# Industrial Internship Report on
# "Bank Managment System"

**Prepared by**
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*Executive Summary*

This report provides details of the Industrial Internship provided by upskill Campus and The IoT Academy in collaboration with Industrial Partner UniConverge Technologies Pvt Ltd (UCT).

This internship was focused on a project/problem statement provided by UCT. We had to finish the project including the report in 6 weeks' time.

My project was on Bank Management System . This Project allows the user to create a Bank Account in the bank the user needs to first sign-up and fill the essential details and create a required type of account and an user who already has an account can login using the card number and pin number . The User can also Deposit the amount into the account and Withdraw the amount from the account . It also has fast cash facility like ATM and Account Statements are available for them . User can change the pin according to their needs and can transfer the money from one account to another . The user also can check the balance in their account .

This internship gave me a very good opportunity to get exposure to Industrial problems and design/implement solution for that. It was an overall great experience to have this internship.

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## *1 . Preface :*

In this 6 weeks I had been growing and learning . Firstly at the very first week , i.e Week 1 I had been learning about the problem statements and finding the effective solution for it . It also needs me to find all the parameters in Bank Management System and to find an effective method to make develop it .

In the second week i.e Week 2 I have worked upon the registration module and have used the parameters like name , Email-id , Phone no , Address , Parents Name , Marital Status , Account type and the services required . The Registered user can login into their account using their credentials provided during account creation .

In the third week i.e Week 3 I had worked on the database connectivity that is connected to the project for saving the data from the registration and login from the user . For Database Connectivity I have created JDBC Connection using MySQL WorkBench and created tables for saving the data .

In the Fourth Week i.e Week 4 I had created Deposit , Withdrawl , Account Statements and Fund Transfer pages for further accomplishments . While in the Fifth Week i.e Week 5 the project ended with mini statement and change pin pages . And I have made my Friends and others to create an account and use the management system .

The Feedback given by the peoples help me to think about certain changes that needs to look after and I accept the changes and made modification into the project accordingly . And then Submit the report and get the project certified .

This Internship really plays a very important role in my career as it gives me a interface to apply my learning and for the betterment of my future . It makes me learn new things and a great experience . In this 6 weeks I have attended few video lectures and quiz which intentionally lead to gaining more knowledge and technical skills for Industial environment .

This helps me learn that how can I integrate different structures and my knowledge in my field and make a better career out of it .

# 2 . Introduction

## 2.1 About Uniconverge Technologies Pvt . Lmt :

A company established in 2013 and working in Digital Transformation domain and providing Industrial solutions with prime focus on sustainability and RoI.

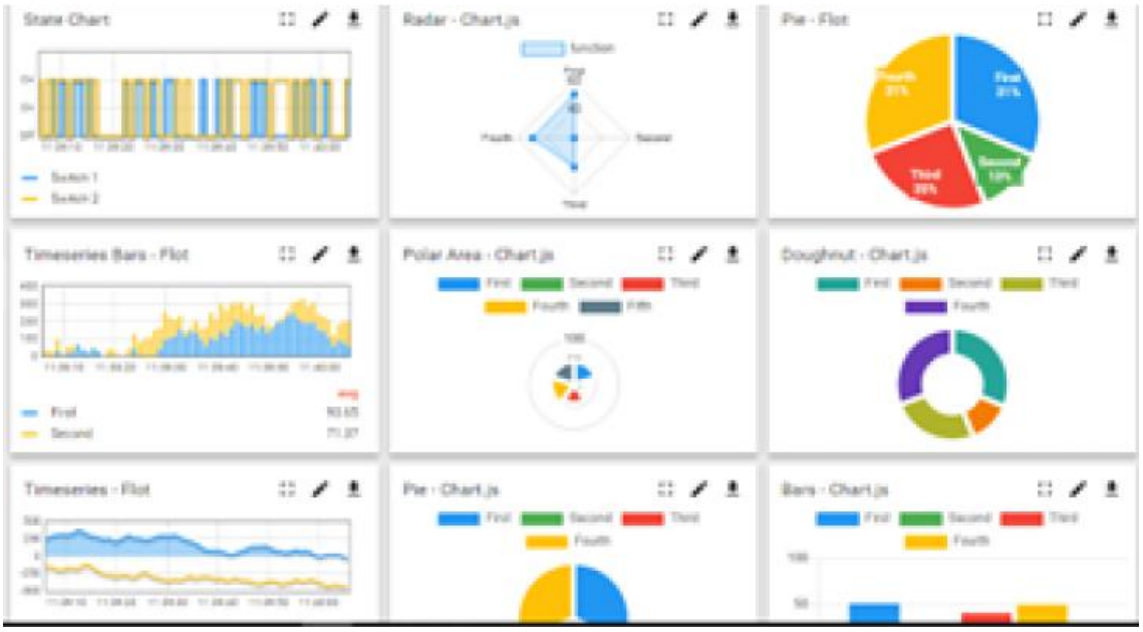
For developing its products and solutions it is leveraging various **Cutting Edge Technologies e.g. Internet of Things (IoT), Cyber Security, Cloud computing (AWS, Azure), Machine Learning, Communication Technologies (4G/5G/LoRaWAN), Java Full Stack, Python, Front end** etc.

