VIRTUAL ATM SYSTEM

MINI PROJECT REPORT

Submitted to the Department Of Computer Applications, Bharathiar University in Partial Fulfillment Of the Requirement for the Award Of the Degree Of

MASTER OF COMPUTER APPLICATIONS

Submitted by

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CERTIFICATE

This is to certify that, this mini project work entitled "**VIRTUAL ATM SYSTEM"** was submitted to the Department of Computer Applications, Bharathiar University in partial fulfillment of the requirements for the award of the degree of **MASTER OF COMPUTER APPLICATIONS**, is a record of original work done by **SUGESH K(22CSEA70),** during his period of study in the Department of Computer Applications, Bharathiar University, Coimbatore, under my supervision and guidance, and this project work has not formed the basis for the award of any Degree/ Diploma /Associateship/ Fellowship or similar title to any candidate of any University.

Place: Coimbatore

Date:

Submitted for the University Viva-Voce Examination held on _____

Project Guide **Head of the Department**

Internal Examiner **External Examiner**

DECLARATION

I hereby declare that this mini project work titled, "**VIRTUAL ATM SYSTEM**" submitted to Department of Computer Applications, Bharathiar University, is a record of original work done by **SUGESH K (22CSEA70)**, under the supervision and guidance of **Dr. T.AMUDHA,M.C.A.,M.Phil.,Ph.D.,** Professor Department of Computer Applications, Bharathiar University, and that this projectwork has not formed the basis for the award of any Degree/ Diploma/ Associateship/Fellowship or similar title to any candidate of any University.

Place: Coimbatore **Signature of the candidate**

Date: **(SUGESH K)**

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ACKNOWLEDGEMENT

I have taken efforts in this project. However, it would not have been possible withoutthe kind support and help of many individuals and organizations. I would like to extend my sincere thanks to all of them.

I express my sincere gratitude to our Professor & Head of the Department **Dr. M. PUNITHAVALLI, M.Sc., M.Phil., Ph.D.,** Department of Computer Application, Bharathiar University, Coimbatore, thanks to department faculty members and guest faculties supportedto acquire knowledge from various inputs. I am forever indebted to this mini project guides **Dr. T. AMUDHA, M.C.A.,M.Phil.,Ph.D.,** Department of Computer Applications, Bharathiar University for providing valuable suggestions and always been enthusiastically guiding us throughout the project.

Finally, I also extend my special thanks to my family, friends, who have kindly provided the necessary support for the successful completion of the project and their moral support.

SYNOPSIS

The project titled "**VIRTUAL ATM SYSTEM"** is used to access their bank accounts and user has to select a menu from the options displayed on the screen. The menus are related to withdrawal, deposit, check the balance, and pay loan. Whenever the user needs to make cash withdraw, they can enter their PIN number (personal identification number). If a transaction fails for an invalid PIN, the ATM will display an error message and then ask the customer whether he/she wants to do another transaction. It will display the available denomination in the form of 100's 200's and 500's.

Once their withdrawal was successful, the amount will be debited in their account and the receipt will be printed. The ATM will provide the customer with a printed receipt for each successful transaction, showing the date, time, type of transaction, amount, and ending available balance(s).

To deposit the money, user need to deposit the amount, amount will be credited in theiraccount and user can view the deposited receipt.If user wants to check the available balancein their account, they can click the balance option. In addition, bank loan payment such as housing loan, personal loan, and business loan options are provided to pay the loans and user can also view the loan paid receipt.

CHAPTER NO 1

INTRODUCTION

1.1. JAVA

Java is a programming language and a platform. Java is a high level, robust, object-orientedand secure programming language.

Java was developed by sun micro system (which is now the subsidiary of Oracle) in the year 1995 James gosling is known as the father of Java. Before Java, its name was Oak. Since Oakwas already a registered company, so James Gosling and his team changed the name from Oakto Java.

Platform: Any hardware or software environment in which a program runs, is known as a platform. Since Java has a runtime environment (JRE) and API, it is called a platform.

1.2. MySQL

MySQL Workbench is a unified visual database designing or graphical user interface tool used for working with database architects, developers, and Database Administrators. It is developed and maintained by Oracle. It provides SQL development, data modeling, data migration, and comprehensive administration tools for server configuration, user administration, backup, and many more. We can use this Server Administration for creating new physical data models, E- R diagrams, and for SQL development (run queries, etc.). It is available for all major operating systems like Mac OS, Windows, and Linux. MySQL Workbench fully supports MySQL Server version v5.6 and higher.

CHAPTER NO 2
LITERATURE REVIEW

Brame and Simchi Levi (1995) has illustrated simulation model is worked by initially introducing the location based heuristic for general queuing problem as a location problem which is solved subsequently and the solution is transformed into solution to the queuing problem. The article of S. S. Lavenberg(1989) has discussed that simulation is feasible for statistically studying a complex queuing model. Moderate simulation durations are found to be sufficient to obtain precise confidence interval estimates.

