

BANKING SYSTEM

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1 Introduction

1.1 Purpose of the product:

The purpose of this document is to give detailed description of application requirements, both functional and nonfunctional for the “Banking System”. This document provides;

- A definition of application capabilities.
- A specification of the application’s functional and nonfunctional requirements.
- Environment description in which application operates.

The document is intended to serve following audiences

- First designers will use this information as the basis to create application such user friendly environment.
- Second the client reviews the document that it’s clarify their needs, and fulfilling both functional and nonfunctional requirements as basis for an agreement between client and user.
- Third the application maintainers will review documents to clarify about what the application does.

1.2 Scope of product:

The “Banking System” is an application which aims to provide an improvement in the system of BANKS for managing, storing and retrieving data to facilitate the customer in applying for creating, updating account and withdrawing, depositing cash etc. The application is accessible from everywhere.

All System information is maintained in a database in one central location, which is located on a web-server. An account # and bank name will be required to search and display information.

1.3 Overview of product:

The rest of the Banking System examines the complete specifications of the application. Section 2 presents the general factors that affect the Banking System and its requirements such as user characteristics and general constraints. Section 3 outline the functional and nonfunctional requirements.

2 General Description

2.1 Product Perspective:

The Banking System is a Web Application, through web user can access to its account and gets interact with by just their account #, and this application will communicate with database to gets information, and all databases communication will go over the internet.

2.2 Product Functions:

Through this web application the user will access their accounts through account number and deposit or withdraw money using their account pins. This system will also provide functionality

2.3 Characteristics:

There are two types of user that interact with the system Client and Bank Management. Each of these type of user has different use of the system. Each of them has their own requirements. Client can use the application for depositing, withdrawing and bill payments and etc.

The bank Management have full access to either get or update data. They will manage the overall system.

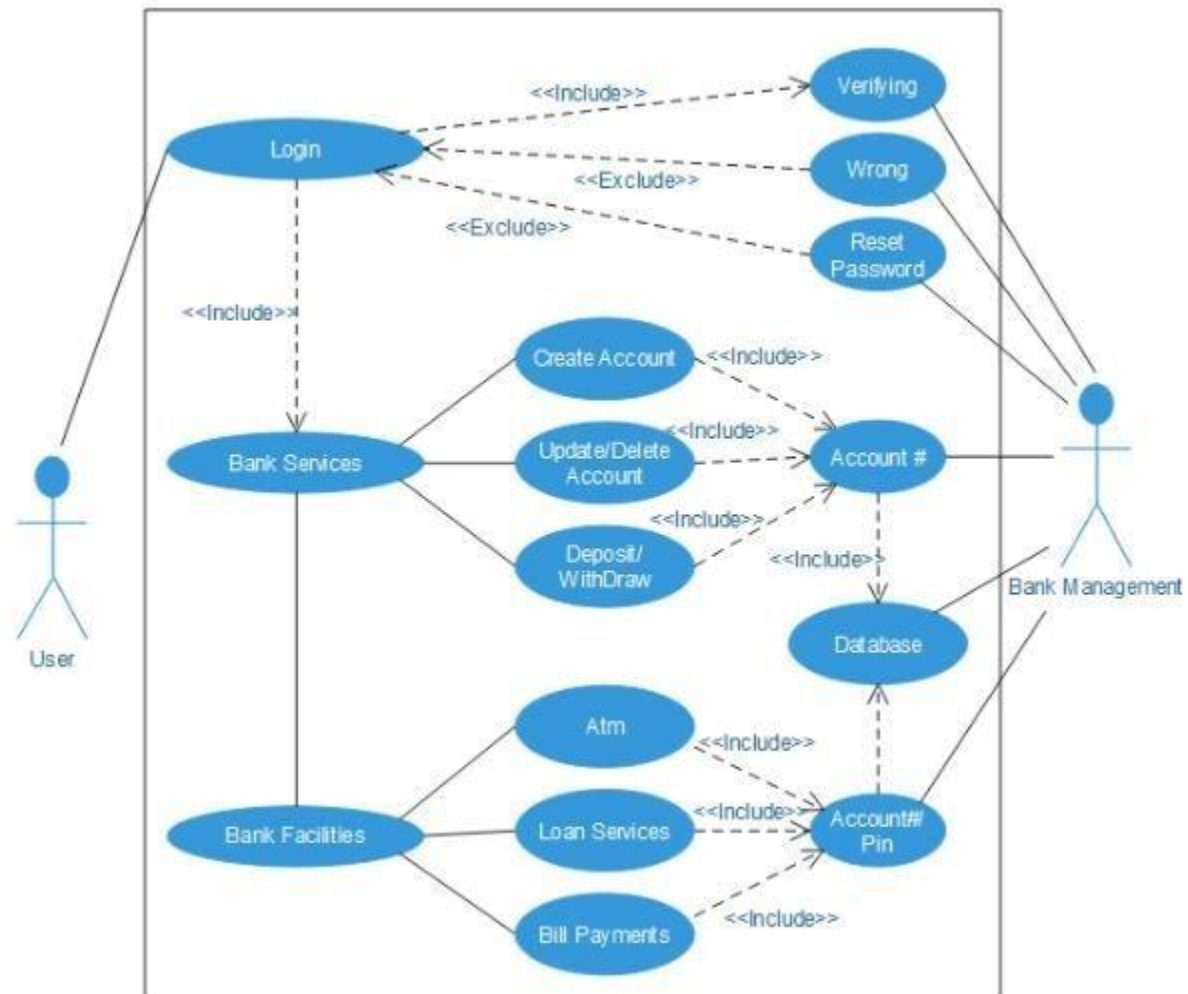
2.4 Constraints:

