A PROJECT REPORT ON

VISHNU LEGACY BANK

Summer Training Project Project

Of

BACHELOR OF COMPUTER APPLICATIONS (BCA)

To

GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, DELHI

Submitted By
Kirti Shukla(50191102021)

UNDER THE SUPERVISION OF

Mr. Sanjay Upadhyay

(Trainer)

SESSION: 2021-2024

SRI GURU TEGH BAHADUR INSTITUTE OF MANAGEMENT AND INFORMATION TECHNOLOGY

ADJ. GURUDWARA NANAK PIAO, G.T. KARNAL ROAD, DELHI-110033
(AFFILIATED TO GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, DWARKA, DELHI)

DECLARATION

I, Kirti Shukla , Enrolled As A Trainee, Hereby Declare That The Summer Training Project Titled "Vishnu Legacy Bank" Is The Outcome Of My Efforts And Is A Genuine Representation Of My Work During This Training Period. I Have Been Under The Guidance And Mentorship Of Mr. Sanjay Upadhya.

All External Sources And References Utilized In This Project Have Been Appropriately Acknowledged And Cited. I Take Full Responsibility For The Content And Originality Of This Project, Confirming That It Is My Independent Work And Does Not Infringe Upon Any Copyrights Or Proprietary Information Of Any Organization.

I Also Affirm That This Project, In Its Entirety, Has Not Been Previously Submitted For Any Degree Or Diploma At This Institute, Or At Any Other Institution Or University.

Kirti Shukla(50191102021)

ACKNOWLEDGEMENT

First and foremost, we would like to express our heartfelt appreciation to our mentor, Mr. Sanjay Upadhya, who served as a constant source of inspiration throughout this training project. His unwavering encouragement, innovative thinking, and unhesitating support have been instrumental in our journey. Mr. Upadhya's extensive knowledge, vast experience, and professional expertise have paved the way for the successful execution of this project. We are truly grateful for his exceptional guidance and supervision, and we consider ourselves fortunate to have had such an outstanding mentor in our training.

This endeavor would not have been possible without the collective contributions of our colleagues and fellow trainees. We all stood by each other, providing motivation and support that proved essential for our collective success.

We would like to extend our thanks to Tech Access for granting us the opportunity to work on this project and gain valuable experience. Without their support, this project would not have been possible.

Kirti Shukla(50191102021)

ABSTRACT

The "Vishnu Legacy Bank" project is a comprehensive endeavor designed to enhance and modernize the banking experience by introducing a range of innovative features and an advanced expense predictor. This project aims to revolutionize traditional banking practices and provide customers with more efficient, user-friendly, and intelligent banking solutions.

The key objective of this project is to bring together various banking operations and services, encompassing traditional banking, digital transactions, and financial planning tools, into a unified platform. By doing so, it aims to simplify and enhance the banking experience for customers.

The introduction of these new features, including the expense predictor, will significantly improve financial planning and management for customers. The expense predictor will utilize data analytics to provide accurate and real-time insights into spending patterns, helping customers make informed decisions and achieve their financial goals.

The "Vishnu Legacy Bank" project offers numerous advantages. It will increase operational efficiency by automating routine banking tasks, reducing processing times, and enhancing customer satisfaction. Real-time access to financial data and predictive tools will empower customers to make better financial decisions, ultimately improving their financial well-being. Additionally, it will foster stronger customer engagement, enabling seamless communication and improved banking services.

The successful implementation of the "Vishnu Legacy Bank" project will not only transform the banking experience but also contribute to the growth and success of the bank. It equips both customers and bank employees with valuable tools and resources, allowing them to focus on more strategic financial planning and wealth management. Customers will enjoy a more convenient and secure banking experience, resulting in improved financial outcomes and increased satisfaction.

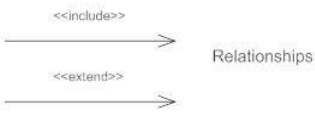
In summary, the "Vishnu Legacy Bank" project represents a groundbreaking step in the evolution of banking services, providing customers with an intelligent and user-centric approach to banking while delivering enhanced financial planning tools for a more prosperous future.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF SYMBOLS

SYMBOL	NAME	FUNCTION
	System	Draw your system's boundaries using a rectangle that contains use cases. Place actors outside the system's boundaries.
	Use Case	Draw use cases using ovals. Label the ovals with verbs that represent the system's functions.
	Actors	Actors are the users of a system. When one system is the actor of another system, label the actor system with the actor stereotype.
	Relationships	Illustrate relationships between an actor and a use case with a simple line. A "uses" relationship indicates that one use case is needed by another to perform a task. An "extends" relationship indicates alternative options under a certain use case.