As current configuration at each step of savings or insertion procedures is possibly infeasible, thus the alternative configuration is one that yields the largest savings in some criterion functions with these procedures can be found in Clarke and Wright (1964) or in Solomon (1987).

According to Pieter Tjerk de Boer (1983), substantial focus has been dedicated to the estimation of overflow probabilities in queuing networks. A different adaptive method has applied to queuing problems than in the present work with few simple models been considered.

Christofides et al (1981) has discussed Lagrangean relaxation procedures for the queuing of customer in front of ATM. Interactive optimization is incorporated into the problem-solving process with adaptations of this approach to queuing are presented by Krolak et al (1970).

By taking one day as a standard, a heavy crowd is found in prime hours during the weekdays in Bank , the equipment ATM is 100% utilized by the customers. Utilization factor for Bank in the non-busy hours is 50% and 55% respectively. In weekend period, theutilization factor for Bank is 62% and 64% respectively.Dynamic programming solution to atm cash replenishment optimization problem Ozer et.al The proposed method uses matrix chain multiplication by mapping the matrices to the daily ATM cash requirements. Assuming accurate projections of withdrawal amounts are available, we concentrate our efforts on determining the best time to refill our bank accounts with cash.

CHAPTER NO 3
SUBJECTS AND METHODS

3.1 STUDY SUBJECTS

Most of the ATMs have the problem of long queue of customers to undergo simple transaction at the peak hours and remain idle due to the lack of customer entry at the off peak hours.

1. To develop a simulation model to reduce the waiting time of customers and the totaloperation cost related to ATM installation.

2. To determine whether only one machine is required to fulfill the need or two more machinesare needed to be installed to give comfort to customers who are really of short period of time.

3. To develop an efficient procedure for ATM queuing problem.

Simulation technique in queuing model is used for solving ATM waiting time problem since this problem cannot be solved with mathematical techniques and physical experimentation. Simulation technique helps identifying the pitfalls of existing 3 ATM services of 3 different banks at VIT (Vellore Institute of Technology). Initially, the simulation is being applied to see the rate of entry and exit, the waiting time of a customer with the ATM machine's idle time after observation of the similar and continuous trend on weekdays and weekends separately.

The next step i.e.utilize queuing model to examine the number of customers in the system to the customers wait before being served, thereby it proposes a new ATM service from any of these banks or other than the existing banks based upon the service required from the customers. A suitable simulation technique is also formulated to reduce idle time of servers and waiting time of customers for any bank having ATM facility.

3.2 METHODS

3.2.1 WATERFALL MODEL

the classical waterfall model is the basic **software development life cycle** model. the waterfall model is a software development model used in the context of large, complex projects, typically in the field of information technology. it is characterized by a structured, sequential approach to project management and software development.

the waterfall model is useful in situations where the project requirements are well-defined and the project goals are clear. it is often used for large-scale projects with long timelines, where there is little room for error and the project stakeholders need to have a high level of confidence in the outcome.

Phases of Classical Waterfall Model

1. **Requirements Gathering and Analysis:** The first phase involves gathering requirements from stakeholders and analyzing them to understand the scope and objectives of the project.
2. **Design:** Once the requirements are understood, the design phase begins. This involves creating a detailed design document that outlines the software architecture, user interface, and system components.
3. **Implementation:** The implementation phase involves coding the software based on the design specifications. This phase also includes unit testing to ensure that each component of the software is working as expected.
4. **Testing:** In the testing phase, the software is tested as a whole to ensure that it meets the requirements and is free from defects.
5. **Deployment:** Once the software has been tested and approved, it is deployed to the production environment.
6. **Maintenance:** The final phase of the Waterfall Model is maintenance, which involves fixing any issues that arise after the software has been deployed and ensuring that it continues to meet the requirements over time.

3.2.2 NORMALIZATION:

Normalization is the process of organizing data in the database in such a way that it handles the transactions in an efficient manner. There are rules to achieve normalization. Each rule is known as “normal form”.

To understand different normal forms, let’s take an example of a Students data. We haveseveral students who are enrolled in one or more courses which are taught by one or more teachers.

A raw form of such data is shown below:

Student Id	Course 1	Course 2	Teacher	Teacher Room
101	O123	P124	Edward	409
102	O123	P124	Hillary	410

First Normal Form (FNF): The fundamental principles of storing data in 1st Normal Form are-

1. Eliminate repeating groups of data in each table.
2. Create a separate table of each set of related data
3. Identify a primary key in table

Second Normal Form (2NF): The attributes in a table should be functionally dependent on the primary key. There should be no redundancy.