The internet connection is a constraint for the application. Since the application fetches the data from database over the internet. It is crucial that there is an internet connection for the application to function.

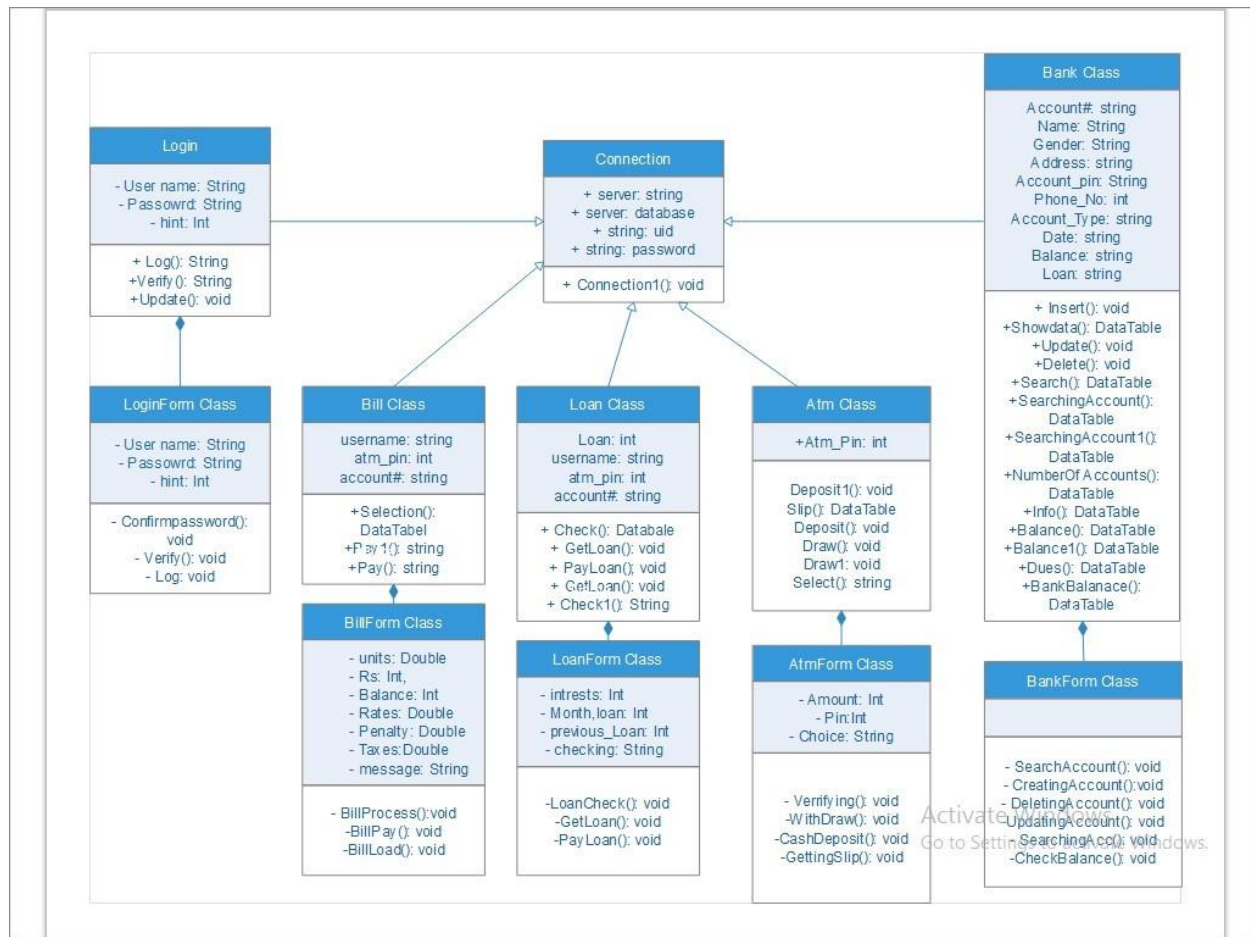
3. Related Work

- Finacle
(<https://www.infosys.com/newsroom/features/Pages/advanced-universal-banking-solution.aspx>)
Finacle is a core banking product developed by Indian corporation Infosys that provides universal banking functionality to Banks
- HomeBank
(<http://homebank.free.fr/en/>)
At Home Bank, you'll find a personal banking atmosphere and bankers who take the time to understand your needs and goals.
- MicroSoft Money (<https://www.microsoft.com/enpk/download/details.aspx?id=20738>)
Microsoft Money is a personal finance management software program by Microsoft. It has capabilities for viewing bank account balances, creating budgets, and tracking expenses,