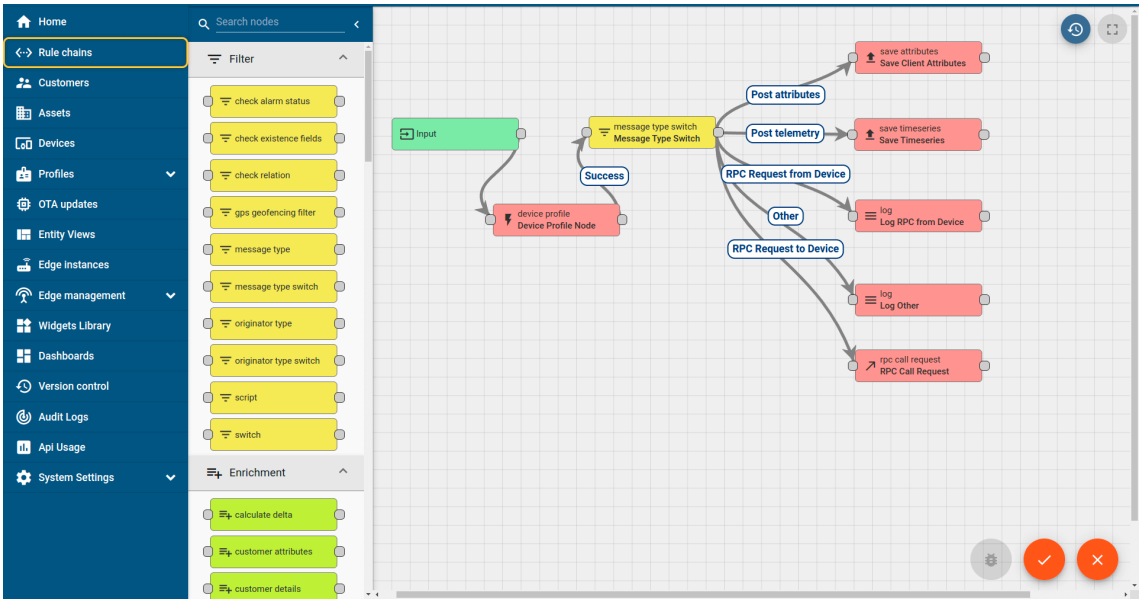

### i. UCT IoT Platform (UCT Insight)

**UCT Insight** is an IOT platform designed for quick deployment of IOT applications on the same time providing valuable "insight" for your process/business. It has been built in Java for backend and ReactJS for Front end. It has support for MySQL and various NoSql Databases.

- It enables device connectivity via industry standard IoT protocols - MQTT, CoAP, HTTP, Modbus TCP, OPC UA
- It supports both cloud and on-premises deployments.

- It has features to
  - Build Your own dashboard
  - Analytics and Reporting
  - Alert and Notification
  - Integration with third party application(Power BI, SAP, ERP)
  - Rule Engine



## ii. Smart Factory Platform ( FACTORY WATCH )

Factory watch is a platform for smart factory needs.
It provides Users/ Factory

- with a scalable solution for their Production and asset monitoring
- OEE and predictive maintenance solution scaling up to digital twin for your assets.
- to unleased the true potential of the data that their machines are generating and helps to identify the KPIs and also improve them.
- A modular architecture that allows users to choose the service that they what to start and then can scale to more complex solutions as per their demands.

Its unique SaaS model helps users to save time, cost and money.


| Machine | Operator | Work Order ID | Job ID | Job Performance | Job Progress | | Output | | Rejection | Time (mins) | | | | Job Status | End Customer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Start Time | End Time | Planned | Actual | | Setup | Pred | Downtime | Idle | | |
| CNC_S7_81 | Operator 1 | WO0405200001 | 4168 | 58% | 10:30 AM | | 55 | 41 | 0 | 80 | 215 | 0 | 45 | In Progress | i |
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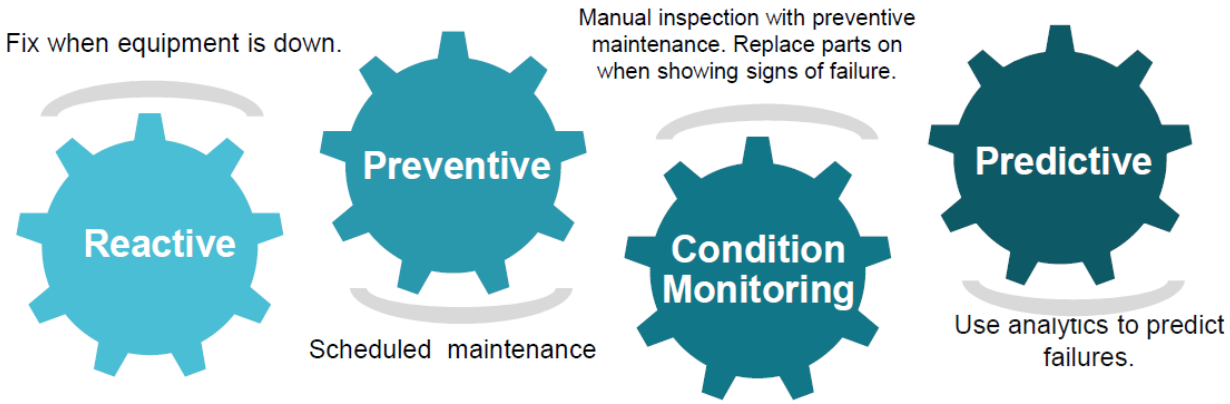
## iii. LoRaWAN based Solution

UCT is one of the early adopters of LoRAWAN teschnology and providing solution in Agritech, Smart cities, Industrial Monitoring, Smart Street Light, Smart Water/ Gas/ Electricity metering solutions etc.

