account Statement  
Add An Account  
Close An Account  
Last 5 Login  
Register Complain

Money Transfer

Fixed Deposit Amount	1000 INR.
Fixed Deposit Period	2 Years

Transfer

Copyright © Bank Of Bengal

## 2.16. Customer Last 5 Login Details

Welcome To The Online Portal Of Bank  
Welcome, Mr. Nirmalya Kundu

Home Services Complain Online Application Details Settings

Balance Details Transfer Money e-Fixed Deposit Last 3 Transactions Account Statement Add An Account Close An Account Last 5 Login Register Complain

**Login Details**

Serial	Login TimeStamp	Login IP
1	2014-05-03 19:56:52.0	127.0.0.1
2	2014-05-03 19:59:43.0	127.0.0.1
3	2014-05-03 20:22:15.0	127.0.0.1
4	2014-05-03 20:30:24.0	127.0.0.1
5	2014-05-03 20:34:44.0	127.0.0.1

Close

Copyright © Bank Of Bengal

## 2.17. Customer Last 3 Transaction Details Step1: Select Account & Password

Welcome To The Online Portal Of Bank  
Welcome, Mr. Nirmalya Kundu

Home Services Complain Online Application Details Settings

Balance Details Transfer Money e-Fixed Deposit Last 3 Transactions Account Statement Add An Account Close An Account Last 5 Login Register Complain

**Select Account For Last 3 transaction Details**

From (Account No.) ACC0100000004

Password  Show

Copyright © Bank Of Bengal

## 2.18. Customer Last 3 Transaction Details Step2: Transaction Details

Welcome To The Online Portal  
Welcome, Mr. Nirmalya Kundu

**Transaction Details For :ACC0100000004**

Serial	Transaction ID	Transaction Amount	Transaction Type	Balance	Time Stamp	Details
1	CASHINACC0100000004	1000.0	Credit	1000.0	2014-05-03 19:50:55.0	INR. 1000.0 Transferred To Account Because Of Initial Deposit
2	TRANSMIT0100000001	200.0	Debit	800.0	2014-05-03 20:01:47.0	INR. 200.0 Transferred To Account No. ACC0100000005 Of Bank Of Bengal
3	TRANSMIT0100000001	2.0	Debit	798.0	2014-05-03 20:01:47.0	INR. 2.0 Bankcharges To Transfer Amount to ACC0100000005 Of Bank Of Bengal

Close

Copyright © Bank Of Bengal

## 2.19. Customer Account Statement Step1: Select Account & Password

Select Account For Transaction Statement

From (Account No.)

Password

From

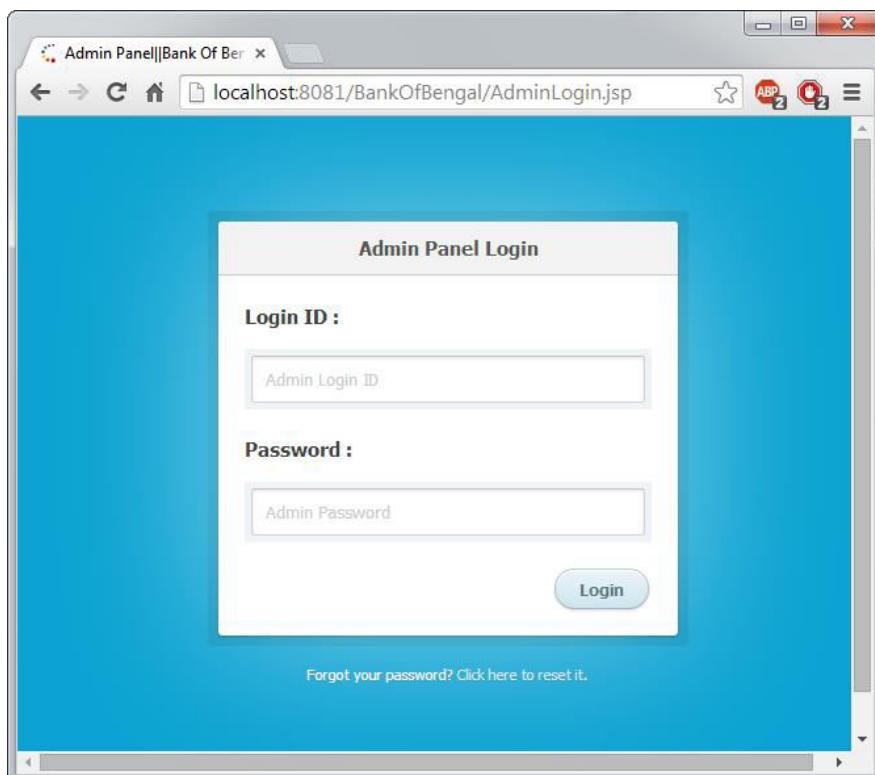
To

Show

## 2.20. Customer Account Statement Step1: Transaction Statement

Transaction Details For :ACC0100000004						
Serial	Transaction ID	Transaction Amount	Transaction Type	Balance	Time Stamp	Details
1	CASHINACC0100000004	1000.0	Credit	1000.0	2014-05-03 19:50:55.0	INR. 1000.0 Transferred To Account Because Of Initial Deposit
2	TRANSMIT0100000001	200.0	Debit	800.0	2014-05-03 20:01:47.0	INR. 200.0 Transferred To Account No. ACC0100000005 Of Bank Of Bengal
3	TRANSMIT0100000001	2.0	Debit	798.0	2014-05-03 20:01:47.0	INR. 2.0 Bankcharges To Transfer Amount toACC0100000005 Of Bank Of Bengal
4	TRANSMIT0100000002	100.0	Debit	698.0	2014-05-03 20:03:01.0	INR. 100.0 Transferred To Account No. ACC0100000005 Of Select Receiver's Bank
5	TRANSMIT0100000002	1.0	Debit	697.0	2014-05-03 20:03:01.0	INR. 1.0 Bankcharges To Transfer Amount toACC0100000005 Of Select Receiver's Bank
6	TRANSMIT0100000006	100.0	Debit	597.0	2014-05-04 09:50:15.0	INR. 100.0 Transferred To Account No. ACC0100000004 Of Bank Of Bengal
7	TRANSMIT0100000006	1.0	Debit	596.0	2014-05-04 09:50:15.0	INR. 1.0 Bankcharges To Transfer Amount toACC0100000004 Of Bank Of Bengal
8	TRANSMIT0100000007	10.0	Debit	586.0	2014-05-04 09:54:27.0	INR. 10.0 Transferred To Account No. ACC0100000004 Of Select Receiver's Bank
9	TRANSMIT0100000007	0.1	Debit	585.9	2014-05-04 09:54:27.0	INR. 0.1 Bankcharges To Transfer Amount toACC0100000004 Of Select Receiver's Bank

### 3.1.1. Admin Login Page



### 3.2.1. Admin Update Bank News

Update Latest News

Enter The Heading And Details for the News to Update

Do not Press F5 or Refresh while filling up this

CurrentTimeStamp	Sat May 03 2014 12:03:58 PM
News Heading	This Is News Heading
News Details	The Detailed Information About The News is Here.