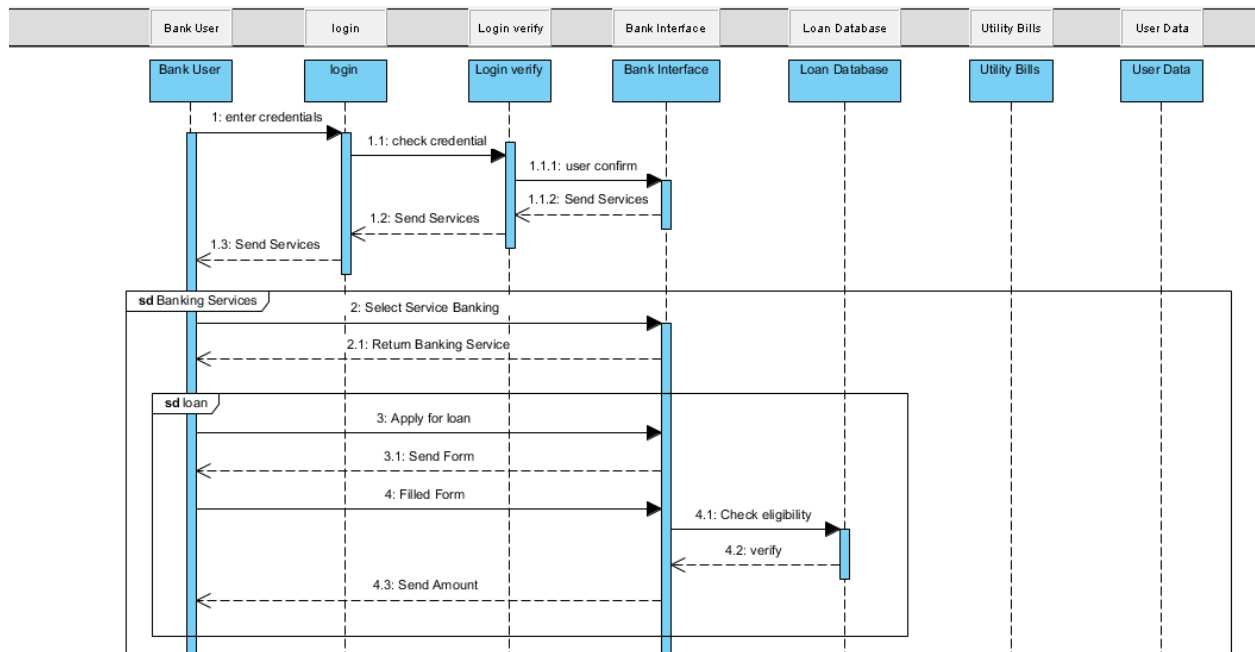
4. Used Case Diagram

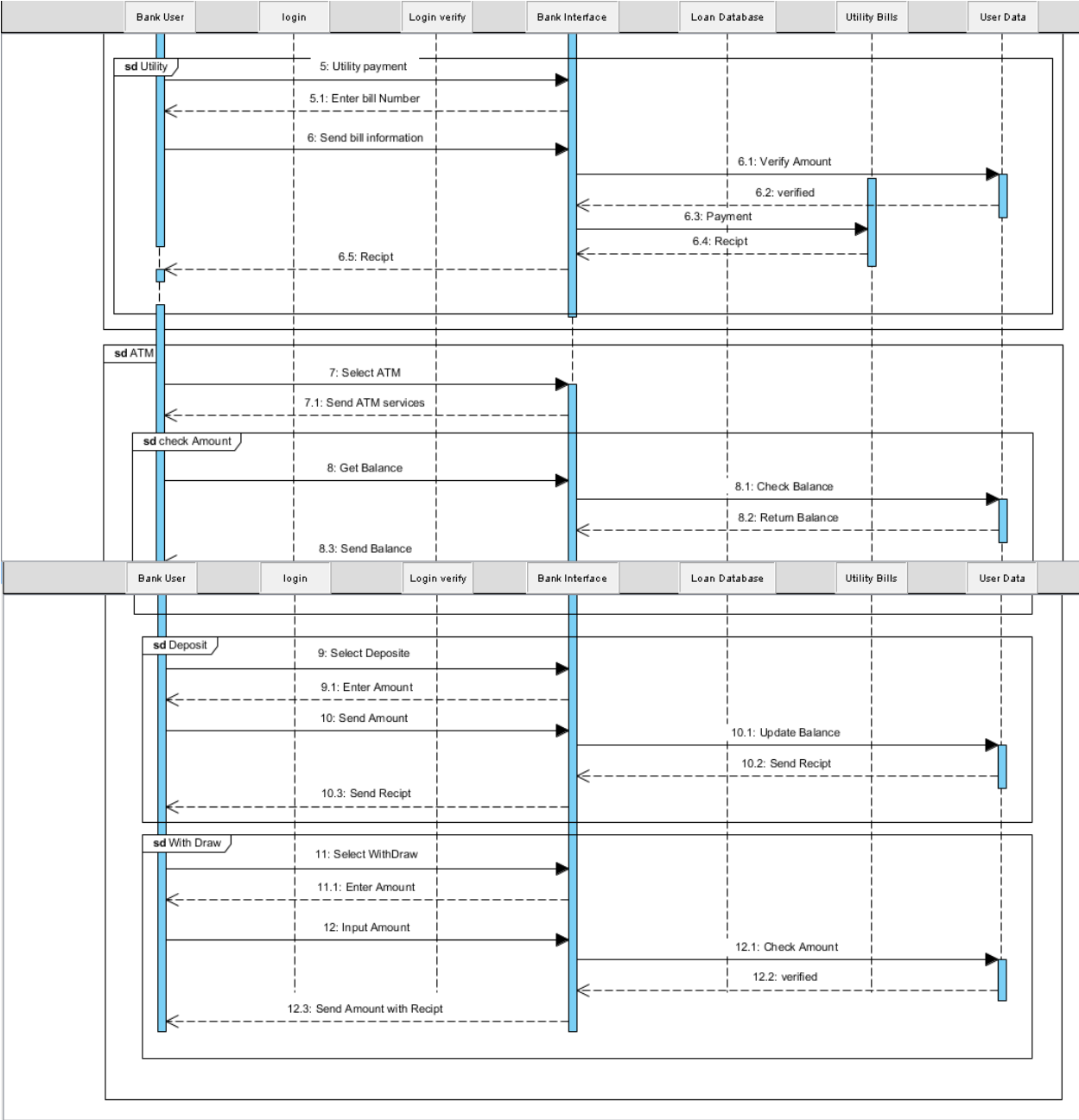


5. Class Diagram