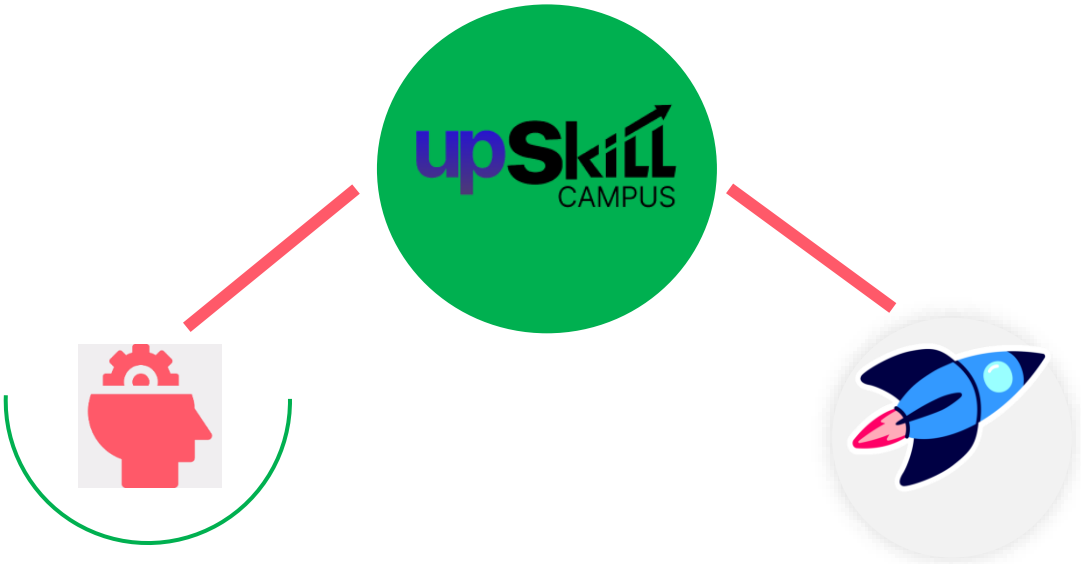
## iv. Predictive Maintenance

UCT is providing Industrial Machine health monitoring and Predictive maintenance solution leveraging Embedded system, Industrial IoT and Machine Learning Technologies by finding Remaining useful life time of various Machines used in production process.



## 2.2 About upskill Campus (USC)

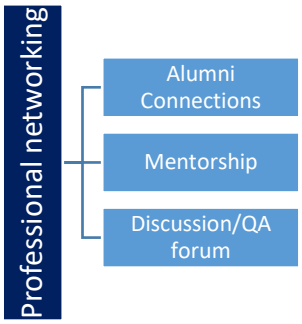
upskill Campus along with The IoT Academy and in association with Uniconverge technologies has facilitated the smooth execution of the complete internship process. USC is a career development platform that delivers **personalized executive coaching** in a more affordable, scalable and measurable way.

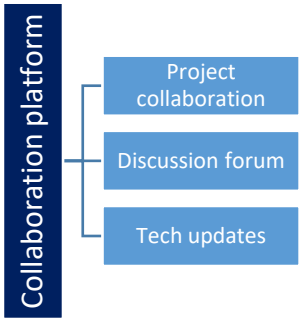


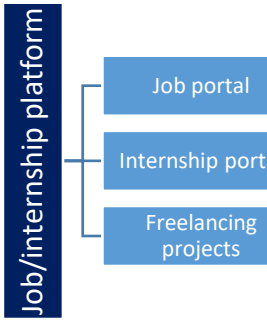
Seeing need of upskilling in self paced manner along-with additional support services e.g. Internship, projects, interaction with Industry experts, Career growth Services

upSkill Campus aiming to upskill 1 million learners in next 5 year

https://www.upskillcampus.com/

## 2.3 The IoT Academy

The IoT academy is EdTech Division of UCT that is running long executive certification programs in collaboration with EICT Academy, IITK, IITR and IITG in multiple domains.

## 2.4 Objectives of this Internship program

The objective for this internship program was to

- ☛ get practical experience of working in the industry.
- ☛ to solve real world problems.
- ☛ to have improved job prospects.
- ☛ to have Improved understanding of our field and its applications.
- ☛ to have Personal growth like better communication and problem solving.

## 2.5 Reference

[1] https://www.upskillcampus.com/
[2] https://www.linkedin.com/company/uniconvergetechnologies/?originalSubdomain=in

## 2.6 Glossary

| Terms | Acronym |
|---|---|
| LoRaWAN | low-power, wide area networking protocol built on top of the LoRa radio modulation technique |

## *3 . Problem Statement :*

Develop a prototype of a Banking Information System in Core Java that provides a working preview of the key functionalities of a real banking system. The prototype should demonstrate the core features and flow of the system, showcasing its functionality and usability.

- Key Functionality to Include in the Prototype:

1. **User Registration**: Implement a simplified user registration process where users can provide basic details to create an account.
2. **Account Management**: Develop the ability to create and manage user accounts, including assigning unique account numbers and tracking account balances.
3. **Deposit and Withdrawal**: Enable users to make deposits and withdrawals from their accounts, updating the account balance accordingly.
4. **Fund Transfer**: Implement a simplified version of fund transfer functionality, allowing users to transfer funds between their accounts or to other registered users.
5. **Account Statements**: Provide users with a preview of their account statements, displaying transaction history, dates, amounts, and remaining balances.
6. **Password Protection:** Develop a basic login system with password authentication to ensure secure access to user accounts.
7. **Error Handling:** Implement basic error handling mechanisms to handle common exceptions, such as insufficient funds and invalid transactions, and display relevant error messages to users.
8. **User Interface**: Design a user-friendly interface for the prototype that allows users to navigate through the system, perform banking operations, and view relevant information.
9. **Persistence:** Implement basic data persistence by storing user account information and transaction history temporarily during the prototype session.

