VISVESVARAYA TECHNOLOGICAL UNIVERSITY BELAGAVI – 590018

A Mini Project Report on

" Bank Management System "

A report submitted in partial fulfilment of the requirements for the award of degree of

BACHELOR OF ENGINEERING

In

COMPUTER SCIENCE & ENGINEERING

By

Mr. Vishal Patil **USN: 2HN20CS022**

Mr.Ritesh Deshapande **USN: 2HN20CS029**

Mr.Sangamesh Bagewadi **USN: 2HN20CS034**

Under the Guidance of

Dr. K. B. Manwade

Department of Computer Science and Engineering

S.J.P.N Trust's

HIRASUGAR INSTITUTE OF TECHNOLOGY, NIDASOSHI-591236

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VISVESVARAYA TECHNOLOGICAL UNIVERSITY

BELAGAVI – 590018
Department of Computer Science and Engineering

CERTIFICATE

Certified that the mini-project titled **"BANK MANAGEMENT SYSTEM"** is a bonafide work carried out by **Mr. Vishal Patil (2HN20CS022) , Mr. Ritesh Deshpande (2HN20CS029)** and **Mr.Sangmesh Bagewadi (2HN20CS034)** in partial fulfilment for the award of degree of **Bachelor of Engineering in Computer Science and Engineering** prescribed by **Visvesvaraya Technology University,** Belagavi during the academic year 2022 – 2023. It is certified that all the corrections /suggestions indicated have been incorporated in the report. The project has been approved as it satisfies the academic requirements in respect of project work prescribed by the Bachelor of Engineering course.

Guide	H.O.D	Principal
Dr. K. B. Manwade	**Prof. S. V. Manjaragi**	**Dr. S. C. Kamate**

Name of the Examiners	Signature
1._____	_____
2._____	_____

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Mr. Vishal Patil

Mr. Ritesh Deshapande

Mr. Sangamesh Bagewadi

Abstract

The Bank Account Management System is an application for maintaining a person's account in a bank. In this project I tried to show the working of a banking account system and cover the basic functionality of a Bank Account Management System. To develop a project for solving financial applications of a customer in banking environment in order to nurture the needs of an end banking user by providing various ways to perform banking tasks. Also to enable the user's workspace to have additional functionalities which are not provided under a conventional banking project.

The Bank Account Management System undertaken as a project is based on relevant technologies. The main aim of this project is to develop software for Bank Account Management System. This project has been developed to carry out the processes easily and quickly, which is not possible with the manuals systems, which are overcome by this software. This project is developed using PHP, HTML language and MYSQL use for database connection. Creating and managing requirements is a challenge of IT, systems and product development projects or indeed for any activity where you have to manage a contractual relationship. Organization needs to effectively define and manage requirements to ensure they are meeting needs of the customer, while proving compliance and staying on the schedule and within budget.

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Chapter-1

Introduction

This chapter gives a brief theoretical preview upon the database information systems and goes through the essence of the problem that should be resolved.

1.1 Background :

Most of the contemporary Information systems are based on the Database technology as a collection of logically related data, and DBMS as a software system allowing the users to define, create, maintain and control access to the database.

The process of constructing such kind of systems is not so simple. It involves a mutual development of application program and database. The application program is actually the bridge between the users and the database, where the data is stored. Thus, the well-developed application program and database are very important for the reliability, flexibility and functionality of the system. The so defined systems differentiate to each other and their development comprises a great variety of tasks to be resolved and implemented.

Information to users in an organization (for instance), as for the purposes of Data Information system suggests a computer technology to be used in order to provide transformation into useful information; computer hardware and software are designed and used.

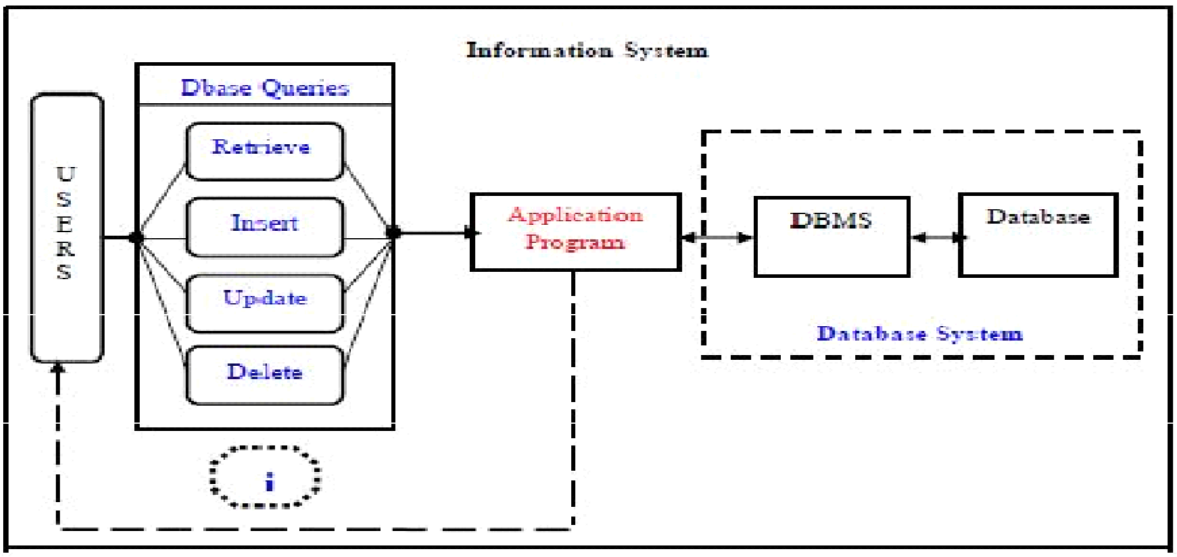

Fig 01. Database Information Systems

A particular case is the Human Resources Information System development. This kind of systems are responsible for storing data of the staff within an organization and generating reports upon request Such kind of system could be integrated with other Information systems or modules: Accounting Information System (AIS) – designed to transform financial data into information, or Management Information System (MIS) that provides decision oriented information to managers, and so on. Organizations depend on Information Systems in order to stay competitive. Productivity, which is crucial to staying competitive, can be increased through better Information Systems."