Reset Submit

### 3.2.2. Admin View All Bank News

View Latest News

Click On Refresh Button To Refresh or Reload The News Section.

Serial	News Heading	News Details
1	This Is A Test 1	This is a test whether the message can be retrieved from the database
2	This Is A Test 2	This is a test whether the message can be retrieved from the database
3	This Is A Test 3	This is a test whether the message can be retrieved from the database
4	This Is A Test 4	This is a test whether the message can be retrieved from the database
5	The Heading Of News	This is the detailed information about the news.
6	This Is News Heading	The Detailed Information About The News is Here.

### 3.2.3. Admin View & Delete Bank News

View And Delete Latest News

Click On Delete Button To delete The Corresponding News.

Serial	News Heading	News Details	Delete News
1	This Is A Test 1	This is a test whether the message can be retrieved from the database	<input type="button" value="Delete"/>
2	This Is A Test 2	This is a test whether the message can be retrieved from the database	<input type="button" value="Delete"/>
3	This Is A Test 3	This is a test whether the message can be retrieved from the database	<input type="button" value="Delete"/>
4	This Is A Test 4	This is a test whether the message can be retrieved from the database	<input type="button" value="Delete"/>
5	The Heading Of News	This is the detailed information about the news.	<input type="button" value="Delete"/>
6	This Is News Heading	The Detailed Information About The News is Here.	<input type="button" value="Delete"/>

### 3.3.1. Admin Verify SB Account Open Applications Step1: View All Applications

Verify Applications

Click On Show Button To Open The Corresponding Application.

Serial	Application No.	Customer ID	Applicant's Email	Branch Code	Application Status	Verify Application
1	5	BOBo100000005	nk.nirmallya.kundu@gmail.com	100	VERIFICATION PENDING	<input type="button" value="Show"/>
2	7	BOBo300000007	nk.nirmallya.kundu@gmail.com	300	VERIFICATION PENDING	<input type="button" value="Show"/>

### 3.3.2. Admin Verify SB Account Open Applications Step2: Verify Form Part1

Verify Form Part1 - Google Chrome  
localhost:8081/BankOfBengal/AdminVerifyFormPart1.jsp

Verify Personal Details			
Date Of Registration	03-05-2014	Customer ID BOB0100000005	
Application No.	5		
Branch*	Branch Code 100 Branch Name Gorabazar	56 Gorabazar Lane, Gorabazar, Kolkata., STATE: West Bengal, CITY: Kolkata,	
Customer Type*	<input checked="" type="radio"/> Public <input type="radio"/> Staff	<input type="radio"/> Senior Citizen <input checked="" type="radio"/> Minor	
Name*	Mr. ▼ Nirmallya Kundu	n/a	Kundu
Name Of Guardian*	Father ▼ Sudip Kumar Kundu		
Date Of Birth*	01-06-1992	Gender* <input checked="" type="radio"/> Male <input type="radio"/> Female	
Nationality*	INDIAN ▼		
Mother's Maiden Name*	Sukla Paul	Applicant's Marital Status* Single ▼	
UID of Applicant	123456789	OR UID of Father/Mother (in case Applicant is minor)	

### 3.3.3. Admin Verify SB Account Open Applications Step3: Verify Form Part2

Online Account Open Form Part2 - Google Chrome  
localhost:8081/BankOfBengal/AdminVerifyFormPart2.jsp

Verify Additional Details			
Application No.	5	Customer ID	BOB0100000005
Religion	Hindu ▼	Educational Qualification*	Graduate ▼
Category	General ▼	Occupation Type*	Student ▼
Organization Name	Techno India College Of T	Designation/Profession	STUDENT
Income*	Rs. Upto INR 20,000 ▼ Annually ▼		
Assets (Approximate Value)	Rs. 5000.0		
Vehicle	two wheeler,		
Life Insurance Value	Rs. 0.0		
Life Insurance	n/a		
Existing Loans	n/a		
House	<input type="radio"/> Ancestral <input checked="" type="radio"/> Owned <input type="radio"/> Rented <input type="radio"/> Others		

### 3.3.4. Admin Verify SB Account Open Applications Step4: Verify Form Part2, Form 60/61

Form 60/61 No. [redacted] Customer ID : [redacted]

Form of declaration filled by a person who does not have either a Permanent Account Number or General Index Registration Number and who makes payment in cash in respect of transaction specified in clause (a) to (h) of rule 114B

Full Name of Declarant\* [redacted]  
[redacted]

Address of Declarant\* [redacted]

Particulars of Transaction - (a) Opening of [redacted] account(s)\*  
(b) Issue of Debit Card [redacted]

Amount of Transaction\* [redacted]

Are you assessed to tax?\*  Yes  No

Details of documents being produced in support of address [redacted]

**Back**

### 3.3.5. Admin Verify SB Account Open Applications Step5: Verify Form Part3

Verify Identification Details			
Application No.	5	Customer ID	BOB010000005
Proof Of Identity*		Proof Of Address (Of Correspondence Address)*	
Voter Id Card	[redacted]	Ration Card	[redacted]
Number	123456789	Number	123456789
Issued At	KOLKATA	Issued At	KOLKATA
Issue Date	2012-12-31 (dd-mm-yyyy)	Issue Date	1992-01-01 (dd-mm-yyyy)
<b>Other Account Details</b>			
Please give your details of your accounts in our*/other Bank.			
<b>Bank</b>	<b>Branch</b>	<b>Type Of Account</b>	<b>Account Number</b>
Bank Of Bengal	Gorabazar	SB	123456789
United Bank Of India	Gorabazar	SB	123456789

### 3.3.6. Admin Verify SB Account Open Applications Step6: Accept/Reject Application.

Application Verification Final Stage	
Application No	5
Customer ID	BOB0100000005
Branch Code	100
Remarks	Application Verified
Initial Deposit	1000 INR.
Account No. Alloted	Not Applicable
<input type="button" value="Application Rejected"/> <input type="button" value="Application Accepted"/>	