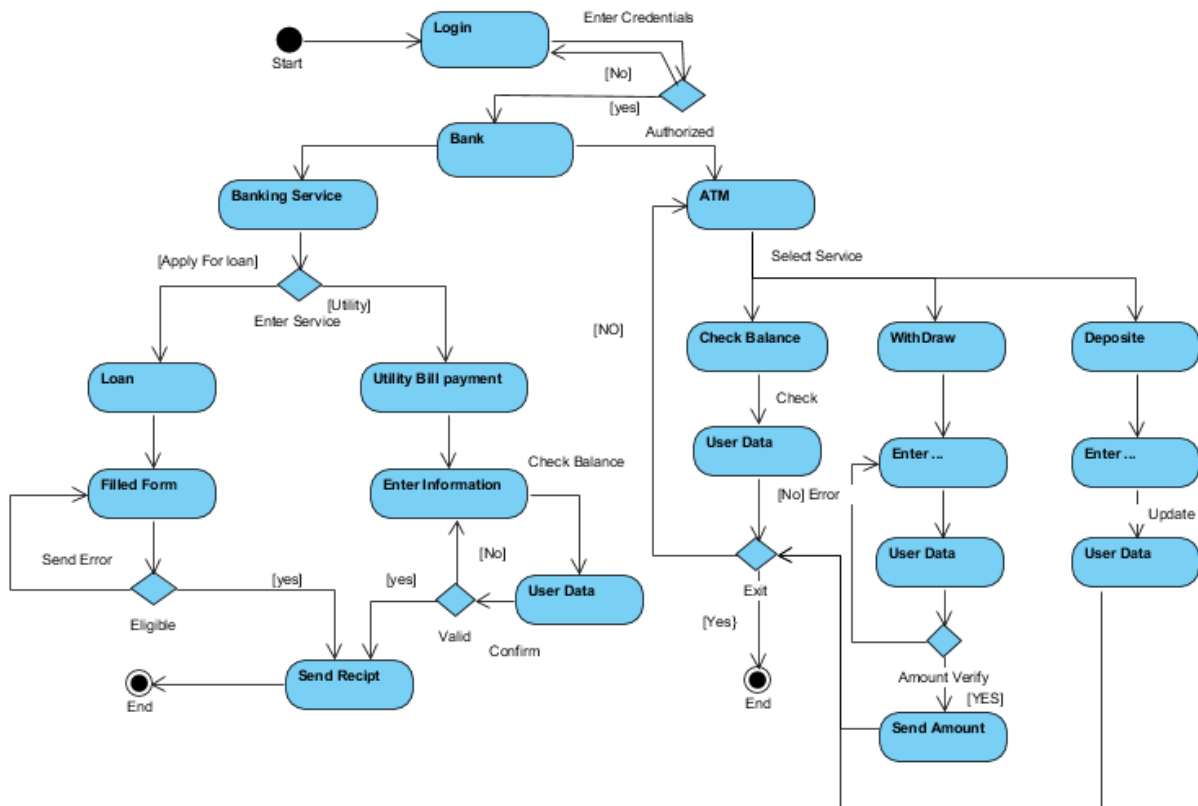


6. SequenceDiagram





7. Activity Diagram



8. Specific Requirements

3.1 Functional Requirements: • Creating Account: User can easily create their account and a unique account number provide to each user.