1.2 Problem Statement :

This report's documentation goes through the whole process of both application program and database development. It also comprises the development tools have been utilized for these purposes.

1.3 Problem Discussion :

This system should consist of an application program, on one hand, and a database (repository of data) on the other. The program should perform the basic operations upon the database as retrieving, inserting, updating and deleting data. Any additional functionality is a goal of a further module development.

It is a kind of strategy to start the development from designing and constructing the database, as this structure will determine the further structure of the application program. The logical database model (tables, their content and the relationships between them) should respond to the given task and cover the basic requirements. The Interface of the program should be user-friendly, and the program should be as easy for use as it is possible.

Both controls and forms should logically and functionally be related within the program and fully respond to the structure of the database. Another problem is establishing the connections with the database, every time, when a query is needed to be performed upon it. Exception handling should also be taken into an account during the system's development due to eventual exceptions that may occur.

1.4 Programming Environments:

Database Environment:

Access is a typical environment for constructing relational databases. The database is the skeleton and the underlying framework of most of the contemporary Information Systems. The evolution of the Database systems could be divided into three phases: the Manual-filing System, the File-based systems, and the Database and the Database Management systems (DBMS). The manual-filing system contains files of information, related to a project, product, task, client, or employee and they are usually labelled and stored in one or more cabinets. The cabinets may be located in the secure area of the building, for safety. To facilitate the process of searching and to find out what we want, more quickly, the different types of item can be put in separate folders and they remain logically related. Actually, the needs of the contemporary industrial world could not be covered or satisfied by using such kind of systems, and especially what concerns their reliability and efficiency. Thus, we historically reach to the second phase of the Database systems evolution – the File-based systems. This kind of systems had been developed in response to the needs and demands of industry for a more efficient data access. The basic idea into the development of this type of systems, is that each Department in an organization (for instance) has an access to its own data (files) through application programs.

Chapter-02

Problem Definition

2.1 Existing System

- Cannot Upload and Download the latest updates.
- No use of Web Services and Remoting.
- Risk of mismanagement and of data when the project is under development.
- Less Security.
- No proper coordination between different Applications and Users.

Advantages :

1. User friendliness is provided in the application with various controls.
2. The system makes the overall project management much easier and flexible.
3. Readily upload the latest updates, allows user to download the alerts by clicking the URL.
4. It provides high level of security with different level of authentication.
5. Transferring Funds
6. Tracking Account and Checking balances

2.2 Proposed System

To debug the existing system, remove procedures those cause data redundancy, make navigational sequence proper. To provide information about audits on different level and also to reflect the current work status depending on organization/auditor or date. To build strong password mechanism.

Disadvantages :

1. User friendliness is provided in the application with various controls.
2. The system makes the overall project management much easier and flexible.
3. Readily upload the latest updates, allows user to download the alerts by clicking the URL.
4. There is no risk of data mismanagement at any level while the project development is under process

Chapter-03

SYSTEM REQUIREMENTS

A data flow diagram is graphical tool used to describe and analyse movement of data through a system. These are the central tool and the basis from which the other components are developed. The transformation of data from input to output, through processed, may be described logically and independently of physical components associated with the system. These are known as the logical data flow diagrams.

3 .1 HARDWARE REQUIREMENTS:	**3.2 SOFTWARE REQUIREMENT**
PROCESSOR : Intel i5 or above RAM : 4 GB Min HARD DISK : 1 TB min	OPERATING SYSTEM : Windows 10 or higher LANGUAGE(Server Side) : PHP WEB TECHNOLOGY : HTML, CSS, JAVA SCRIPT