Application Verification Final Stage	
Application No	5
Customer ID	BOB0100000005
Branch Code	100
Remarks	INR. 1000.0 Transferred To Account Because Of Initial Deposit
Initial Deposit	1000 INR.
Account No. Alloted	.ACC0100000003
<input type="button" value="Close"/>	

### 3.3.7. Admin Customer Login Details Sent To Customer's Email

Gmail - ACCOUNT LOGIN

<https://mail.google.com/mail/?ui=2&ik=d277a857d2&view=f>

Nirmallya Kundu <bankofbengal.india@gmail.com>

**ACCOUNT LOGIN DETAILS**

bankofbengal.india@gmail.com <bankofbengal.india@gmail.com>  
To: nk.nirmallya.kundu@gmail.com

Sat, May 3, 2014 at 2:16 PM

Dear Nirmallya Kundu,  
Your Application with Customer ID - BOB0100000005 is Verified.  
Your Account NO. is ACC0100000002.  
Your Login Details is As Follows:  
Username OR Login ID : nk.nirmallya.kundu2  
Password : Fsf6fhTSvd

-This is an auto generated Email.

- Thank You  
Nirmallya Kundu  
Administrator - Bank Of Bengal

### 3.4.1. Admin View SB Application Status Step1: Enter Customer Details

Application Status - Google Chrome  
localhost:8081/BankOfBengal/ApplicationStatus.jsp

**Customer Application Status**

Customer ID : BOB0100000005

Registered Email : nk.nirmallya.kundu@gmail.com

**Close** **Reset** **Show Status**

### 3.4.2. Admin View SB Application Status Step2: View Status

Application Status - Google Chrome  
localhost:8081/BankOfBengal/ApplicationStatus.jsp

**Customer Application Status**

Customer ID : BOB0100000005

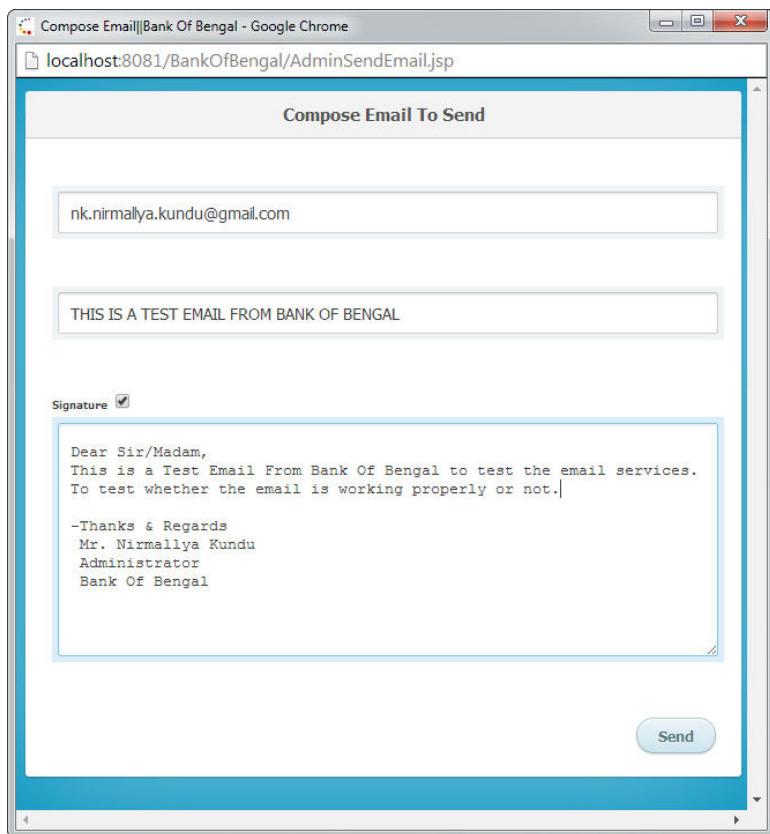
Registered Email : nk.nirmallya.kundu@gmail.com

**Application Status: VERIFICATION PENDING**

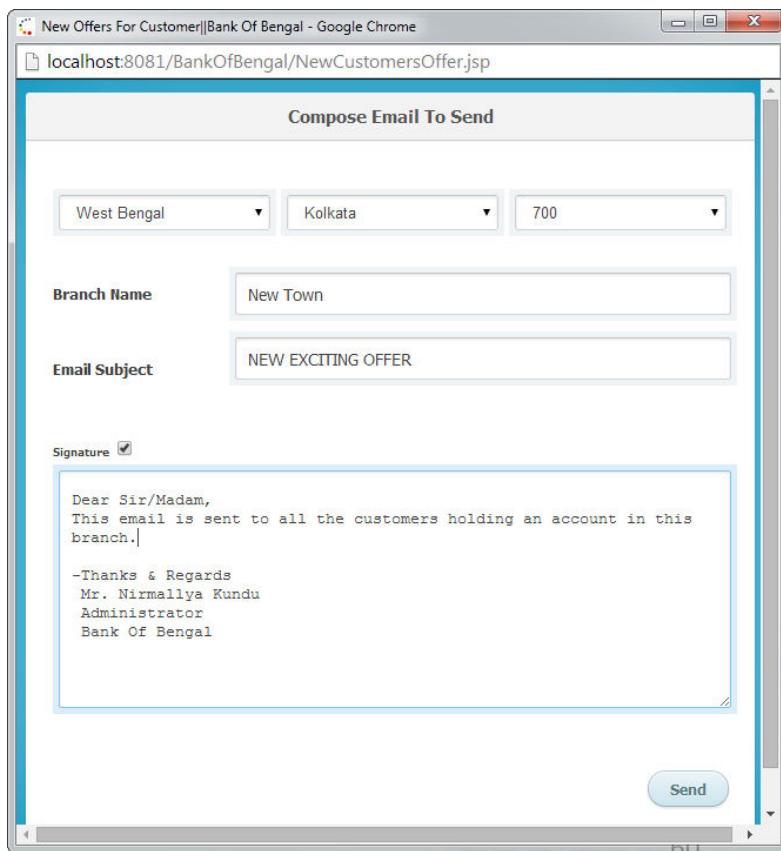
Remarks (If Any): No Remarks.