- Updating Account: User can easily update their account through their account number from anywhere using web sites.

- Deleting Account: User can Delete their account using their account number.

- Unique Account #: Each user must have unique account number.

- Depositing Cash: User can easily deposit their cash on providing specific pin.

- Withdraw Cash: User can Withdraw cash if they have balance on providing specific pin and they can also get slip as record.

- Bill Payments: Payments of bills can be done through this application.

- Loan Services: Loans can be given on interests to specific period of time.

- System Update: System should be updated after each transaction.

9. Non-Functional Requirements:

- System dependability: The system should be fault tolerant, if the system losses the connection to the internet the user should be informed.
- Privacy and Security: The system should be secure. No one can access to one's account except the banking management.
- Reliability: The system can be relied on performance. Minimal bugs and performance lags should be experienced by the user.
- Availability:

The system should be available more than 99% of the time.

- Maintainability: Application expandability, application should be design in such a way to add more features in as required.

10. Important Names in the Fields:

- Login
- Verify (check user credential)
- Update (update current bank balance)


11. Interface Requirements

11.1 Overview of Banking System Interaction

11.1.1 User Interface

11.1.1.1 Login:


Welcome To Login



Username

Password


[Forget Password??](#)



Bank AL Habib Ltd.

Login

11.1.1.2 Banking System



HABIB BANK
Multiple Vacant Position | Apply Now

WELCOME TO HABIB BANK LIMITED

Jahan Khwab, Wahan HBL

1


Create An Account


2


Update/Delete An Account

3

Deposit/With Draw Money

 Choose Facility



 Access



Data

Customer Name

Name

Account.No

Account.No

Phone.No

Phone.No

Balance

Balance

Address

Address

Date

Date

Customer Information

Account.No

Search Account

Check Balance

Check Dues

No.of.Accounts

Show Accounts

Bank Balance



Use An Atm

☐ Open Door



11.1.1.3 Atm Service:

Form1

Automated Teller Machine

500

1000

10000

Enter Amount

5000

15000

25000

1 QZ

2 ABC

3 DEF

CANCEL

4 GHI

5 JKL

6 MNO

CLEAR

7 PQRS


8 TUV

9 WXY

ENTER

0 @#?

GET SLIP



Get Slip


.....SLIP.....

Transaction Details

Account_No-- 1
Name-- sarfaraz
Account Type-- Current
Balance-- 7000
Date-- Wednesday,
Cash Deposit 5000

Go back

11.1.1.4 Create Account:



Creating An Account

Fill Form

Account# 1
Name
Address

Account Type ☐ Current Account
☐ Saving Account
Atm_Pin
Gender ☐ Male
☐ Female
Phone#
Cash Depositing

Customer Record							
	Account_No	Name	Gender	Phone_No	Address	Date	Ad
▶	1	sarfaraz	Male	34233434	rafibanglows,...	Wednesday, S...	Cu
*							

Name sarfaraz

Address rafibanglows,

Balance 2000

Phone.No 34233434

Account.No 1

Gender Male

Account Type Current

Date Thursday , September 20, 20: ▾

Show Data

Create

11.1.1.5 Bill Payment:


BillForm

←


Account.No 1

Atm_Pin 1

→

K-ELECTRIC
Energy That Moves Life

ELECTRICITY BILL



Name

safaraz

Address

rafibanglows,
malir

Bill Calculation

Units

216

Rates

8.11

Value

1751.76

Historical Information

MM/YY	Bill Amount	Pay-Date	Payment
MM/YY	Amount	Date	Rs
MM/YY	Amount	Date	Rs
MM/YY	2000	Date	Rs

Amount PayAble Within Due

1853.76

Due Date

Billing Month

Nov/2017

Amount PayAble After Due

2095.76

Account-Number	Net-Amount	Gross-Amount	Due Date
Account-Number	1853.76	2095.76	

Pay Bill

1853.76

Enter Cash

11.1.1.6 Loan Services:

LoanForm

←

AccountNo

1

Atm_Pin

1

→

HBL

HABIB BANK

Hbl Loan Services

Name

sarfaraz

Address

rafibanglows

Account Type

Current

Loan Calculation

Previous Loan

0

Current Loan

12200

Total Loan

12200

Loan Details

Enter Amount Of Loan

12000

Months...