Chapter-04

SYSTEM DESIGN

4.1 Data Flow Diagram :

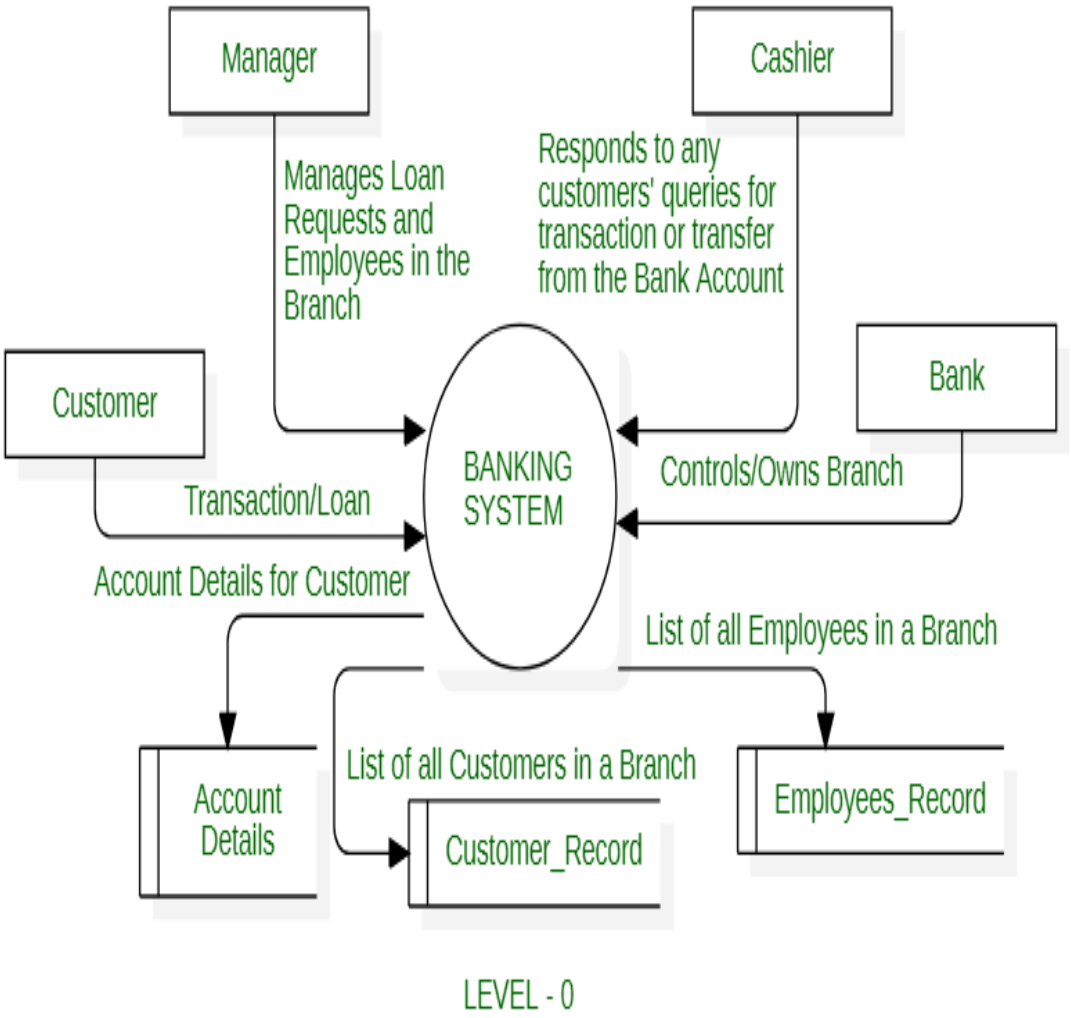

Fig 02. Data flow diagram

4.2 TABLE DESCREPTION

Table No.01 Branch Details :

Name	Type	Size	Constraint	Description
B_Name	Varchar	20	Primary Key	Bank Name
Address	Varchar	40	Null	Address

Table No.02 Customer Details :

Name	Type	Size	Constraint	Description
C_Name	Varchar	20	Primary Key	Customer name
C_id	Int	10	Primary Key	Customer ID
Address	Varchar	40	Null	Address
Phone	Int	10	Null	Number

Table No.03 Account Details :

Name	Type	Size	Constraint	Description
Acc_No	Int	15	Primary Key	Account No
Balance	Int	100	Null	Balance
Type	Varchar	10	Null	Type

Table No.04 Staff Details :

Name	Type	Size	Constraint	Description
S_Name	Varchar	10	Primary Key	Staff Name
S_Id	Int	10	Primary Key	Staff ID
Phone	Int	10	Null	Number
Department	Varchar	10	Null	Department
DOB	Varchar	10	Null	Date of Birth

Table No.05 Loan Details :

Name	Type	Size	Constraint	Description
Loan_id	Varchar	20	Primary Key	Loan ID
Rate	Int	3	Null	Rate
Amount	Int	100	Null	amount

4.3 Schema Diagram:

Branch :

B_name	Address	Department	Assets

Account :

Acc_no	Balance	Type	C_id

Staff :

S_name	C_name	S_id	Phone	DOB	Department

Customer :

C_name	Address	C_id	Phone

Loan :