**Close** **Reset** **Show Status**

### 3.5.1. Admin Send Email To Any Customer



### 3.5.2. Admin Send Email To All Customer of a Branch, Branch Wise Notification



### 3.6.1. Admin View and Reply to Complaints & Queries Step1: Select Complain To Reply

The screenshot shows a web application window titled "View And Reply Customer Complain". The URL in the address bar is "localhost:8081/BankOfBengal/ComplainReply.jsp". The page contains a table with the following data:

Serial	Customer Email	Subject	Details	Reply
1	nk.nirmallya.kundu@gmail.com	THIS IS TEST COMPLAIN 2	This is a test Complain.	<input type="button" value="Reply"/>
2	nk.nirmallya.kundu@gmail.com	THIS IS TEST COMPLAIN 3	This is a test Complain.	<input type="button" value="Reply"/>
3	nk.nirmallya.kundu@gmail.com	THIS IS TEST COMPLAIN 4	This is a test Complain.	<input type="button" value="Reply"/>
4	nk.nirmallya.kundu@gmail.com	THIS IS TEST COMPLAIN 5	This is a test Complain.	<input type="button" value="Reply"/>

### 3.6.2. Admin View and Reply to Complaints & Queries Step2: Compose Reply To Complain

The screenshot shows a web application window titled "Compose Email" with the URL "localhost:8081/BankOfBengal/ComplainReplyWindow.jsp". The page contains a form titled "Compose Reply To Send" with the following fields:

- To: nk.nirmallya.kundu@gmail.com
- Subject: THIS IS TEST COMPLAIN 5
- Signature (checkbox checked):

Dear Sir/Madam,  
COMPLAIN No. : 6  
This is a test Complain.  
SOLUTION OR SUGGESTION :  
Here The Solution to The Problem is to be Written.  
|  
-Thanks & Regards  
Mr. Nirmallya Kundu  
Administrator  
Bank Of Bengal
- Send button

### 3.7.1. Admin View All Transaction Branch Wise Step1: Select Branch from Branch Chooser

BranchWise Transaction S X  
localhost:8081/BankOfBengal/AdminTransactionStatementBranchSelectServlet ABP

Select Branch And Period For BranchWise Transaction Statement

Branch Code: 100 Click Here To Choose

Branch Name: Gorabazar

From: 01-05-2014

To: 05-05-2014 x ▲ ▼

Show

### 3.7.2. Admin View All Transaction Branch Wise Step2: View Statement

All Transaction Details

Serial	Transaction ID	Transaction Amount	Transaction Type	Balance	Time Stamp	Details
1	CASHINACC0100000001	1000.0	Credit	1000.0	2014-05-03 14:16:25.0	INR. 1000.0 Transferred To Account Because Of Initial Deposit
2	CASHINACC0100000002	1000.0	Credit	1000.0	2014-05-03 14:16:34.0	INR. 1000.0 Transferred To Account Because Of Initial Deposit
3	CASHINACC0100000004	1000.0	Credit	1000.0	2014-05-03 19:50:55.0	INR. 1000.0 Transferred To Account Because Of Initial Deposit
4	CASHINACC0100000005	2000.0	Credit	2000.0	2014-05-03 19:51:55.0	INR. 2000.0 Transferred To Account Because Of Initial Deposit
5	CASHINACC0100000006	5000.0	Credit	5000.0	2014-05-03 19:52:31.0	INR. 5000.0 Transferred To Account Because Of Initial Deposit
6	TRANSMT0100000001	200.0	Debit	800.0	2014-05-03 20:01:47.0	INR. 200.0 Transferred To Account No. ACC0100000005 Of Bank Of Bengal

### 3.7.3. Admin View Bank Account Transaction Branch Wise Step1: Select Branch from Branch Chooser

Bank Account Statement || X

localhost:8081/BankOfBengal/BankTransactionStatementBranchSelect.jsp

Select Branch And Period For Bank Account Statement

Branch Code: 100 Click Here To Choose

Branch Name: Gorabazar

From: 01-05-2014

To: 05-05-2014

Show

### 3.7.4. Admin View Bank Account Transaction Branch Wise Step2: View Statement

Bank Account Details || X

localhost:8081/BankOfBengal/BankTSBranchSelectServlet

Transaction Details For Bank Account

Serial	Transaction ID	Transaction Amount	Transaction Type	Time Stamp
1	CASHINACC010000001	1000.0	Credit	2014-05-03 14:16:25.0
2	CASHINACC010000002	1000.0	Credit	2014-05-03 14:16:34.0
3	CASHINACC010000004	1000.0	Credit	2014-05-03 19:50:55.0
4	CASHINACC010000005	2000.0	Credit	2014-05-03 19:51:55.0
5	CASHINACC010000006	5000.0	Credit	2014-05-03 19:52:31.0
6	TRANSMIT010000001	2.0	Credit	2014-05-03 20:01:47.0
7	TRANSMIT010000002	1.0	Credit	2014-05-03 20:03:01.0
8	TRANSMIT010000003	1.0	Credit	2014-05-03 21:45:21.0
9	TRANSMIT010000004	5.0	Credit	2014-05-03 22:12:13.0

### 3.7.5. Admin View Customer Account Transaction Step1: Select Account No.

Customer Account Statement

localhost:8081/BankOfBengal/AdminCustomerAccountSelectTS

Select Customer Account And Period For Transaction Statement

Account No. ACC0100000004

From 01-05-2014

To 05-05-2014

Show

### 3.7.6. Admin View Customer Account Transaction Step2: View Statement

Customer Transaction Details

Serial	Transaction ID	Transaction Amount	Transaction Type	Balance	Time Stamp	Details
1	CASHINACC0100000004	1000.0	Credit	1000.0	2014-05-03 19:50:55.0	INR. 1000.0 Transferred To Account Because Of Initial Deposit
2	TRANSMT0100000001	200.0	Debit	800.0	2014-05-03 20:01:47.0	INR. 200.0 Transferred To Account No. ACC0100000005 Of Bank Of Bengal
3	TRANSMT0100000001	2.0	Debit	798.0	2014-05-03 20:01:47.0	INR. 2.0 Bankcharges To Transfer Amount to ACC0100000005 Of Bank Of Bengal
4	TRANSMT0100000002	100.0	Debit	698.0	2014-05-03 20:03:01.0	INR. 100.0 Transferred To Account No. ACC0100000005 Of Select Receiver's Bank
5	TRANSMT0100000002	1.0	Debit	697.0	2014-05-03 20:03:01.0	INR. 1.0 Bankcharges To Transfer Amount to ACC0100000005 Of Select Receiver's Bank
6	TRANSMT0100000006	100.0	Debit	597.0	2014-05-04 09:50:15.0	INR. 100.0 Transferred To Account No. ACC0100000004 Of Bank Of Bengal