This project have facility to opening account, depositing and withdrawing money. The Bank management system is an application for maintaining a person's account in a bank. The system provides the access to the customer to create an account, deposit/withdraw the cash from his account, also to view reports of all accounts present. The following presentation provides the specification for the system.

# *4 . Existing and Proposed Solution :*

## 4 . 1 . Existing System :

The existing system work manually. The existing system has got lot of intricacies within itself and need lot of human effort and paper works. All above the data need to be maintained on ledgers and maintaining this is a tedious and risky process. As the transactions increases, so the data too. So the task of maintaining them increases exponentially. To view a data may need lot of paper to be searched.

**Some of the negative aspects of the existing system are as follows:**

1) Time Consuming**:**

There is a lot of time consumes in the bank, whenever we open account, deposit, withdraw or pass a loan than because of many customers with his/ her different purpose, than we wait for our turn sometimes 2 to 3 hours.

2) Reliability:

This banking system is not fully reliable whenever the computer system is create a problem and not work properly than sometime our data is damaged or lost.

3) Man Power:

In this project man power is fully used. A number of employee need to manage the banking system.

4) Less Accurate:

this system is not fully accurate, because sometime computerised system create a problem in working, than the computer system also give us wrong results.

**To overcome these, the proposed system has been suggested.**

## 4 . 2 . PROPOSED SYSTEM:

In this project we are going to explain about *Banking Management System***.** This project have facility to opening account, depositing and withdrawing money.The proposed system is a computerized one. This has greater accuracy and efficiency. This takes only limited time for calculation.

The proposed system can be used to maintain efficiently the BANKING schedule. In larger organizations employees are large. At that time also the proposed system is useful and helpful. The system includes users Administrator(HR) level.

In this project we have a admin login feature, we want to fill the admin and password then we enter to home page,The home page facility show all the include features about this banking project.we have a number of options like open account, create a new account , funds transfer , deposit money, withdraw money and check balance , mini statements facility also available, we can easily choose any option according to our own requirement. We have also feature of validation.

We also take view of all the account list information according to date. We have also information record about this bank and its director.

## 4.3 . REQUIREMENTS:

- Functional Requirements
- Non- Functional Requirements
- System Requirments

A . Functional requirements:

- Java Swing and awt packages in Apache Netbeans
- Mysql library to connect with the database .
- DateChooser Library .

B . Non-Functional requirements:

- Must provide the program in vivid colours and format.
- Should have adaptability to allow usage of single module at a time.
- Must enable faster processing of operations when a module is selected.
- Easy to use and Effective for users .

C . System Requirments:

- Hardware requirements:

  Processor: Pentium IV
  RAM: 128MB required
  HARD DISK: 1GB required
  Printer: Any compatible printer

- Software requirements **:**

  JDK 1.5 MYSQL

JAVA being the platform independent language to generate the user-friendly Software system is used as Front-end system and MYSQL as Back-end database system, this will facilitate user in operating the system successfully.

A *platform* is the hardware or software environment in which a program runs. We've already mentioned some of the most popular platforms like Windows 2000/XP, Linux, Solaris, and Mac OS. Most platforms can be described as a combination of the operating system and hardware. The Java platform differs from most other platforms in that it's a software-only platform that runs on top of other hardware-based platforms.

The Java platform has two components:

The *Java Virtual Machine* (Java VM)

- The *Java Application Programming Interface* (Java API)
- The Java Virtual Machine (JVM).