Third Normal Form (3NF): The attributes in a table should be dependent “only” on the primary key. there should be no inter-dependency.

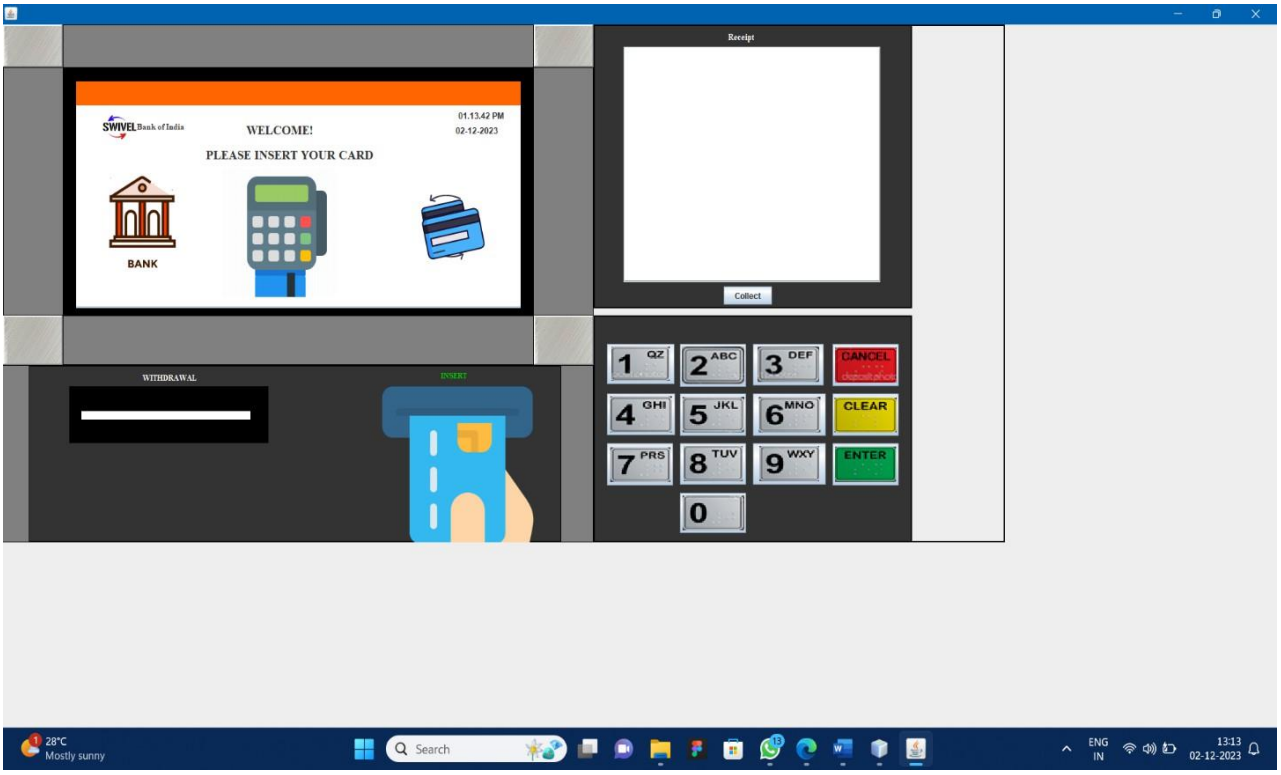
CHAPTER NO 4

FINDINGS AND RESULT INTERPRETAION

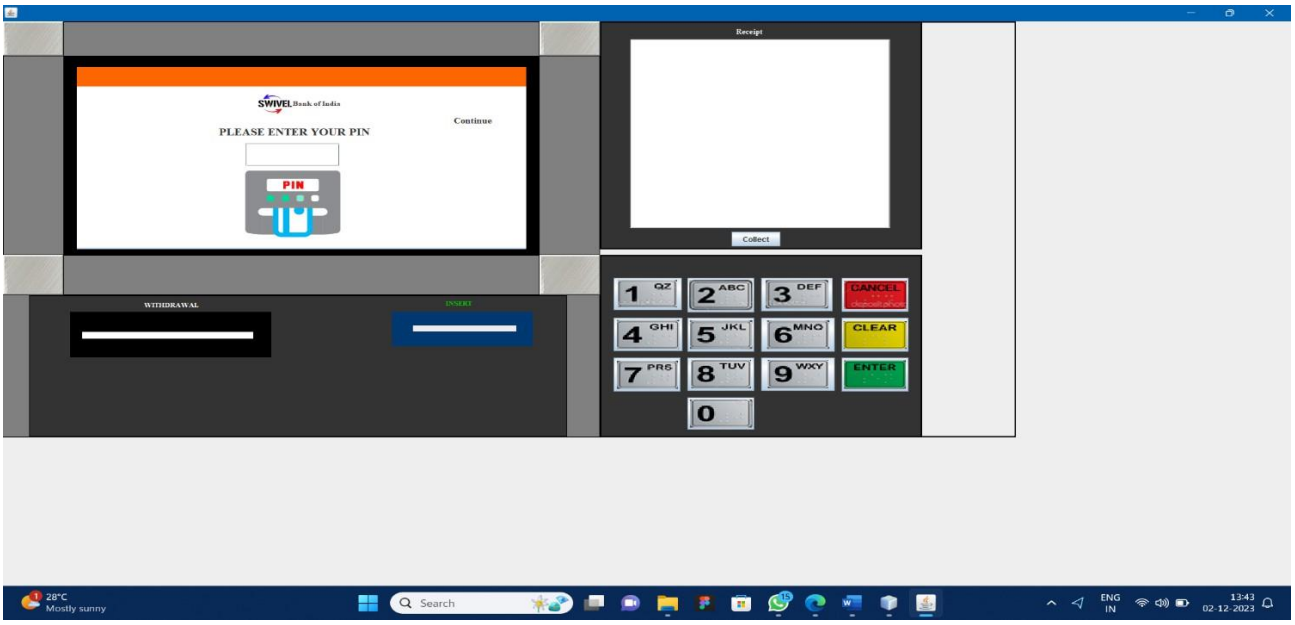
OUTPUT SCREENSHOTS