### 3.8.1. Admin Verify Money Transfer Step1: View All Pending request

Verify Money Transfer						
Click On Show Button To Open The Corresponding Window.						
Refresh						
Serial	Transaction ID	Sender AccountNo	Receiver AccountNo	Receiver Bank	Transaction Time	Verify Transfer
1	TRANSMT0100000002	ACC0100000004	ACC0100000005	Select Receiver's Bank	2014-05-03 20:03:01.0	Show
2	TRANSMT0100000003	ACC0100000006	ACC0100000004	Bank Of Bengal	2014-05-03 21:45:21.0	Show
3	TRANSMT0100000004	ACC0100000005	ACC0100000004	Bank Of Bengal	2014-05-03 22:12:13.0	Show

### 3.8.2. Admin Verify Money Transfer Step2: Verify Receiver's Account & Accept/Reject

Transaction - Google Chrome

localhost:8081/BankOfBengal/AdminVerifyMoneyTransfe

Money Transfer Verification Window	
Transaction ID	TRANSMT0100000002
Branch Code	100
Sender Account No.	ACC0100000004
Receiver Bank	Select Receiver's Bank
Receiver Account No.	ACC0100000005
Transaction Amount	100
Bank Charges	1
Total Amount	101
Transaction Time	2014-05-03 20:03:01.0
Sender Email	nk.nirmallya.kundu@gmail.com
	<input type="button" value="Verify Receiver Account"/>

Verification Window - Google Chrome

localhost:8081/BankOfBengal/AdminVerifyMoneyTransfe

Money Transfer Verification Window	
Transaction ID	TRANSMT0100000002
Branch Code	100
Sender Account No.	ACC0100000004
Receiver Bank	Select Receiver's Bank
Receiver Account No.	ACC0100000005
Transaction Amount	100
Bank Charges	1
Total Amount	101
Transaction Time	2014-05-03 20:03:01.0
Sender Email	nk.nirmallya.kundu@gmail.com
Status	Receiver's Account Verified
	<input type="button" value="Reject Transaction"/> <input type="button" value="Accept Transaction"/>

### 3.9.1. Admin Verify e-FD Request Step1: View All Pending request

Verify Fixed Deposit

localhost:8081/BankOfBengal/AdminVerifyFD.jsp

Verify e-Fixed Deposit							
Click On Show Button To Open The Corresponding Window.							
Serial	Transaction ID	e-FD ID	Account No.	e-FD Amount	Branch Code	Transaction Time	Verify e-FD
1	TRANSFD0100000001	FD0100000001	ACCo100000006	1000.0	100	2014-05-03 22:39:43.0	<input type="button" value="Show"/>
2	TRANSFD0100000002	FD0100000002	ACCo100000006	500.0	100	2014-05-03 23:14:50.0	<input type="button" value="Show"/>

### 3.8.1. Admin Verify e-FD Request Step1: Accept/Reject e-FD

Verification Window - Google Chrome

localhost:8081/BankOfBengal/AdminVerifyFDWindow.jsp

e-Fixed Deposit ID	FD0100000001	Transaction ID	TRANSFD0100000001
Accountno	ACCo100000006	Branch Code	100
e-FD Amount	1000.0	Interest	5.0
Term	3 Months 10 Days	Maturity Amount	1013.6986301369863
Customer Type	public	Customer Age	general
Full Name	Mr. Nirmallya Kundu	Date Of Birth	1992-06-01
Nationality	indian	UID of	1234567890
Correspondence Address	15/1, HARI MOHAN DUTTA ROAD, LandMark: LICHUBAGAN, District: NORTH 24 PARGANAS,	Permanant Address	15/1, HARI MOHAN DUTTA ROAD, LandMark: LICHUBAGAN, District: NORTH 24 PARGANAS,
Mobile No.	+91-9874419626	Telephone No.	+9133-25903018
Email ID	nk.nirmallya.kundu@gmail.com	PAN / Form6o No.	1234567890
Transaction Time	2014-05-03 22:39:43.0		
<input type="button" value="Application Rejected"/> <input type="button" value="Application Accepted"/>			

### 3.10.1. Admin Verify e-FD Maturity Step1: View All e-FD

Serial	e-FD ID	e-FD Amount	Start Date	Maturity Date	Account No.	Branch Code	Name	Mature e-FD
1	FD0100000001	1000.0	2014-05-03	2014-08-11	ACCo100000006	100	Mr. Nirmallya Kundu	<input type="button" value="Show"/>
2	FD0100000002	500.0	2014-05-03	2014-08-11	ACCo100000006	100	Nirmallya Kundu	<input type="button" value="Show"/>

### 3.10.2. Admin Verify e-FD Maturity Step2: Mature e-FD

Interest Earned	0.0	Penalty Charges	0.0
Total Amount 1000.0			
Customer Type	public	Customer Age	general
Full Name	Mr. Nirmallya Kundu	Date Of Birth	1992-06-01
Nationality	indian	UID of	1234567890
Correspondence Address	15/1, HARI MOHAN DUTTA ROAD, LandMark: LICHUBAGAN, District: NORTH 24 PARGANAS,	Permanent Address	15/1, HARI MOHAN DUTTA ROAD, LandMark: LICHUBAGAN, District: NO PARGANAS,
Mobile No.	+91-9874419626	Telephone No.	+9133-25903018
Email ID	nk.nirmallya.kundu@gmail.com	PAN / Form6o No.	1234567890
Transaction Time	2014-05-03 23:20:56.0	<input type="button" value="Mature FD"/>	

### 3.11.1. Admin Verify Customer Account Close Step1: View All Pending Request

The screenshot shows a web browser window titled "Verify Account Close" with the URL "localhost:8081/BankOfBengal/AdminVerifyAccountClose.jsp". The page is titled "Verify Customer Account Close Request" and contains a message "Click On Show Button To Open The Corresponding Window." Below this is a table with columns: Serial, Account No., Customer ID, Email, Branch Code, e-FD Application, e-FD Maturity, Money Transfer, and Close Account. A single row is visible with values: Serial 1, Account No. ACC0100000002, Customer ID BOB0100000005, Email nk.nirmallya.kundu@gmail.com, Branch Code 100, e-FD Application button, e-FD Maturity button, Money Transfer button, Close Account button.