## 4.4 Code Submission (Github Link ) :

**https://github.com/jaiswalvaishnavi09/Bank-Managment-System**

## 4.5 Report Submission (Github Link):

**https://github.com/jaiswalvaishnavi09/Bank-Managment-System**

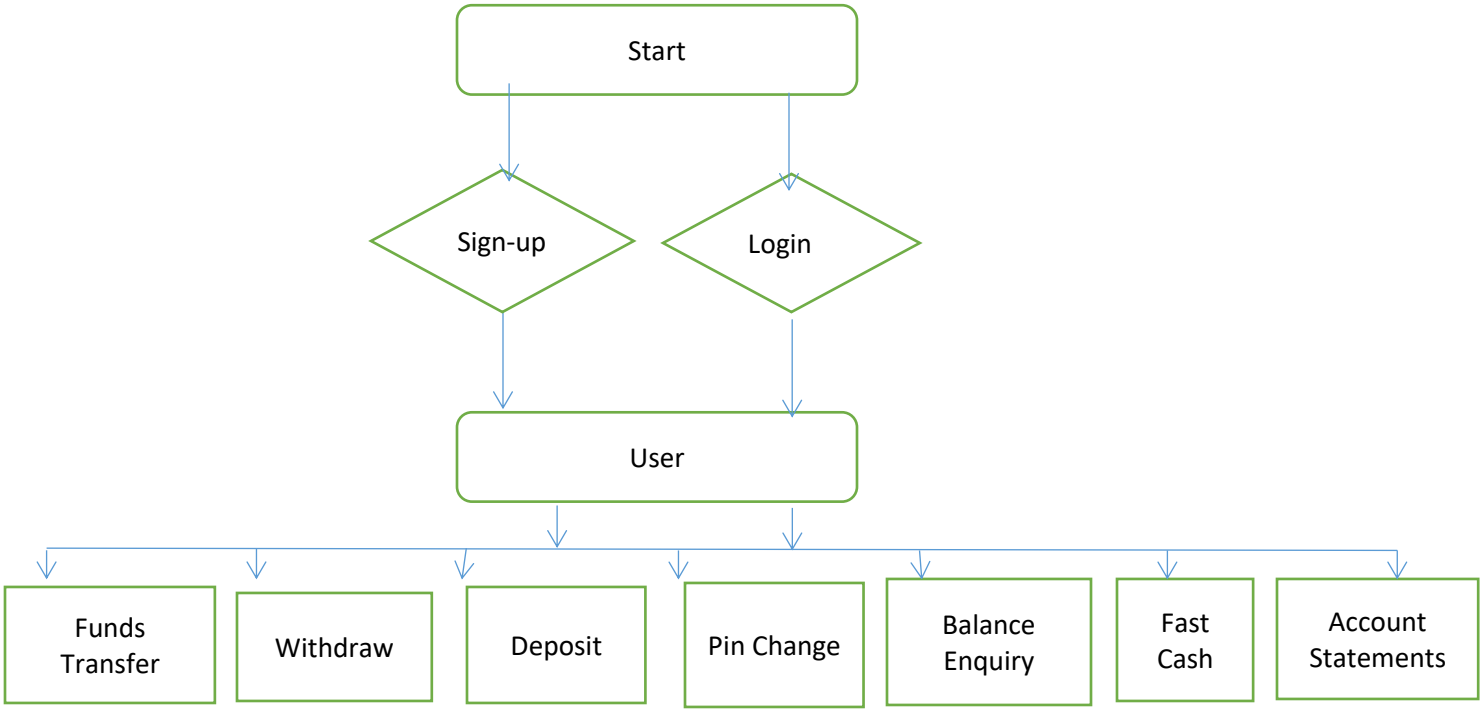
## . 5 . Proposed Design / Model :

### 5 . 1 Modules :

The Modules in the System are :

- Registration Module :
  The Registration Module contains Login and Signin Options . The User who does not have an account or want to create a new account sign-up and fill the information resulting in formation of a bank account and the bank provides a card number and pin number for login further . Those already registered can access their account through login and can make transactions .
- Deposit Module :
  This Module provides the facility of depositing the particular amount in the account of the account holder .
- WithDrawl Module :
  This Module provides the facility of withdrawing the user defined amount from the account of the account holder
- Balance Enquiry :
  This Module Gives the information of the amount / balance present in the account of the account holder.
- Fast Cash Enquiry :
  This Module provides the facility of withdrawing the bank defined amount from the account of the account holder eventually same as ATM machine the withdrawl amount be in the multiple of zeroes
- Pin Change :
  This Module provides the facility to the user to change the pin of their account accordingly and maintain security of the accounts and Data .
- Account Statements :
  This Module provides the facility to the get the statements of the transaction made by the account holder from the account .
- Fund Transfer :
  This Module provides the facility of transferring the amount / money from one account to another .

## 5 . 2 Flow Diagram :



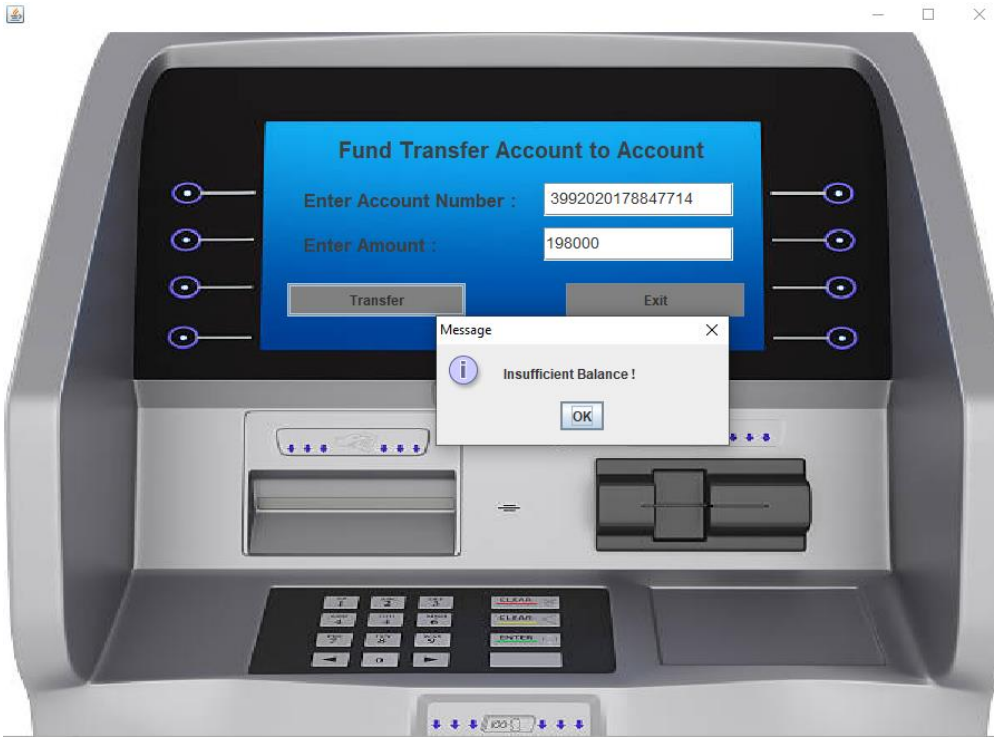
## 6. Performance Testing :

**Banking Domain Testing** is a software testing process of a banking application for functionality, performance, and security. The main purpose of testing banking application is to ensure that all the activities and functionalities of a banking software run smoothly with no errors and it remains protected.
The BFSI (Banking, Financial services and Insurance) sector is the biggest consumer of IT services. Banking Applications directly deal with confidential financial data. It is mandatory that all the activities performed by banking software run smoothly and without any error. Banking software perform various functions like transferring and depositing fund, balance inquiry, transaction history, withdrawal and so on. Testing banking application assures that these activities are not only executed well but also remain protected from hackers.