Chapter 1: INTRODUCTION

1.1 INTRODUCTION

The Vishnu Legacy Bank redefines the modern banking experience by offering a wide array of innovative features, with a strong focus on security and user-centricity. This project encompasses features such as multi-level user authentication, account registration, deletion, deposits, withdrawals, fund transfers, expense prediction, account modification, and the addition of card types. Every step of this banking journey is fortified by stringent security measures, requiring both a unique User_Name and Password at each point.

1.2 FEATURES OF THE PROJECT

Key features of the project include:

• Multi-level User Authentication: At each step of a banking operation, the project demands a unique User_Name and Password combination for enhanced security.
• Registration: New customers can create accounts with the bank, providing them with a unique account ID and access to various banking services, with secure authentication at every point.
• Account Deletion: Customers have the ability to delete their accounts when needed, reinforced by rigorous authentication measures.
• Deposits: Customers can make deposits into their accounts, with multi-level security to safeguard their transactions.
• Withdrawals: The project ensures secure withdrawals, requiring user authentication for each transaction.
• Fund Transfers: Customers can transfer funds between accounts with robust authentication protocols.
• Expense Prediction: An advanced expense predictor employs data analytics to offer real-time insights into spending patterns, facilitating informed financial decisions for customers.
• Account Modification: Customers can make secure modifications to their accounts, ensuring flexibility and user control.
• Card Type Addition: The project allows customers to add different card types to their accounts, expanding their banking options.
• Advanced Error Handling: The system is equipped with advanced error-handling features to provide a secure and seamless banking experience.

1.3 OBJECTIVE AND SCOPE

The primary objectives and scope of the Vishnu Legacy Bank project encompass:

1. Security-First Banking: The project prioritizes the security of banking operations by implementing multi-level user authentication at every step.
2. User Empowerment: The project empowers customers with control over their finances, ensuring their transactions are secure and trustworthy.
3. Financial Planning: The advanced expense predictor assists customers in making informed financial decisions, improving their financial well-being.

1.4 NEED OF THE PROJECT

The need for the Vishnu Legacy Bank project arises from:

• Security Assurance: Customers demand secure and trustworthy banking services, and this project caters to that need by implementing stringent security measures at each step.

• User-Centric Banking: Modern banking requires customer control and convenience, which this project offers.

• Data-Driven Financial Management: Customers need data-driven tools to make informed financial decisions, and the expense predictor meets this demand.

1.5 LIMITATIONS OF THE PROJECT

Despite its advanced features, the project has certain limitations, including:

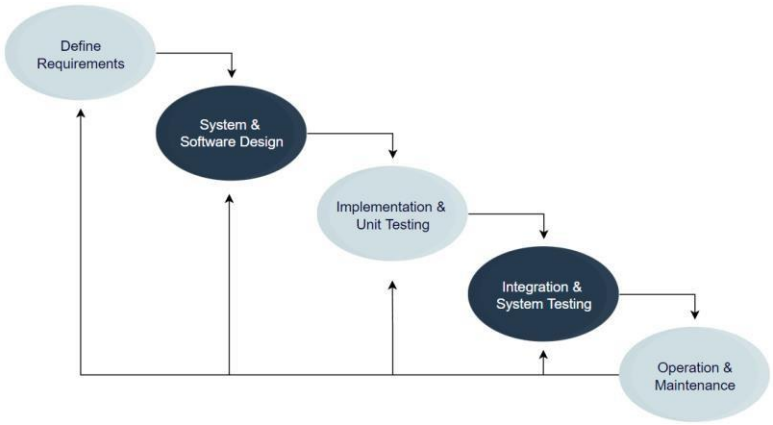
• Platform Limitations: The project is currently available as a desktop application and is not accessible on mobile phones or web platforms.
• Implementation: Expenses related to software, hardware, and training may be associated with project implementation.
• Requirements: Laptop or Computer System is Required
• Implementation Duration: Implementing the project may take time, potentially impacting regular banking operations.
•Inter-departmental Efficiency: While promoting efficiency, interconnectivity can present challenges, necessitating careful planning and optimization within the

CHAPTER 2: REQUIREMENT AND ANALYSIS

2.1 SOFTWARE REQUIREMENT SPECIFICATION

The Software Requirement Specification (SRS) is a comprehensive document that defines the expected performance and functionality of the Vishnu Legacy Bank system. This document serves as a foundation for all software engineering activities and is created once all the requirements have been elicited and analyzed. The SRS is a formal report that represents the software system, enabling customers to review its alignment with their needs. It includes user requirements and detailed specifications.