MAIN DISPLAY OF THE ATM SIMULATOR:

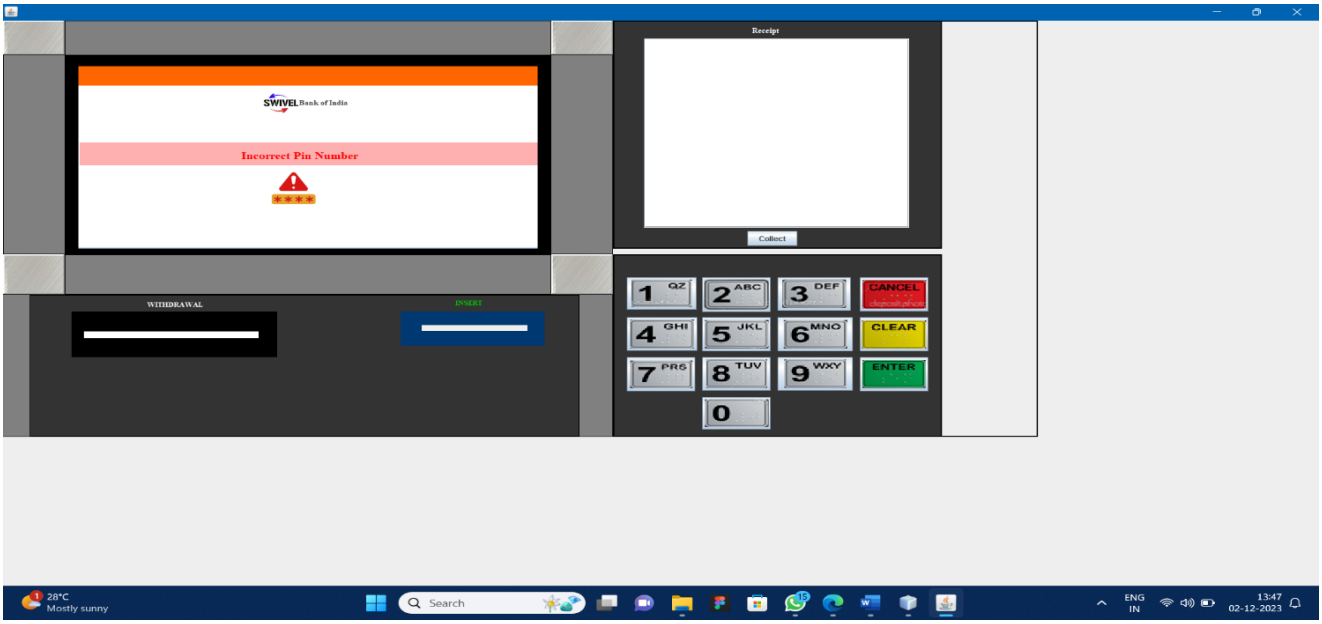
- Below screen is the main display of the ATM Management system.



- Once the user insert the ATM card in the machine it will ask the user to enter the PIN which has been set by the customer.