Loan_id	Rate	Acc_no	Amount

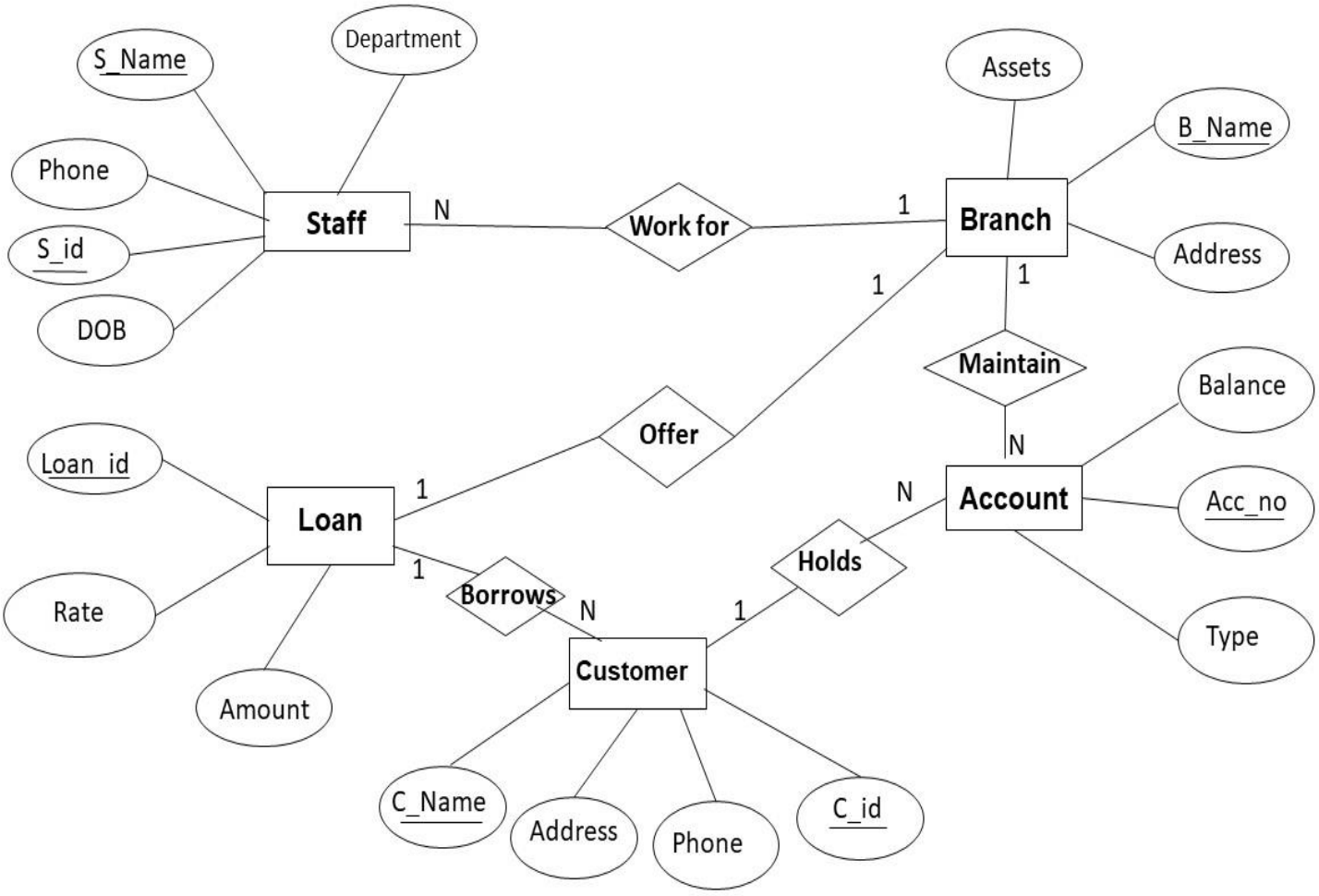

Fig 03. ER Diagram of Bank Management System

ER Diagram is known as Entity - Relationship diagram. It is used to analyse to structure of the Database. It shows relationships between entities and their attributes. An ER model provides a means of communication.

Chapter-05.

DETAILS OF TECHNOLOGIES USED

5.1 APACHE WEB SERVER:

Based on the NCSA HTTP server, development of Apache began in early 1995 after work on the NCSA code stalled. Apache played a key role in the initial growth of the World Wide Web, quickly overtaking NCSA HTTP as the dominant HTTP server, and has remained most popular since April 1996. In 2009, it Apache HTTP Server, colloquially called Apache, is free and open-source cross-platform web server software, released under the terms of Apache License 2.0. Originally based on the NCSA HTTP server development of Apache began in early 1995 after work on the NCSA code stalled. Apache is developed and maintained by an open community of developers under the auspices of the Apache Software Foundation. The Apache HTTP Server is cross-platform; as of 1 June 2017 92% of Apache HTTPS Server copies run on Linux distributions. Version 2.0 improved support for non-Unix operating systems such as Windows and OS Old versions of Apache were ported to run on OpenVMS and NetWare. Originally became the first web server software to serve more than 100 million websites. As of July 2016 was estimated to serve 46% of all active websites and 43% of the top million websites. Instead of implementing a single architecture, Apache provides a variety of Multi Processing Modules (MPMs), which allow Apache to run in a process-based, hybrid (process and thread) or event-hybrid mode, to better match the demands of each particular infrastructure. This implies that the choice of correct MPM and the correct configuration is important. Where compromises in performance need to be made, the design of Apache is to reduce latency and increase throughput, relative to simply handling more requests, thus ensuring consistent and reliable processing of requests within reasonable time-frames. For delivery of static pages, Apache 2.2 series was considered significantly slower than gin and varnish.

5.2 PHP :

Generally runs on a web server. Any PHP code in a requested file is executed by the PHP runtime, usually to create PHP is a general-purpose scripting language that is especially suited to server-side web development, in which case PHP dynamic web page content or dynamic images used on websites or elsewhere. PHP originally stood for Personal Home Page, but it now stands for the recursive acronym PHP: Hypertext Preprocessor. PHP code may be embedded into HTML or HTML5 markup, or it can be used in combination with various web template systems, web content management systems and web frameworks. PHP code is usually processed by a PHP interpreter implemented as a module in the web server or as a Common Gateway Interface (CGI) executable. The web server software combines the results of the interpreted and executed PHP code, which may be any type of data, including images, with the generated web page. PHP code may also be executed with a command-line interface (CLI) and can be used to implement standalone graphical applications. The standard PHP interpreter, powered by the Zend Engine, is free software released under the PHP License. PHP has been widely ported and can be deployed on most web servers on almost every operating system and platform, free of charge The PHP interpreter only executes PHP code within its delimiters.

Anything outside its delimiters is not processed by PHP, although non-PHP text is still subject to control structures described in PHP code. The most common delimiters are to close PHP sections. This short delimiter makes script files less portable, since support for them can be disabled in the local PHP configuration and it is therefore discouraged. The first form of delimiters, in XHTML and other XML documents, creates correctly formed XML processing instructions.

The shortened form, in XHTML and other XML documents, creates correctly formed XML processing instructions. This means that the resulting mixture of PHP code and other markup in the server-side file is itself well formed XML. Variables are prefixed with a dollar symbol, and a type does not need to be specified in advance. PHP 5 introduced type hinting that allows functions to force their parameters to be objects of a specific class, arrays, interfaces or call back functions. However, before PHP 7.0, type hints could not be used with scalar types such as integer or string.[53] Unlike function and class names, variable names are case sensitive. Both double-quoted ("") and heredoc strings provide the ability to interpolate a variable's value into the string.[96]PHP treats newlines as whitespace in the manner of a free-form language, and statements are terminated by a semicolon. PHP has three types of comment syntax: marks block and inline comments; // as well as # are used for one-line comments. The echo statement is one of several facilities PHP provides to output text, e.g., to a web browser. In terms of keywords and language syntax, PHP is similar to the C style syntax. if conditions, for and while loops, and function returns are similar in syntax to languages such as C, C++, C#, Java and Perl.