### 6. 1 Test Cases :

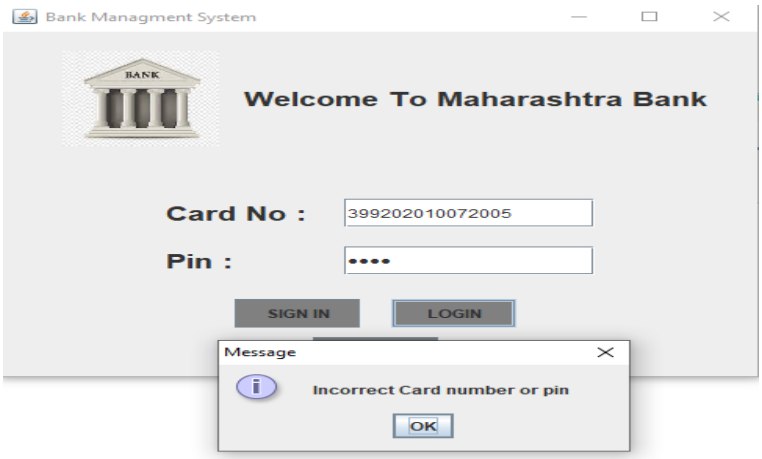
Test Case 1 :

This Case occurs when the user is transferring amount from one account to another and the amount is less than the balance of the account holder.



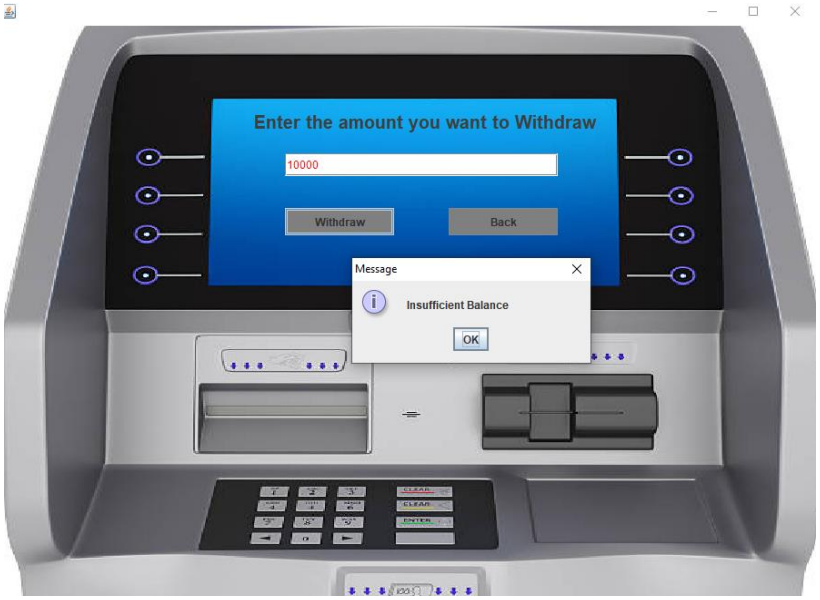
Test Case 2 :

This Test Case occurs when the user gives wrong account number or pin as input .



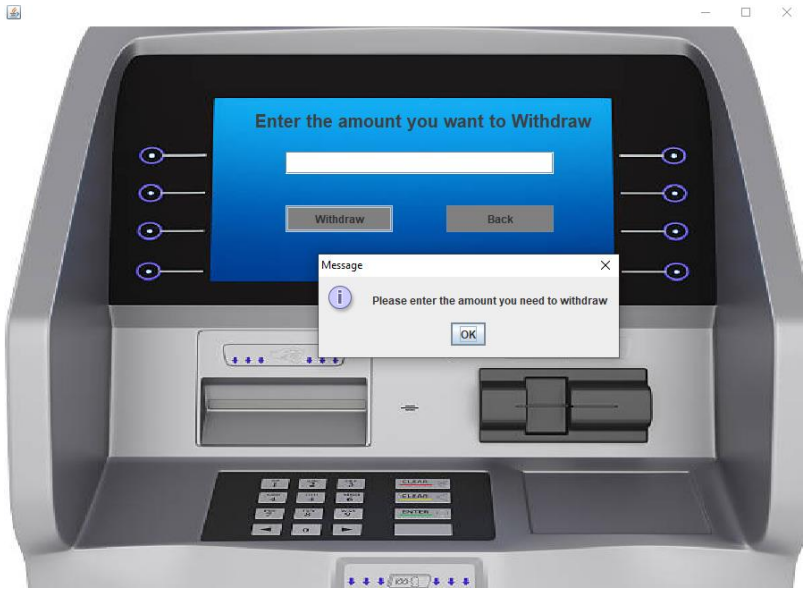

Test Case 3 :

This test case gives a pop up message when the user tries to withdraw an amount greater than the Balance in the account.