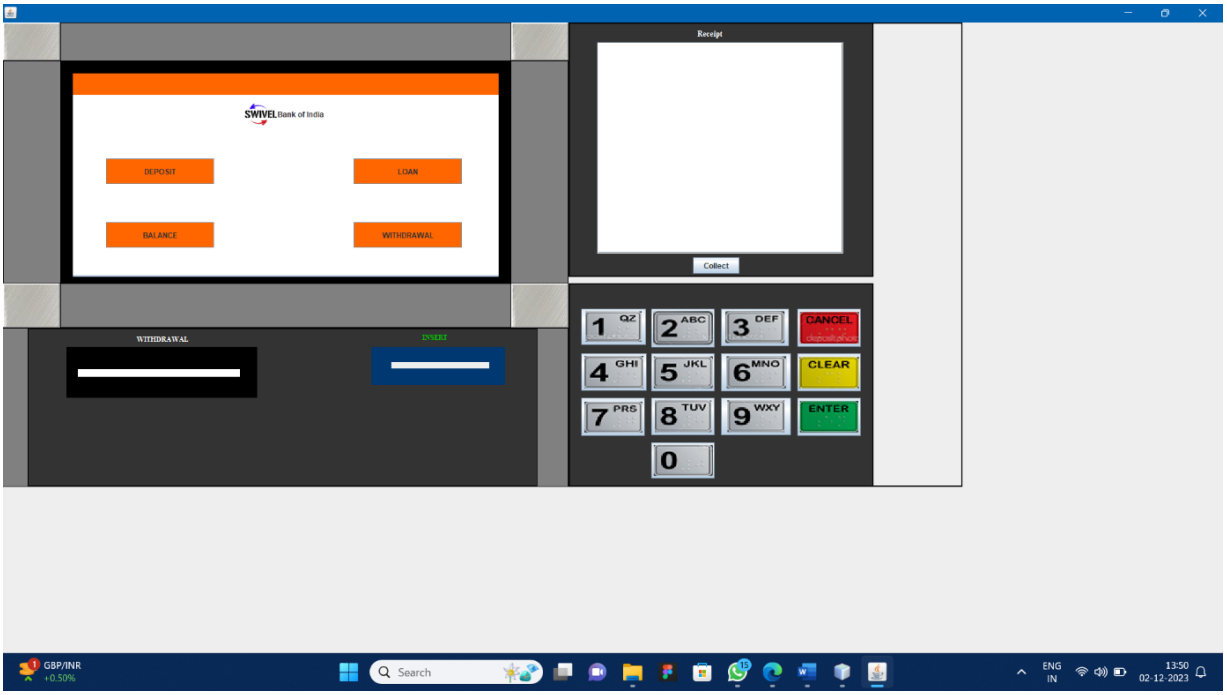
- If the user entered the wrong pin then it will show the error message as "Incorrect Pin Number"in the main display and to home page.



- If the user entered the correct pin then it will go the page where it will allow theuser to select the module that they need to use.

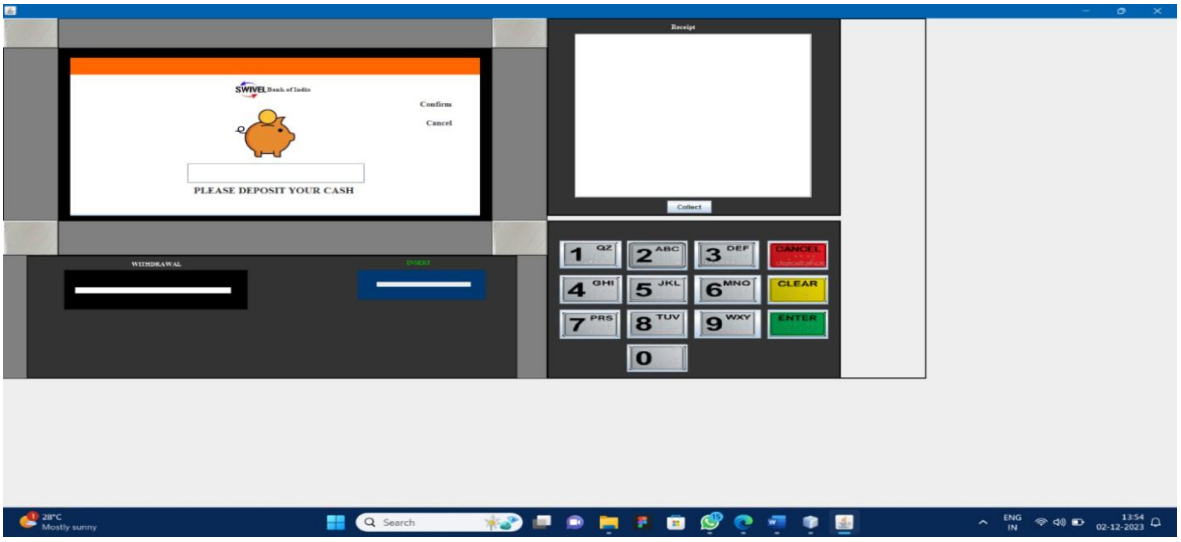
- As we said earlier it will display the four modules.