2

Check

Loan==

12200

Get Loan

Loan PayAble

Amount

Account Balance

2000

loan taken for...

2

Intrest

Charges-RS

Account-Number

1

Loan Amount

12200

Intrests

Charges-RS

Date

Pay Loan

0

Current Loan

Charges-RS

12 Tools Used In Project

12.1.Introduction

This section will provide readers a brief overview of all the tools used in this project

Project: Banking System

The tools and software's used in the development of this project were

12.1.1 Visual Studio

The software was developed using C# (Programming Language) in the Visual Studio 2015 IDE.

12.1.2 Wamp Server (MySQL)

This project uses MySQL for storing the data (Customer record, Account information etc.). For creation of the MySQL database Wamp Server was used.

12.1.3 Visual Paradigm

The design phase included making use case and UML diagrams which were created using Visual Paradigm.

12.1.4 Microsoft Word

The Requirement document and all other documents were written in Microsoft Word.

12.2.Development Phase

12.2.1 Implementation/Development Tool

12.2.1.1 Visual Studio

C# was used as a programming language for the development of this software i.e. 'Banking System' for various reasons. The main reason was the Ease of Development and rich variety of libraries C# provides.

For coding in C#, Visual Studio IDE was used. Visual Studio and C#, both were developed by Microsoft. Visual Studio provides support for multiple languages as well as cross platform development. It also supports large collection of extensions which eases the development process.

12.2.1.2 Alternative

Developers around the globe code in variety of IDEs available in the market such as

- NetBeans

- IntelliJ Idea
- CodeBlocks
- Eclipse

12.2.1.2 Advantage of using Visual Studio over others

- There are numerous plugins available for Visual Studio - both produced by Microsoft and by third-parties. This allows for significant customization of the implementation to meet your specific needs and desires.
- Visual Studio simplifies managing builds and dependencies compared to other IDEs such as Eclipse.
- Visual Studio supports many advanced "design-time" features such as Intellisense, design-time error and warning highlighting for many errors, and color coding of source files.

12.3.2 Database Tool

12.3.2.1 Wamp Server

Wamp server is a web development software for windows operating system which supports multiple features such as Apache web server, OpenSSL for SSL support, PHP programming language but also MySQL database.

12.3.2.1 Alternative

For creating and managing MySQL database, some of the alternatives to Wamp server are

- MySQL Oracle
- MariaDB
- XtraDB
- Percona
- LAMP
- Navicat

12.3.2.2 Advantage of Wamp Server over others

- Wamp not only allow SQL database creation but also has other features such as PHP server, Apache etc.
- User Friendly
- Tons of features including an intelligent debugger

12.4 Design & Planning Phase

12.4.1 Analysis, Design

12.4.1.1 Visual Paradigm

Visual Paradigm is a UML design tool and UML CASE tool designed to aid software development. It supports software development teams in requirements capturing, software planning (use case analysis), code engineering, class modeling, data modeling, etc.

UML class diagram, Sequence Diagram, Use case diagram of this project was created using Visual Paradigm. It also allows us to create wide range of diagrams used in the development process such as Entity-Relationship diagram for relational database etc. in one single software.

12.4.1.2 Alternatives

Visual paradigm offers variety of features. But for a specific task or diagram such as use case or sequence diagram there are multiple online utilities as well as desktop software's available. Some of them are

- Lucid Chart
- Draw.io
- DÍA
- Edraw Max
- Plant UML

12.4.1.3 Advantage of using Visual Paradigm

- The biggest feature of Visual Paradigm is IDE integration.
Visual Paradigm is not only a standalone application, but also integrated to the major Integrated Development Environments (IDEs), including Eclipse, NetBeans, IntelliJ IDEA and Visual Studio.
- Its one of a kind utility. No other solution exist which provides this many features/diagrams support in a single package.
- Easy to use/User Friendly

12.5 Documentation Phase

12.5.1 Documentation Tool

12.5.1.1 Microsoft Word

Microsoft Word is a word processor developed by Microsoft. It is industry standard and provides tons and tons of features regarding document creation and text formatting.