2.2 MODEL USED (Waterfall Model)



The development model utilized for the Vishnu Legacy Bank project is the Waterfall Model. This model encompasses the following sequential phases:

• Requirement Gathering and Analysis: This phase captures all potential system requirements and documents them in a requirement specification document.
• System Design: It involves studying the requirement specifications from the first phase and preparing the system design, specifying hardware and system requirements, and defining the overall system architecture.
• Implementation: The system is developed in small units based on the system design, which are integrated into the next phase. Each unit undergoes unit testing to verify its functionality.
• Integration and Testing: All units developed in the implementation phase are integrated into a complete system after thorough testing of each unit. The entire system is tested for any defects or failures.
• Deployment of System: After functional and non-functional testing, the product is deployed in the customer environment or released into the market.
• Maintenance: Ongoing maintenance is performed to address issues arising in the client environment. Patches are released to fix these issues and to enhance the product with newer versions.

2.3 FUNCTIONAL REQUIREMENTS

The functional requirements for the Vishnu Legacy Bank system are as follows:
• Users must possess a valid User_Name and Password to log in or sign up to create their individual profiles.
• Admin can log in using a unique User Id and Password.
• Users can access and view their personal details, marks, and attendance records.
• Client can add, delete, and modify student details, marks, and attendance records for future reference.
• Security has the authority to add, delete, or update faculty and user/student information.

2.4 SOFTWARE REQUIREMENTS

The software requirements for the Vishnu Legacy Bank project are as follows

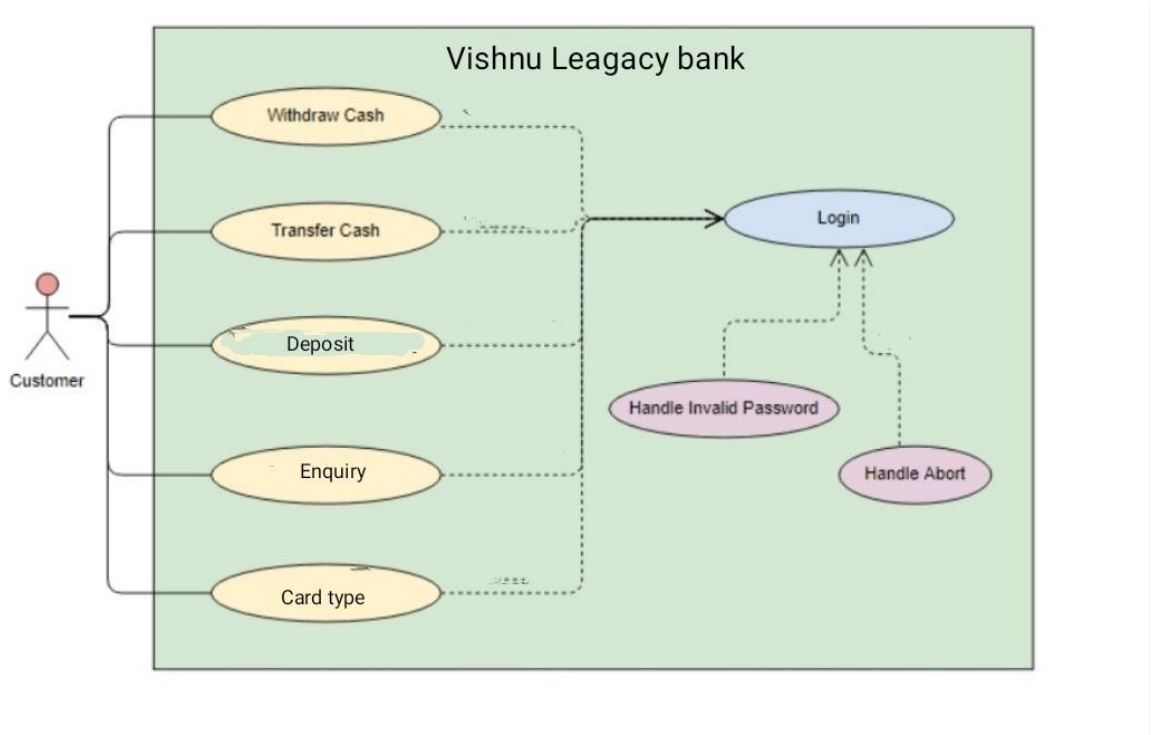
- Operating System: Compatible with Windows and other relevant systems.
- Front-End: Utilizes Tkinter for the user interface, pandas for data manipulation, linear regression for predictive analysis, and numpy for numerical operations.
- Back-End: Relies on SQL Server version 19.01 for secure data management.
- Usage: Designed as a Desktop Application for easy access and efficient use.