1. Deposit
2. Balance inquiry
3. Withdrawal
4. Loan - to make a selection.

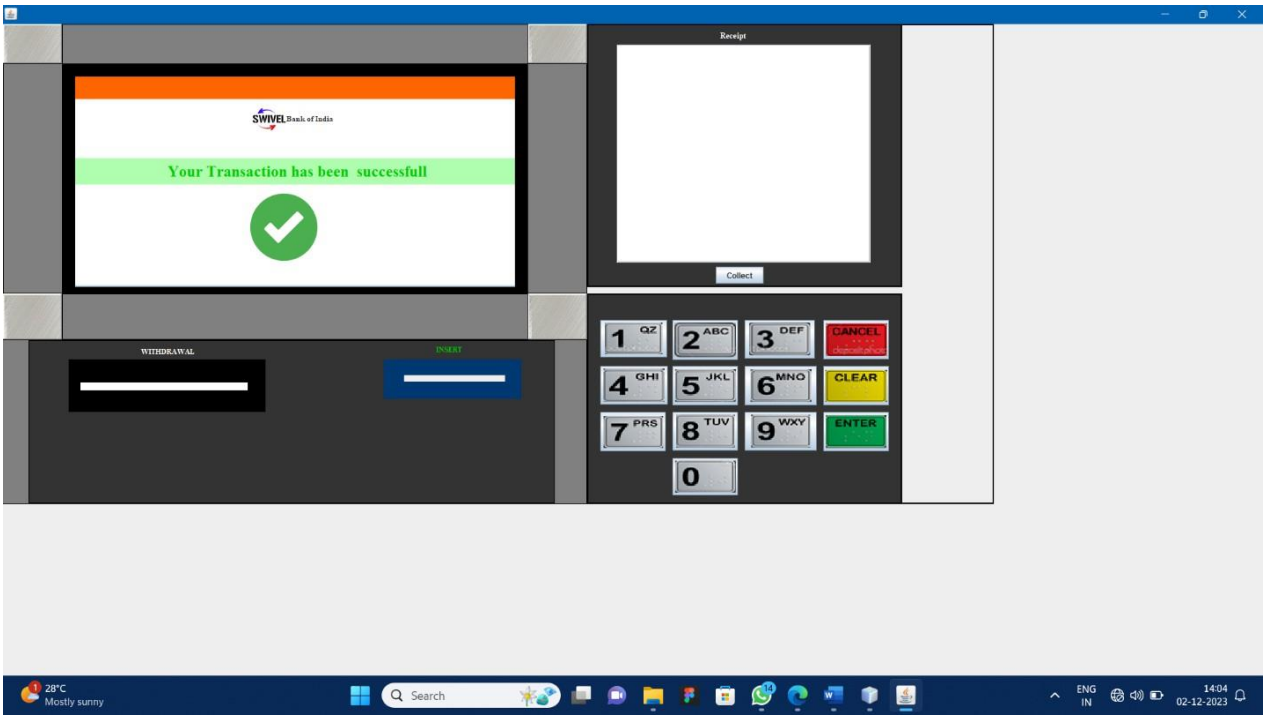


1. DEPOSIT:

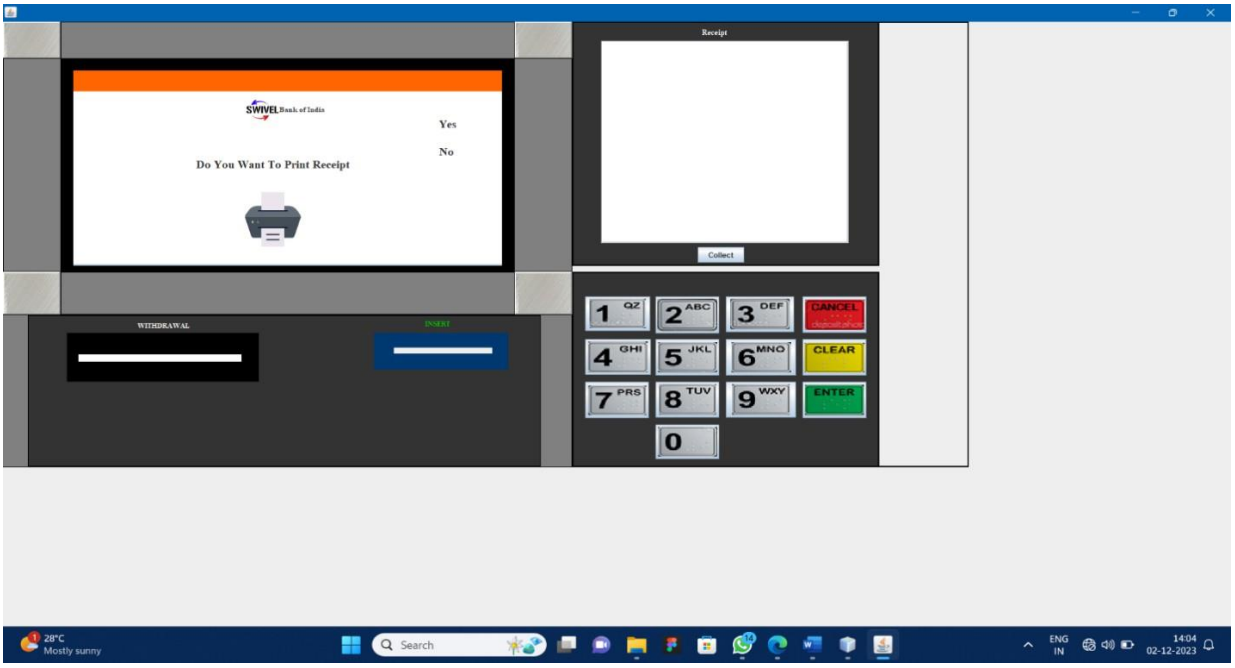
- If they touch and select Deposit as their option it will ask the user to enter the amount that needsto be deposited on that particular account.