The following is an example of PHP for loop:

5.4 HTML:

Hypertext Markup Language (HTML) is the standard markup language for creating web pages and web applications. With Cascading Style Sheets (CSS) and JavaScript it forms a triad of cornerstone technologies for the World Wide Web. Web browsers receive HTML documents from a web server or from local storage and render them into multimedia web pages. HTML describes the structure of a web page semantically and originally included cues for the appearance of the document. HTML elements are the building blocks of HTML pages. With HTML constructs, images and other objects, such as forms, may be embedded into the rendered page. It provides a means to create structured documents by denoting structural semantics for text such as headings, paragraphs, lists, links, quotes and other items. HTML elements are delineated by tags, written using angle brackets. Tags such as <img> and <input> introduce content into the page directly. Others such as surround and provide information about document text and may include other tags as sub-elements. Browsers do not display the HTML tags, but use them to

interpret the content of the page. HTML can embed programs written in a scripting language such as JavaScript which affect the behaviour and content of web pages. Inclusion of CSS defines the look and layout of content.

The World Wide Web Consortium (W3C), maintainer of both the HTML and the CSS standards, has encouraged the use of CSS over explicit presentational HTML. The following is an example of the classic "Hello, World!" program, a common test employed for comparing programming languages, scripting languages and markup languages.

5.5 CASCADING STYLE SHEET:

Cascading Style Sheets (CSS) is a style sheet language used for describing the presentation of a document written in a markup language. Although most often used to set the visual style of web pages and user interfaces written in HTML and XHTML, the language can be applied to any XML document, including plain XML, SVG and XUL, and is applicable to rendering in speech, or on other media. Along with HTML and JavaScript, CSS is a cornerstone technology used by most websites to create visually engaging webpages, user interfaces for web applications, and user interfaces for many mobile applications. CSS is designed primarily to enable the separation of presentation and content, including aspects such as the layout, colours, and fonts. This separation can improve content accessibility, provide more flexibility and control in the specification of presentation characteristics, enable multiple HTML pages to share formatting by specifying the relevant CSS in a separate .css file, and reduce complexity and repetition in the structural content. Separation of formatting and content makes it possible to present the same markup page in different styles for different rendering methods, such as onscreen, in print, by voice, and on Braille-based tactile devices. It can also display the web page differently depending on the screen size or viewing device. Readers can also specify a different style sheet, such as a CSS file stored on their own computer, to override the one the author specified. Changes to the graphic design of a document (or hundreds of documents) can be applied quickly and easily, by editing a few lines in the CSS file they use, rather than by changing markup in the documents. The CSS specification describes a priority scheme to determine which style rules apply if more than one rule matches against a particular element. In this so-called cascade, priorities are calculated and assigned to rules, so that the results are predictable

The following example shows the style element that gives red colour to fonts

5.6 JAVASCRIPT :

JavaScript often abbreviated as JS, is a high-level, dynamic, weakly typed, prototype based, multi-paradigm, and interpreted programming language. Alongside HTML and CSS, JavaScript is one of the three core technologies of World Wide Web content production. It is used to make webpages interactive and provide online programs, including video games. The majority of websites employ it, and all modern web browsers support it without the need for plug-ins by means of a built-in JavaScript engine. Each of the many JavaScript engines represent a different implementation of JavaScript, all based on the ECMAScript specification, with some engines not supporting the spec fully, and with many engines supporting additional features beyond ECMA. As a multi-paradigm language, JavaScript supports event-driven, functional, and imperative programming styles. It has an API for working with text, arrays, dates, regular expressions, and basic manipulation of the DOM, but the language itself does not include any I/O, such as networking, storage, or graphics facilities, relying for these upon the host environment in which it is embedded. Initially only implemented client side in web browsers, JavaScript engines are now embedded in many other types of host software, including server-side in web servers and databases, and in non-web programs such as word processors and PDF software, and in runtime environments that make JavaScript available for writing mobile and desktop applications, including desktop widgets. Although there are strong outward similarities between JavaScript and Java, including language name, syntax, and respective standard libraries, the two languages are distinct and differ greatly in design; JavaScript was influenced by programming languages such as Self and Scheme