### 3.11.2. Admin Verify Customer Account Close Step2: Close Account Window

The screenshot shows a web browser window titled "Verification Window - Google Chrome" with the URL "localhost:8081/BankOfBengal/AdminVerifyAccountCloseWindow.jsp". The page is titled "Account Close Verification Window" and displays the following account details in a grid:

Account No	ACC0100000006	Branch Code	100
Customer ID	BOB0100000010	Full Name	Mr. Nirmallya Kundu
Email ID	nk.nirmallya.kundu@gmail.com	PAN / Form6o No.	1234567890
Mobile No.	+91-9874419626	Telephone No.	+9133-25903018

Below the grid, it shows "Account Balance" as 4399 INR. At the bottom is a button labeled "Clear Account Balance And Close Account".

### 3.12.1. Admin Update Bank Constraints.

Update Bank Constraints Window - Google Chrome

localhost:8081/BankOfBengal/UpdateBankConstraints.jsp

**Update Bank Constraints Details**

Enter The Details for the Constraints to Update

Do not Press F5 or Refresh while filling up this

CONSTRAINT NAME	VALUE	TYPE
Minimum Account Balance	500	INR ▾
Money Transfer Charge	1	% ▾

Reset    Submit

### 3.13.1. Admin Add a New Branch

Add Branch Details Window - Google Chrome

localhost:8081/BankOfBengal/AddBranchDetailsWindow.jsp

**Add New Branch Details**

Enter The Details for the Branch to Add

Do not Press F5 or Refresh while filling up this

Branch Serial No.	9
Branch Code	900
Branch Name	Baghajatin
Branch State	West Bengal ▾
Branch City	Kolkata ▾
Branch PinCode	700091
Branch Address	Baghajatin Sarani, Kolkata.

Reset    Submit

### 3.14.1. Admin Add New Branch Manager Step1: Enter Admin Details

Add Branch Manager Window - Google Chrome  
localhost:8081/BankOfBengal/AddBranchManagerWindow.jsp

Add New Branch Manager

Enter The Details for the Branch Manager

Do not Press F5 or Refresh while filling up this

Manager Serial No.	6
Branch State	West Bengal
Branch City	Kolkata
Branch Code	700
Branch Name	New Town
Manager Full Name	Nirmallya Kundu
Manager Email ID	nk.nirmallya.kundu@gmail.com

Reset Submit

### 3.14.2. Admin Add New Branch Manager Step2: Admin Login Details in Email

Gmail - MANAGER ACCO | <https://mail.google.com/mail/?ui=2&ik=d277a857d2&>

Nirmallya Kundu <bankofbengal.india@gmail.com>

**MANAGER ACCOUNT LOGIN DETAILS**

bankofbengal.india@gmail.com <bankofbengal.india@gmail.com> Sat, May 3, 2014 at 12:39 PM  
To: nk.nirmallya.kundu@gmail.com

Dear Nirmallya Kundu,  
Your Login Details is As Follows:  
Username OR Login ID : nk.nirmallya.kundu6  
Password : QjMy1Rxma

-This is an auto generated Email.  
- Thank You  
Nirmallya Kundu  
Administrator - Bank Of Bengal

#### 4.1 Customer Open SB Account Application Form Part1:Personal Details

**Personal Details**

Do not Press F5 or Refresh while filling up this form

Application No.	5	Sat May 03 2014 12:48:08 PM
Branch* <a href="#">Click Here To Choose</a>	Branch Code 100 Branch Name Gorabazar	56 Gorabazar Lane. Gorabazar, State: West Bengal, City:Kolkata, Pincode: 700028.
Customer Type*	<input checked="" type="radio"/> Public <input type="radio"/> Staff	<input type="radio"/> Senior Citizen <input checked="" type="radio"/> Minor
Name*	Mr. Nirmalya Kundu Middle Name Kundu	
Name Of Guardian*	Father Mr. Sudip Kumar Kundu	
Date Of Birth*	1 Jun 1992	Gender* <input checked="" type="radio"/> Male <input type="radio"/> Female
Nationality*	INDIAN	

#### 4.2 Customer Open SB Account Application Form Part1: Branch Chooser

**Branch Details**

Refine Your Search Either by Selecting State Or/And City Or/And City Or/And PinCode Or/And BranchCode

Select	Branch Code	Branch Name	Branch State	Branch City	Branch PinCode	Branch Address
<input type="checkbox"/>	100	Gorabazar	West Bengal	Kolkata	700028	56 Gorabazar Lane. Gorabazar
<input type="checkbox"/>	300	Kossipore	West Bengal	Kolkata	700038	267 Kossipore Road. Dum Dum. Kossipore
<input type="checkbox"/>	320	Barrackpore	West Bengal	Kolkata	700063	90/45/B Barrackpore Road. Kolkata.
<input type="checkbox"/>	400	Hatibagan	West Bengal	Kolkata	700092	H.B.G. Sarani Hatibagan

#### 4.3 Customer Open SB Account Application Form Part2: Additional Details

The screenshot shows a web-based application form titled "Additional Details". At the top, a red warning message reads "Do not Press F5 or Refresh while filling up this form". The form consists of several rows of input fields:

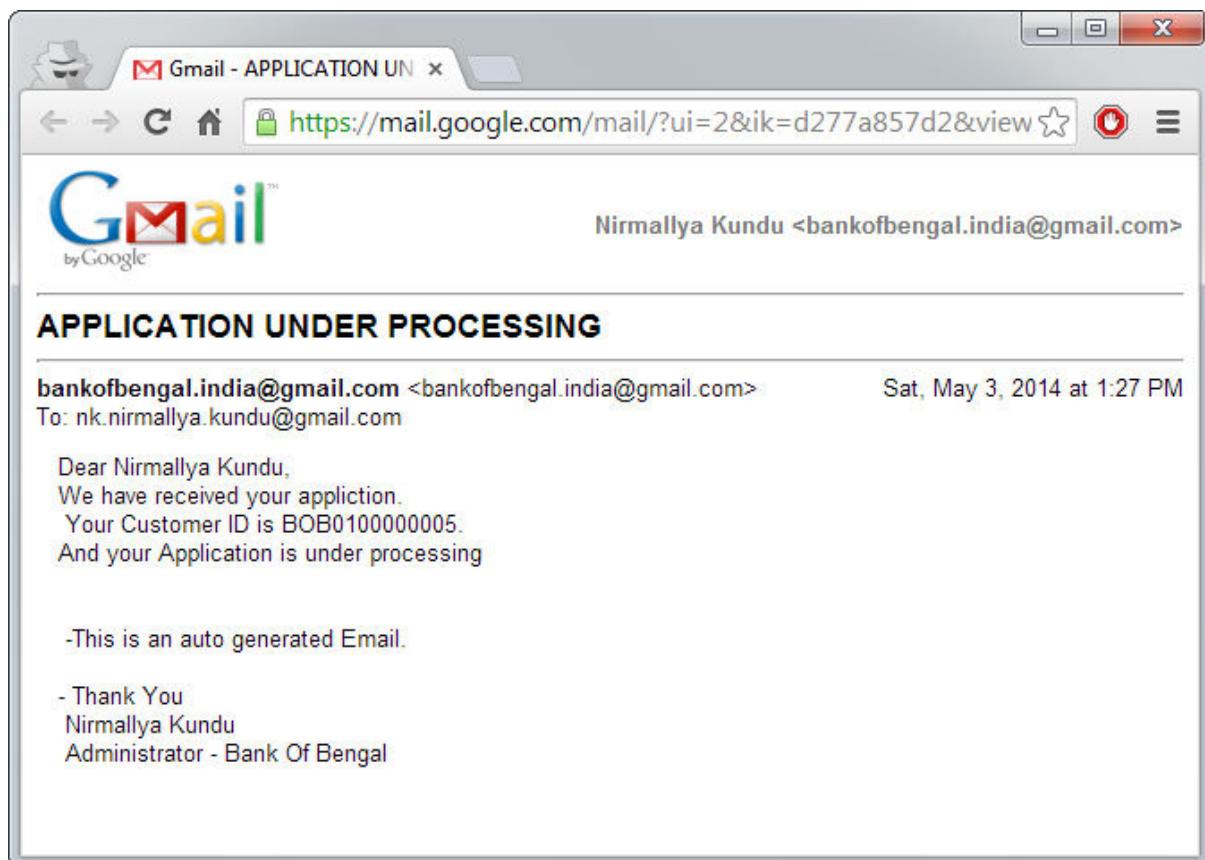
Application No.	5	Customer ID	BOB0100000005
Religion	Hindu	Educational Qualification*	Graduate
Category	General	Occupation Type*	Student
Organization Name	Techno India College Of Technok	Designation/Profession	STUDENT
Income*	Rs. Upto INR 20,0	Annually	Assets (Approximate Value) Rs. 5000
Vehicle	<input checked="" type="checkbox"/> Two Wheeler <input type="checkbox"/> Four Wheeler <input type="checkbox"/> others		
Life Insurance Value	Rs. 0.0		

#### 4.4 Customer Open SB Account Application Form Part1:Personal Identification

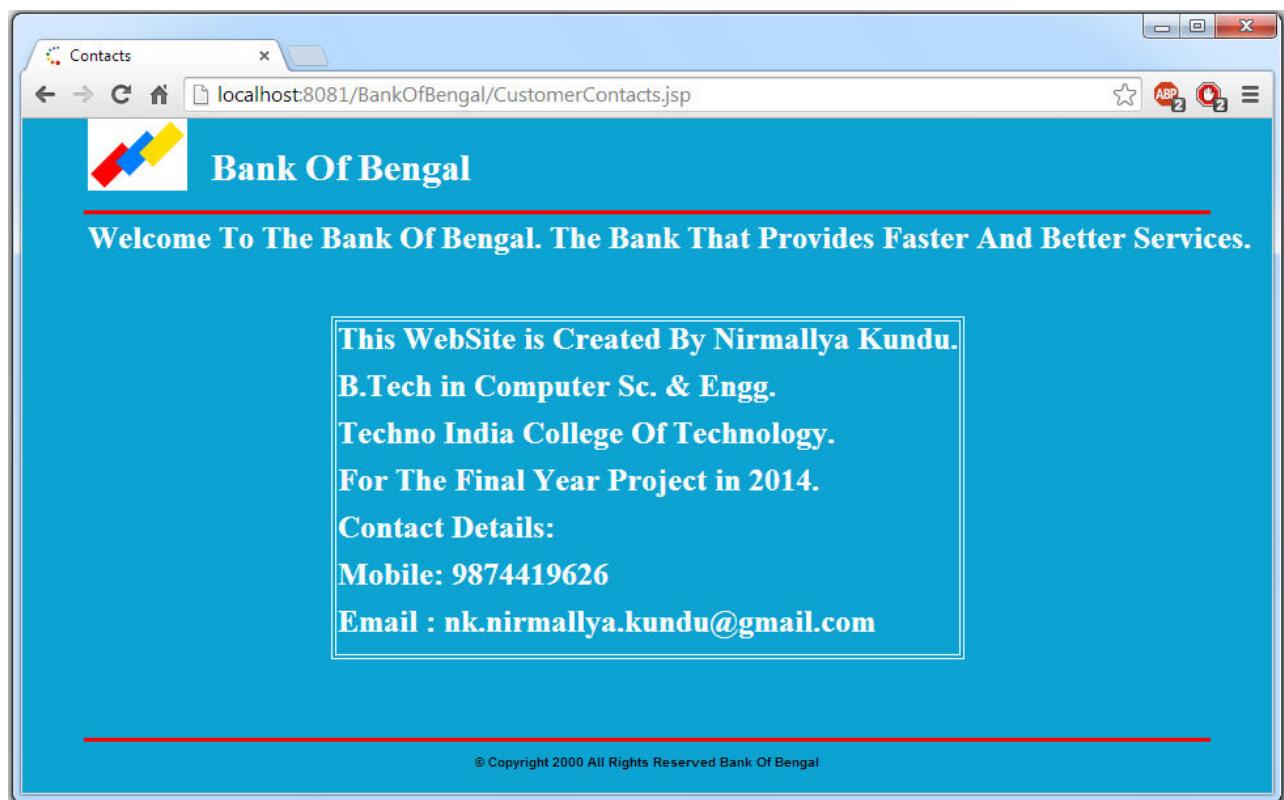
The screenshot shows a web-based application form titled "Identification Details". At the top, a red warning message reads "Do not Press F5 or Refresh while filling up this form". The form is divided into two main sections: "Proof Of Identity\*" and "Proof Of Address (Of Correspondence Address)\*".

Application No.	5	Customer ID	BOB0100000005
Proof Of Identity*		Proof Of Address (Of Correspondence Address)*	
Voter Id Card		Ration Card	
Number	123456789	Number	123456789
Issued At	KOLKATA	Issued At	KOLKATA
Issue Date	31-12-2012	Issue Date	01-01-1992
Other Account Details Please give your details of your accounts in our*/other Bank.			