- Once you enter the deposit value and gives Confirm then it will show the success message as" Your transaction has beensuccessful" in the main display.

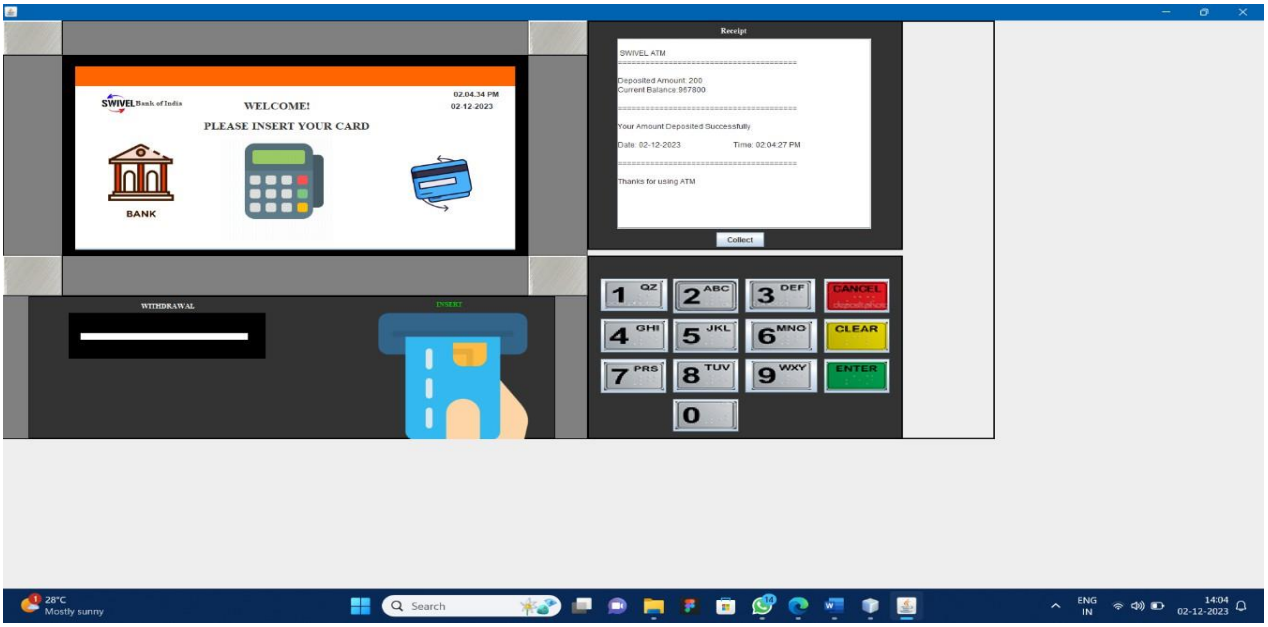


- It will ask whether you want to print the receipt If yes it will print the receipt for theuser.