Chapter-06

SNAPSHOTS

Shown below are the screenshots of the various activities from Web Application

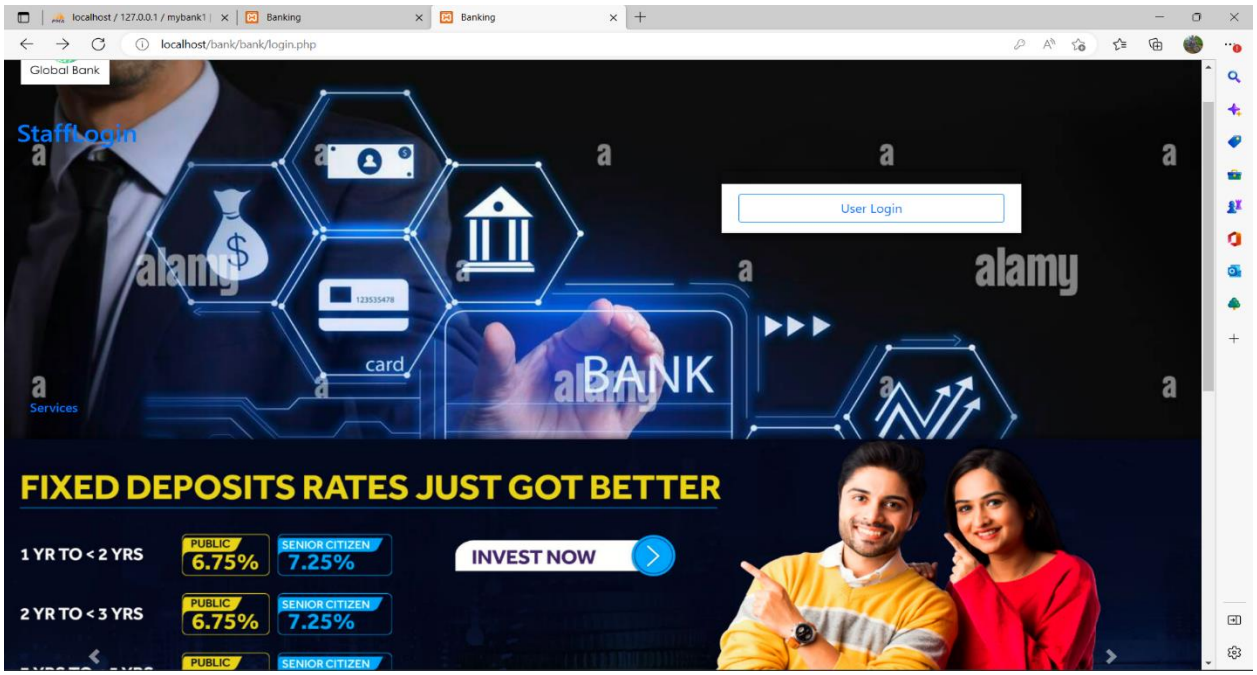

Fig 04. Home page on Web Application

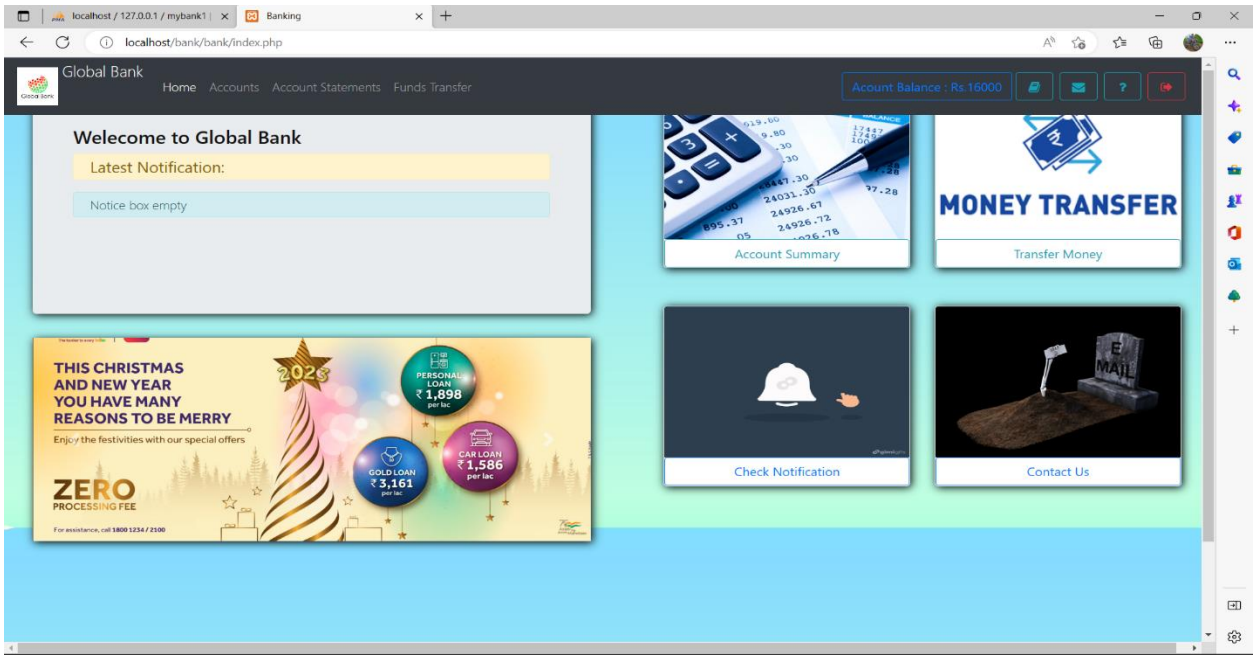

Fig 05. Customer page

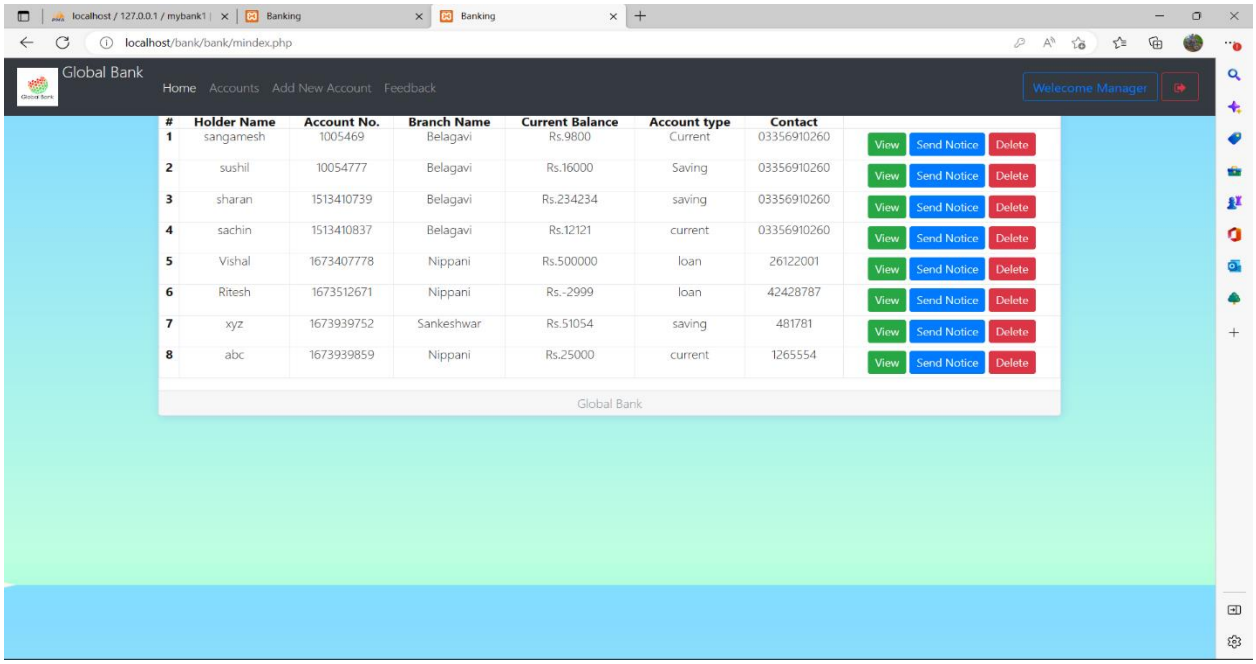

Fig 06. Manager page

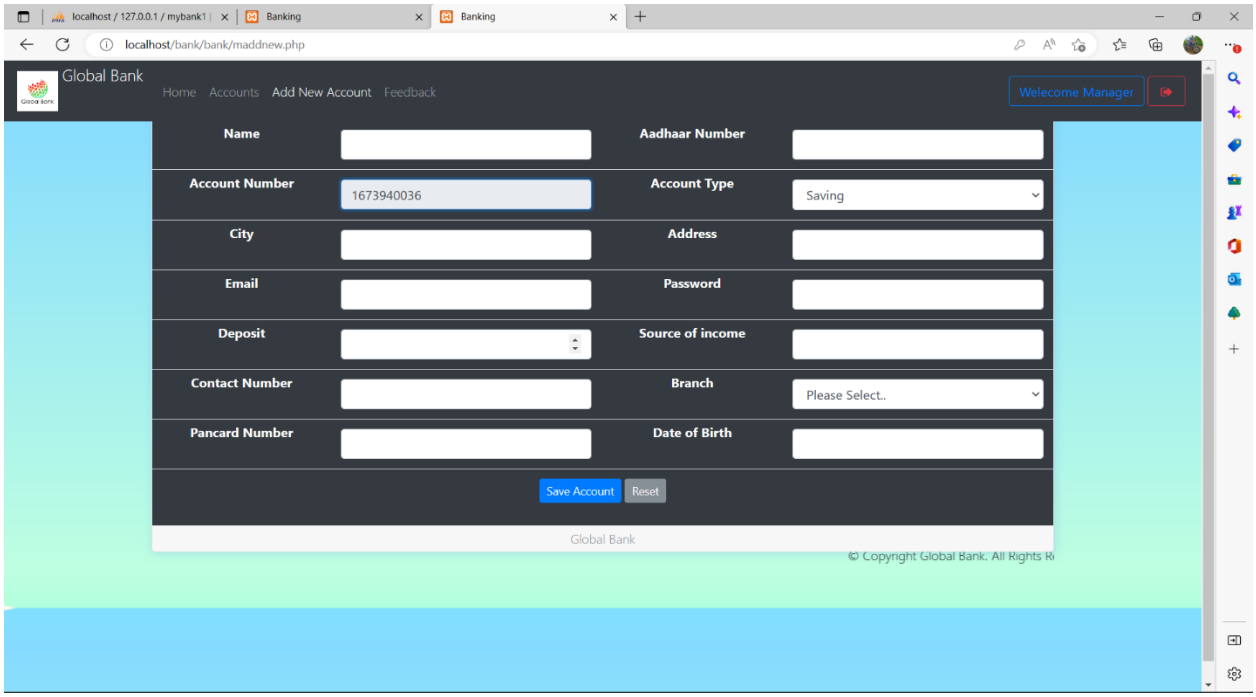

Fig 07. Creating new Account

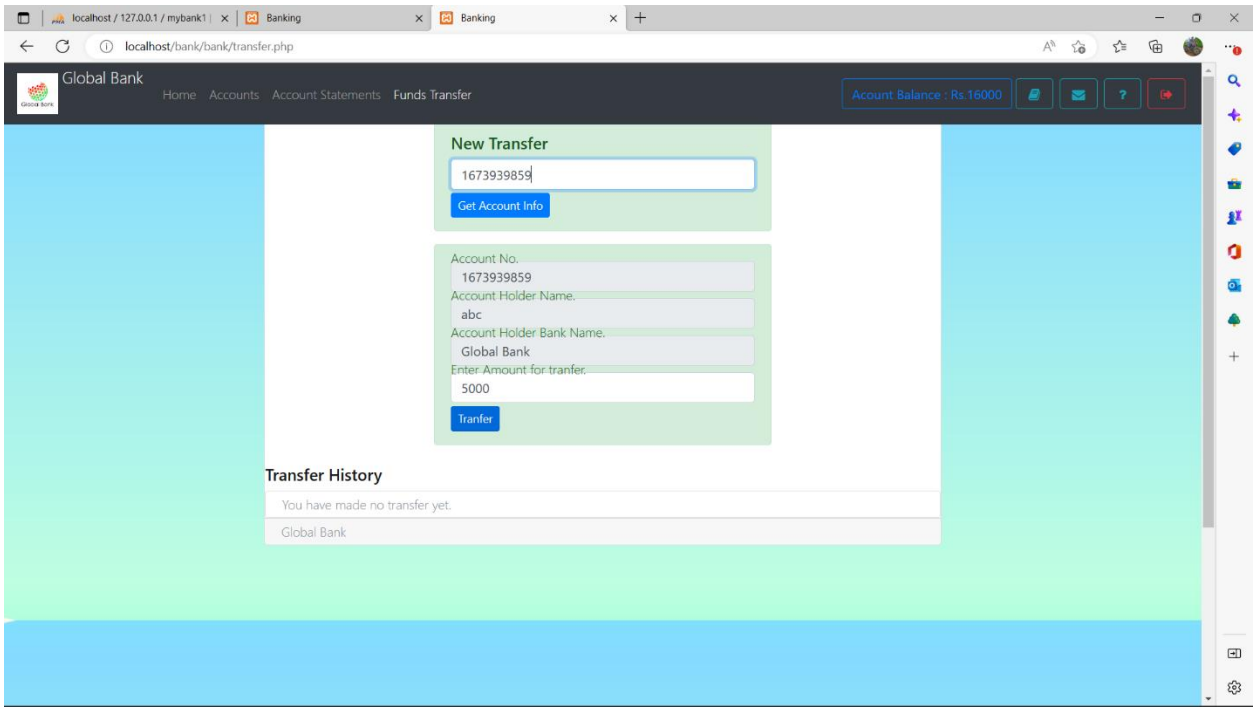

Fig 08. Money Transfer

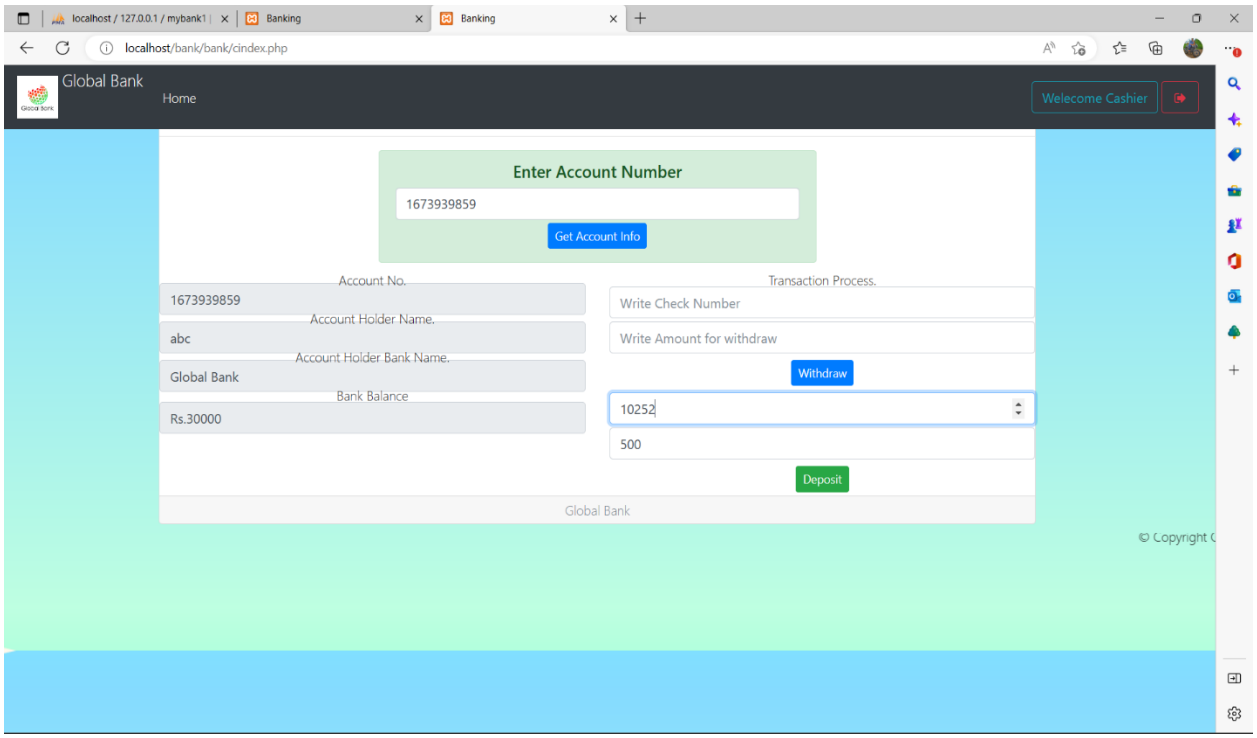

Fig 09. Cashier working page

6.3. Conclusion

This project is developed to nurture the needs of a user in a banking sector by embedding all the tasks of transactions taking place in a bank. Future version of this project will still be much enhanced than the current version. Writing and depositing checks are perhaps the most fundamental ways to move money in and out of a checking account, but advancements in technology have added ATM and debit card transactions. All banks have rules about how long it takes to access your deposits, how many debit card transactions you're allowed in a day, and how much cash you can withdraw from an ATM. Access to the balance in your checking account can also be limited by businesses that place holds on your funds.

Reference

1. Fundamentals of database systems by (Elmasri Navathe, 2000), Website: https://archive.org/stream/FundamentalsOfDatabaseSystemselmasrinavathe#page/n51/mode/2upPage: From 52 to more

2. Article: Online banking, Website : https://en.wikipedia.org/wiki/Online_banking June 29, 2015, 12.30 am

3. Online Bank Account Management System Website: http://www.slideshare.net

4. Learning MYSQL, JavaScript, jQuery, PHP, HTML, CSS3, Website: http://www.w3schools.comm

5. PHP and MySQL video tutorials, Oct 2014-2015 Website: http://www.freebanglatutorial.com, http://www.youtube.com

6. JavaScript form validation: Validate Password, Validate Email, Validate Phone Number, http://webcheatsheet.com/javascript/form_validation.php