#### 4.5 Customer Open SB Account Application Form : CID Sent to Email



#### 4.1. Contacts / Website Creator



## **5. TESTING**

### **5.1 Introduction To System Testing & Implementation**

System testing is very much essential before actual implementation of the system. All kinds of errors and incompatibility must be removed before it is ready for user acceptance testing. If all parts of system are correct, then the system objective will be successfully achieved, otherwise not.

Inadequate testing or non-testing leads to the errors that may not appear till months later. This creates two types of problems.

- The lack between the cause and appearance of the problem
- The effect of system errors on files and records within the system.

A small system errors can conceivably exploded into much larger problem. Effective testing earlier in the purpose translates directly into long term cost savings from reduced no of errors. Another reason for system testing is its utility as an user oriented vehicle before implementation. The first test of the system is to see whether it produces the correct output. No other test can be more crucial.

Some of the tests, which can have been performed, are given below.

#### **5.1.1 Online Response**

Online system must have a response time that will not cause hard ship to the user. One way to test this is to input translations in a as among CRT screen as would normally be used in the peak hour and time the response to each online functions to establish a true performance.

#### **5.1.2 Volume**

In this test, we create as many records as would normally produced to verify that the hardware and software would function properly. The user is usually asked to provide test data for volume testing.

#### **5.1.3 Stress Testing**

The purpose of stress testing is to provide that the system does not mal function under peak loads on like volume testing, where time is not a factor. We subject system to a high volume of data over sort time period. This simultaneous an on line environment where a high volume of activity occurs inspirits.

A force system failure is induced to test a backup recovery procedure for file integration. Inaccurate data are entered to see how the system responds error detection and correction related to file integrity as a test tool demonstrate that data and program are secure from unauthorized access

## **5.2 Usability Documentation & Procedure**

The usability test verifies the user-friendly nature of the system. It also tests whether an unknown user can handle freely. The crucial phase of system life cycle is the successful implementation of the new system design. Implementation simply means converting a new system design into operations. This involves creation compatible files training the operation staff and installing hardware terminal and telecommunication network before the system setup and running critical factor in conversion is not disruption the functioning of the organization.

## **5.3 Testing Of Individual Programs**

The testing of individual programs was completed during the program development stage itself. Each program was tested with some test data at the time of coding and necessary changes made there on to made sure that program is working properly.

## **5.4 Creating Test Data**

Though some test data were created during individual program development. it was not sufficient for testing the system as a whole. During the time of checking has been depending upon situation.

## **5.5 Testing Of Forms**

Testing of forms is an intensive task. Forms were tested to ensure that they have been performs the task that they were designed for. Conversions and modifications are done whenever necessary as regards to any change into the database table, retrieving data from database table on to forms, valid data check in the input data calculation required to be done by the forms etc.

## **5.6 System Testing**

After successful completion of individual forms the whole system was run through a series of test to ensure the working of the system as a whole. The effect of testing the entire system is to verify the programs are working according to user specification that wear made during the period of the system study. Also to ensure the validity of input data and output result when all the programs and all forms are inter connected to run the program. System testing involves the following.

- Unit testing
- Black box testing
- White box testing

## **5.7 Unit Testing**

Unit tests are done in each unit by testing the local data structure and the independent path set in the program putting some wrong data to the unit and validating then by making system fail forcefully does these tests. Although all these units are interrelated but for test purpose we isolate every unit from others. Unit testing is very important for actual validity of each unit

## **5.8 Black box Testing**

Black box testing focuses on the functional requirement of the software. i.e. black box testing enables the software engineer to derive the set of input condition that will fully exercise all functional requirements for a program. Black box test generally attempts to find errors in the following categories.

- Incorrect or missing function
- Interface errors
- Errors in data structure or external database access
- System performance errors
- Initialization and termination errors

In our system we implementing the black box test on the modules and the functions used.

## **5.9 White box Testing**

White box testing is also called Glass box testing, is a test case design method that uses the control structure of the procedural design method that uses the control structure of the procedural design to derive test cases. White box test is done on the control statement and procedures of the software using white box testing method, then software engineer can derive test case that

- Guarantee that all independent paths within a module have been exercised at least once
- Exercise all logical decisions on their boundaries and within their operational bounds
- Exercise internal data structures to assure their validity.

## **5.10 User Training**

User training is an important aspect to be taken in to account before implementation of any system, for proper functioning and utilization of any system. User training must be proper. The extent of training and education to be provided to the user depend upon the complexity of the new system. The prospective user allows operating the system at the system demonstration independently. In this case the concerned company trains the users.

## **6. CONCLUSION**

This Web Application provides facility to for online banking system to be used by the customer/user world wide. It saves time as it mainly allows to transfer money, view account balance details, view account statement, apply for fixed deposit at one click from anywhere in the world just sitting in front of the computer. It also allows the new user to fill up the new SB Account Opening Application Form and many more features.

Mainly Administrator has a privilege to verify the new account opening application form, edit application form, edit customer contact details, verify money transfer, verify online fixed deposit, mature fixed deposit, update bank constraints, update bank news, assign a new branch manager, and verify customer account close request and many more features.

This system enables to perform better and more efficiently, it speeds up all the activities and provides good communication amongst all departments.

Features like modularization, maximum cohesion and least coupling have been followed in the development of the project. Exceptional conditions like incorrect input, invalid values of variables and overflows have been checked for in the project.

Hence, the system is a robust system.

## **7. FUTURE SCOPE**

Due to lack of time and limited resources we have implemented a small version of “e-music world”. In the near future we have planned to improve the project on the following aspects:

- Presently our project has been implemented in an intranet environment, which can be enhanced to a larger domain i.e. internet in near future .By doing so a website of e-Banking can be launched, to which people from all over the world will have access.
- With time we can enhance our present database for accommodating more number of transactions.
- In our website a download accelerator which is created in java can be added by which people accessing e-Banking website can download the various transaction reports in less time.
- In near future we can add other facilities for customers benefit.

## 8. References / Bibliography

During the development of the project the following books have been referred.

- MySQL notes from www.tutorialspoint.com
- The Complete Reference JAVA 2  
TMH Publications, third Edition.
- PL/SQL Users Guide and Reference Version 2  
Oracle Corporation.
- Java JSP & Servlet from  
Head First J2EE Book

The websites that have been referred.

- [www.w3schools.com](http://www.w3schools.com)
- [www.tutorialspoint.com](http://www.tutorialspoint.com)
- [www.mapsofindia.com](http://www.mapsofindia.com)
- [www.wikipedia.org](http://www.wikipedia.org)
- [www.google.com](http://www.google.com) (for searching purpose)