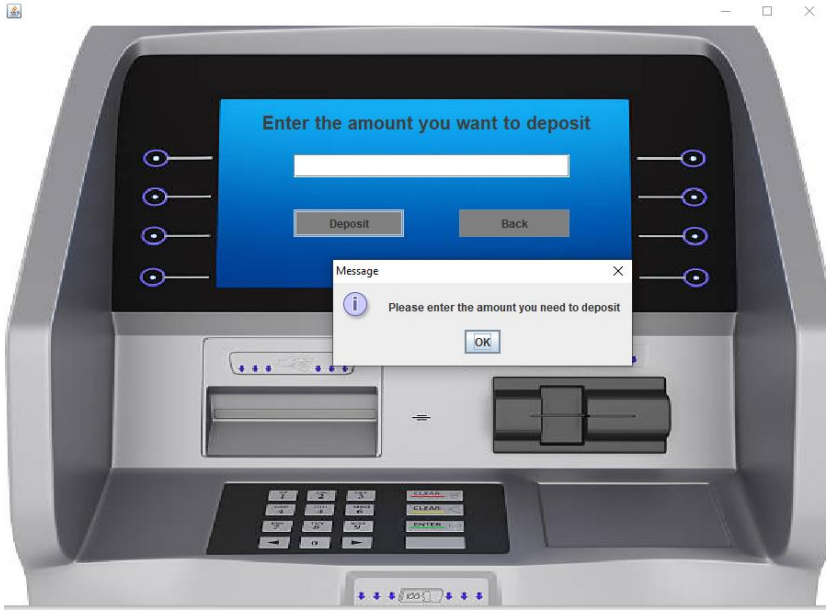
Test Case 4 :

This case occurs when the user doesn't gives the input amount to withdraw and click on the withdrawl button.




Test case 5 :

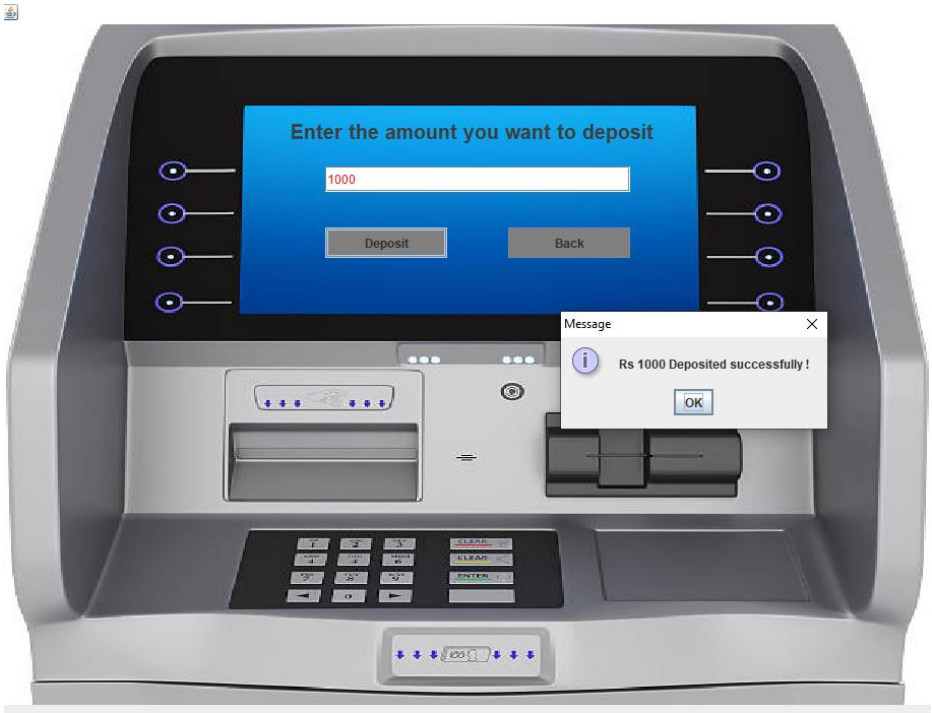
This case occurs when the user does not gives the input of any amount to deposit and click on the deposit button .



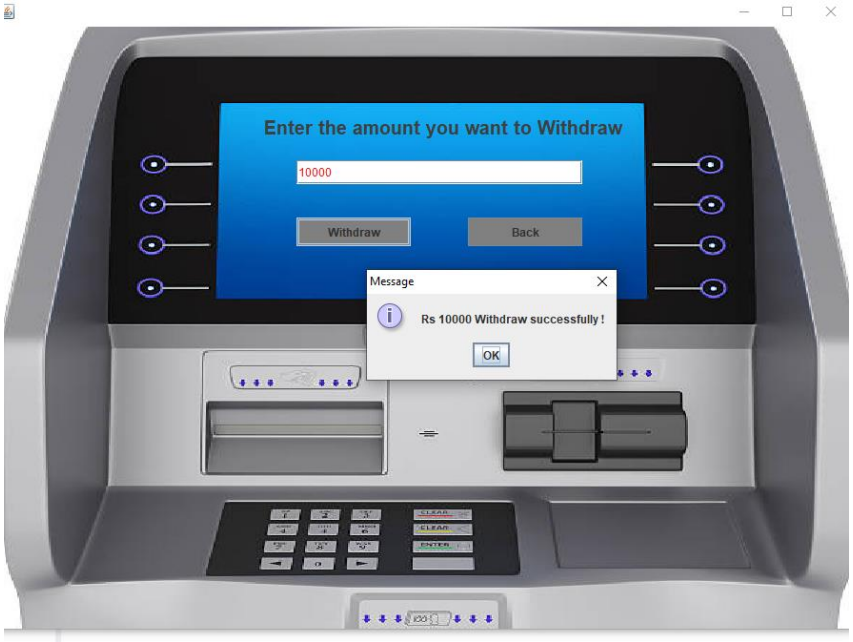
6. 2 Output :