- Language Used: Developed using the Python programming language.
- Tools: Developed and integrated using Visual Studio Code for streamlined development and maintenance.

2.5 HARDWARE REQUIREMENTS

The hardware requirements for the Vishnu Legacy Bank project are as follows:
Processor Speed: 2.5 GHz and above
Hard Disk: 2 GB to 30 GB
RAM: 4GB

2.6 USE CASE DIAGRAM



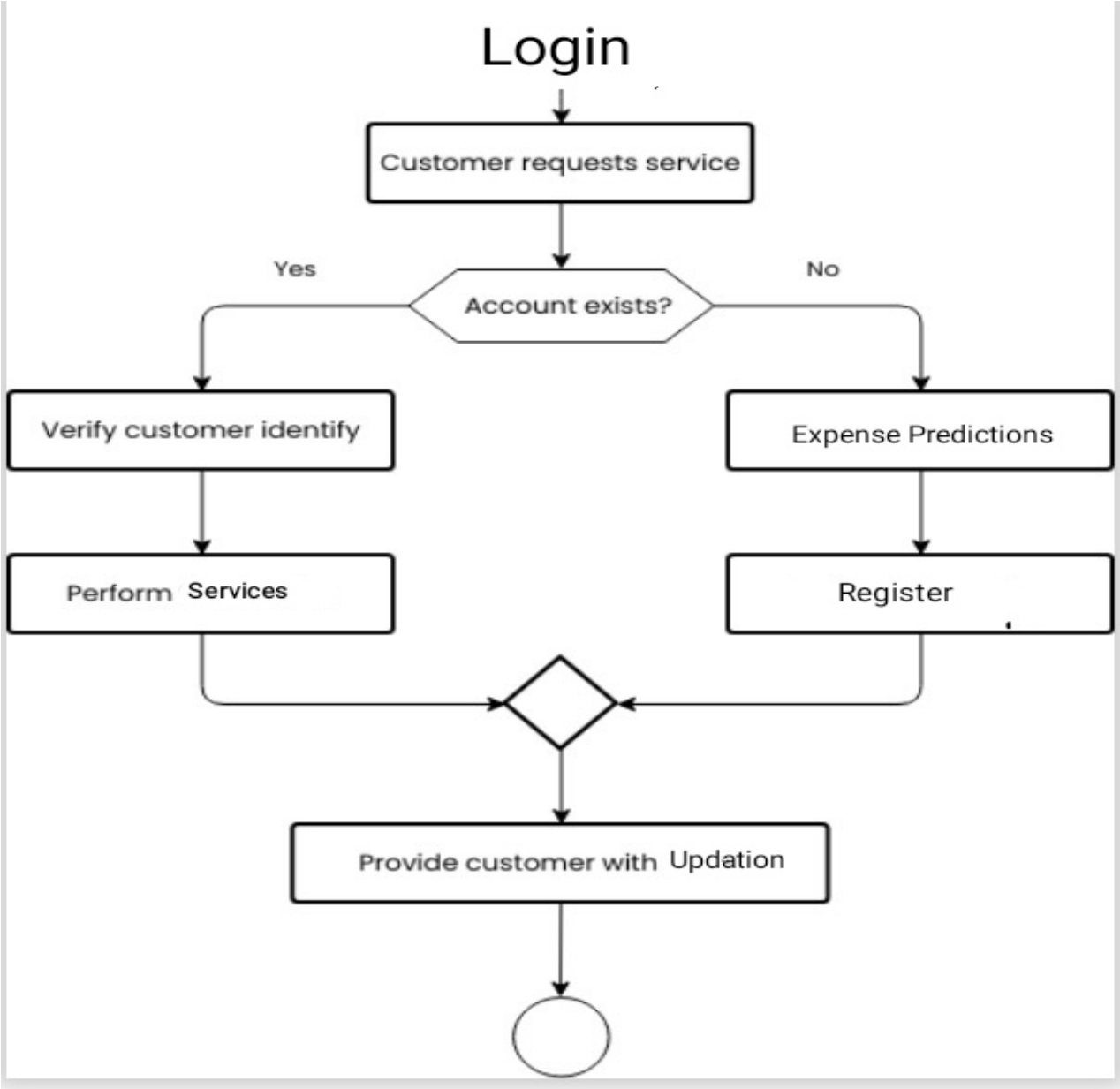
CHAPTER 3: SOFTWARE DESIGN

3.1 INTRODUCTION

Software design is the process of translating user requirements into a suitable form that facilitates software coding and implementation. It involves representing the client's requirements, as outlined in the SRS (Software Requirement Specification) document, in a format that is easily implementable using a programming language. This chapter is dedicated to the design of the Vishnu Legacy Bank system, incorporating flowcharts to visually illustrate specific sections of the software system.