12.5.1.2 Alternatives

- Google Docs
- Office online
- OpenOffice
- AbiWord
- Jarte

12.5.1.3 Advantages

- Familiar and Reliable
- Tons of Features (text formatting, themes, borders etc.)
- Supports almost all document extensions (doc, docx, pdf etc.)

13. Project Management Tool:

Methodology used: The software is complete under agile development(Iterative).and to manage tasks and time lines, MS Project is used. The tasks were divided as per the planned timelines shared at the start of the project.

13.1 Technique Used:

The technique used for this project development is Extreme Programming.

13.2 Repository Management

Code Management is done on github.

14 Evaluation & Results:


14.1 Evaluation technique:

Evaluation technique used is Tutorial-based Approach. (Running the code multiple times and validating result manually.

14.2 Evaluation Scope:

This product is tested as an end user.

14.3 Test of creating account Feature



Creating An Account

Fill Form

Account#

Name

Address

Account Type

☐ Current Account

☐ Saving Account

Atm_Pin

Gender

☒ Male

☐ Female

Phone#

Cash Depositing

Customer Record


Name	Address	Balance	Phone.No
Name	Address	Balance	Phone.No
Account.No	Gender	Account Type	
Account.No	Gender	Account Type	

Date

Show Data

Create

14.4 Results:



Creating An Account

Fill Form

Account#

Name

Address

Account Type

☐ Current Account

☐ Saving Account

Atm_Pin

Gender

☒ Male

☐ Female

Phone#

Cash Depositing

Customer Record

ACCOUNT_No	NAME	GENDER	PHONE_No	ADDRESS	DATE
123	asd	Male	12323	afasdsd	Wednesday, ...
123221	sadasdas	Male	21231232	asdsad	2-09-2008
1232	Sarfaraz	Male	123123	ASauisdhaujd	Wednesday, ...
123	Ali	Male	123213	Ubit	Wednesday, ...
1232	rafaqat	Male	123132	sadsda	Wednesday, ...

Name

Address

Balance

Phone.No

Account.No

Gender

Account Type

Date

Show Data

Create

15. Research Teams:

<https://www.researchoptimus.com/banking/>

16. Books:

- The Us Banking System (<https://books.google.com.pk/books?isbn=1285090896>)
- The Italian Banking System: Impact of the Crisis and Future Perspectives(<https://books.google.com.pk/books?isbn=0230343147>)

17. Relevant Links:

- <https://www.investopedia.com/university/banking-system/>
- https://en.wikipedia.org/wiki/Bank#Business_models
- http://www.academia.edu/3841171/ICICI_BANK_PROJECT_REPORT

18. Conclusion

Documentations contain all the necessary information , which are needed to build a project

- (a) Architecture
 - (b) Design Details
 - (c) Data flow Diagrams
 - (d) Database Design
-
- Documents work as repository for developers.
 - Documentations are such useful perspective to merge a whole scenario.
 - Documentations always proved fruitful for programmers to implement code or any things.
 - Documentations creates mutual understanding between the working individuals.

19. Future Work

- If in future we are needed to present our project to any vendor then these doucumentations will definitely be helpful.
- These documentations will surely provide helpful ideas for us if we need to work on further projects.
- These documentations could also work as solution for problems.
- We will implement our work to facilitate people globally through internet. We will explore our work for useful perspectives online through sites and develop applications and work upon further projects.

20 References

[1] https://web.cs.dal.ca/~hawkey/3130/srs_template-ieee.doc.

[2] IEE STD 830-1998 Standard Recommended Practice for Software Requirement Specification.

[3] https://www.cse.chalmers.se/~feld/courses/requeng/examples/srs_example_2010_group2.pdf.