Login To Account


Transaction Page

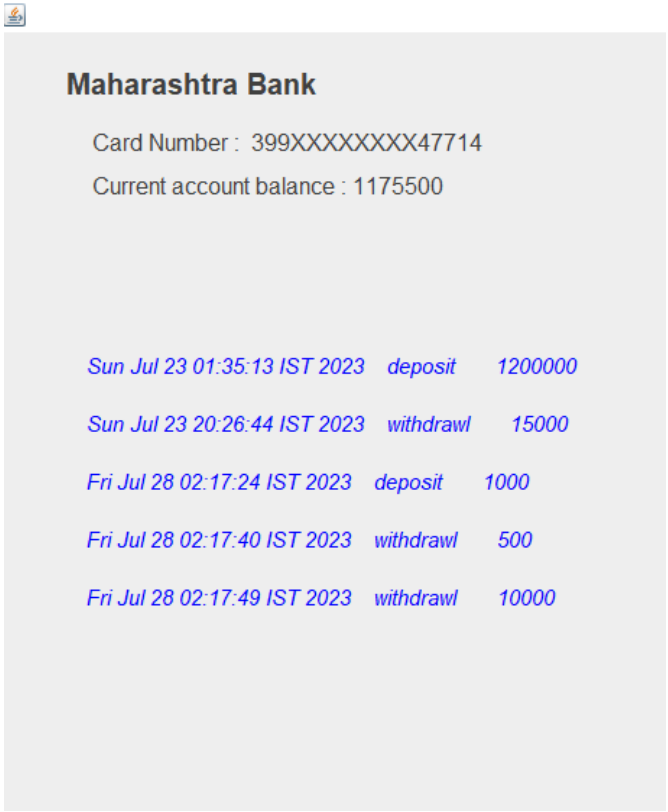



Deposit Amount into Account

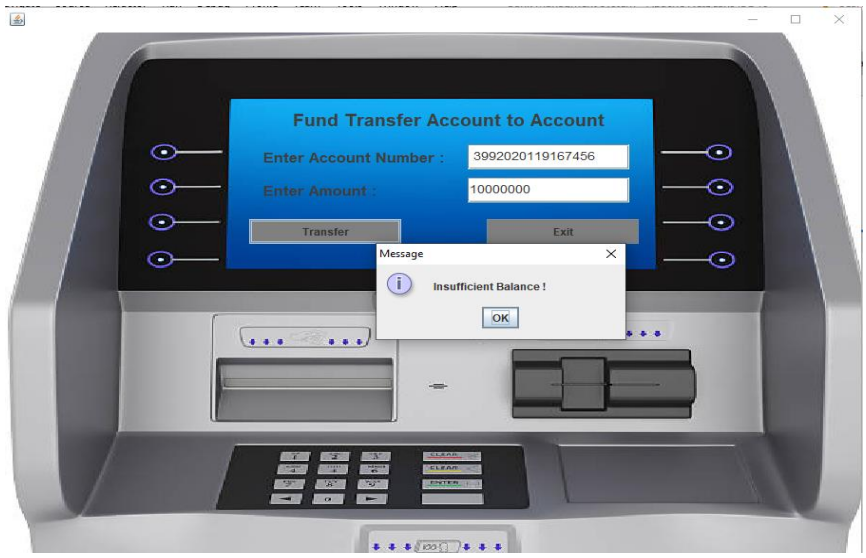



Withdraw Amount from Account


Balance Enquiry




Account Statements




Fund Transfer

## 6. 3 Data Dictionary :

Data dictionary is the collection of complete data is used in some process. It can also to be called the whole databases that are used in the project. Data is stored in different data bases. Database is a collection of different table and tables further are collection of records in which each record is made up of primary unit called fields' data fields are the entity where the information can be stored and accessed as and when required.

| Variable Name | Purpose | Associated With |
|---|---|---|
| Email id | Indicate email of account holder. | Database |
| Password | Indicate password for login | Database |
| Acc_number | Acc_number for open account | Database |
| Name | Used to store custumor name | Database |
| FatherName | Used to store father name | Database |
| ResidentAddress | Used to store customer res. address | Database |
| Phoneno | Used to store customer phoneno | Database |
| Amount | Amount / Balance in the account | Database |

## *7 . My Learnings :*

Before this I was a new comer and have a very less or I can consider as I have no experience of how to implement my skills and learning in the field / company and this platform provide me a perfect space to apply and learn . It helps me to integrate all my learning and gives me a way to apply it and learn more .

- Learned and researched about existing project.
- Studied about the complications faced by existing system.
- Identified solutions to overcome issues faced by existing system.
- Read up on Tactics used to make project .
- Integration and modelling process for system.

## *8 . Future Work Scope :*

In the future more software companies will hire this software program because now a days the need for the speed in the day-to-day life has become essential. As competition increases, companies by considering old version, they develop more efficient versions for individual success.

In future we can make a link of this project with networking .We can also convert this project in Hibernate. Hibernate is a framework. It storage large amount of database.

In future we can also add the facility to change the password and recovery the forgotten password..

## *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**.**