3.2 FLOWCHARTS

Flowcharts are a visual representation of how information flows within a process or system. They serve to improve our understanding of process and system operations, enabling us to identify potential issues, enhance operational efficiency, and develop more effective processes. The Vishnu Legacy Bank project utilizes flowcharts to illustrate the flow of data within the three core services: Login, Register, and Expense Predictor. These flowcharts provide a visual representation of how data is processed and transferred within the system, aiding in a more comprehensive understanding of the software's operational flow.



3.3 DATASET DESCRIPTION

The Expense Predictor service utilizes a dataset that includes variables such as monthly income, age, gender, and [add other relevant features]. This dataset is essential for providing users with data-driven insights into their spending patterns and assisting them in making informed financial decisions. It serves as a valuable resource for improving financial management and making recommendations to the users, enhancing their overall banking experience.

the dataset

Transactic	Age	Items	Monthly Ir	Transactio	Record	Gender	City Tier	Total Spend
TXN001	42	10	7313	627.6681	5	Female	Tier 1	4198.385
TXN002	24	8	17747	126.9046	3	Female	Tier 2	4134.977
TXN003	47	11	22845	873.4697	2	Male	Tier 2	5166.614
TXN004	50	11	18552	380.2194	7	Female	Tier 1	7784.448
TXN005	60	2	14439	403.3742	2	Female	Tier 2	3254.16
TXN006	49	6	6282	48.97427	2	Male	Tier 2	2375.036
TXN007	21	14	7086	961.2038	8	Male	Tier 1	7494.475
TXN008	58	9	8881	962.2537	10	Male	Tier 3	10782.94
TXN009	20	6	5635	858.3281	5	Male	Tier 1	3854.277
TXN010	48	12	20861	43.03674	4	Female	Tier 2	5346.14
TXN011	37	8	2556	947.8464	1	Male	Tier 3	1712.074
TXN012	49	8	27947	89.64335	6	Male	Tier 2	8047.046
TXN013	48	12	23445	773.636	9	Male	Tier 3	11334.58
TXN014	34	10	14297	245.8942	2	Male	Tier 2	3791.364
TXN015	39	1	3405	120.9168	1	Male	Tier 1	1674.999
TXN016	29	13	28714	546.5523	6	Male	Tier 2	8446.608
TXN017	37	13	14069	131.2064	8	Female	Tier 1	8338.439
TXN018	58	14	28428	102.0524	9	Female	Tier 3	11933.06
TXN019	58	15	14982	69.32488	10	Male	Tier 2	11898.85
TXN020	58	13	27864	350.7857	8	Female	Tier 1	10502.4
TXN021	30	5	16960	588.3179	10	Male	Tier 2	11640.43
TXN022	51	14	3041	361.6467	8	Male	Tier 3	6929.271
TXN023	34	13	5037	579.5193	6	Female	Tier 2	4659.601
TXN024	44	4	27403	755.191	2	Female	Tier 3	5186.995
TXN025	30	11	23570	484.6853	6	Male	Tier 1	7573.79
TXN026	29	5	8954	87.43645	1	Female	Tier 3	2113.269
TXN027	28	15	12015	997.7114	8	Male	Tier 1	8316.444

CHAPTER 4: DATABASE DESIGN

4.1 INTRODUCTION

Database design, in the context of the Vishnu Legacy Bank, is a set of essential tasks and processes aimed at improving the creation, development, implementation, and maintenance of the bank's data management system. A well-designed database reduces maintenance costs, enhances data consistency, and optimizes disk storage space usage. Therefore, creating a database for the Vishnu Legacy Bank requires careful consideration and planning.

The primary objectives of database design for the Vishnu Legacy Bank are to establish both physical and logical design models for the proposed database system. The logical model primarily focuses on data requirements, ensuring that the stored data remains independent of specific physical conditions. On the other hand, the physical database design model translates the logical design into a database system that is optimized for hardware resources and software systems like the Database Management System (DBMS).

Database design is critically important for several reasons:

• Database designs serve as blueprints for how data will be stored within the system, directly impacting the overall performance of the bank's applications.

• The design principles laid out for the database provide a clear understanding of how the bank's applications behave and how user requests are processed.

• Proper database design ensures that all user requirements are met effectively, enhancing the quality of service provided by the Vishnu Legacy Bank.

• Efficient database design reduces the processing time of applications, resulting in quicker and more responsive services for bank customers.