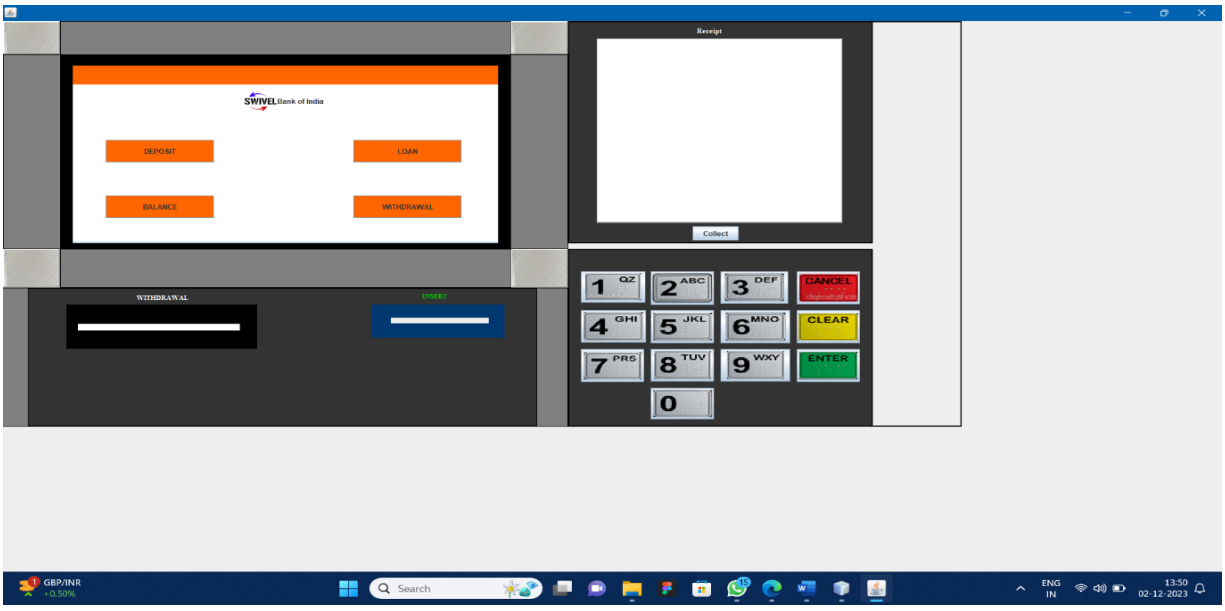


- If select the “YES “Option it will print the receipt.

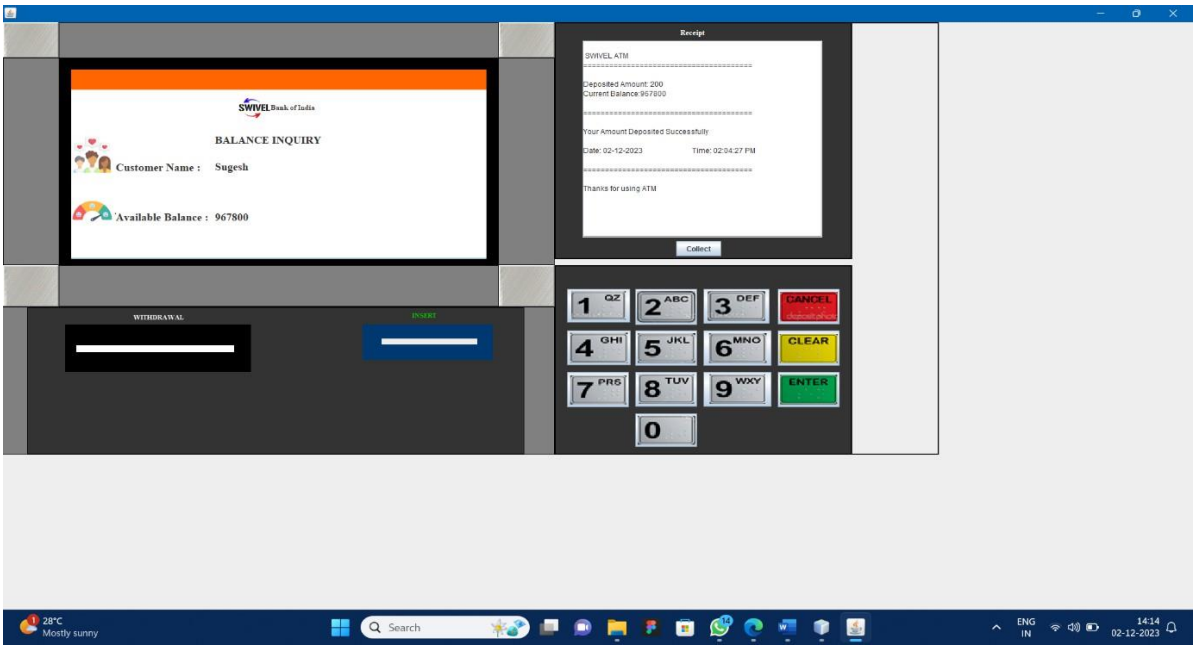
- And also it will ask the user to take out the card and display the messages “ Thank youVisit again” in the home page. if they choose No it will return to home page it will askthe user to take out the card and display the messages “Thank you Visit again”.



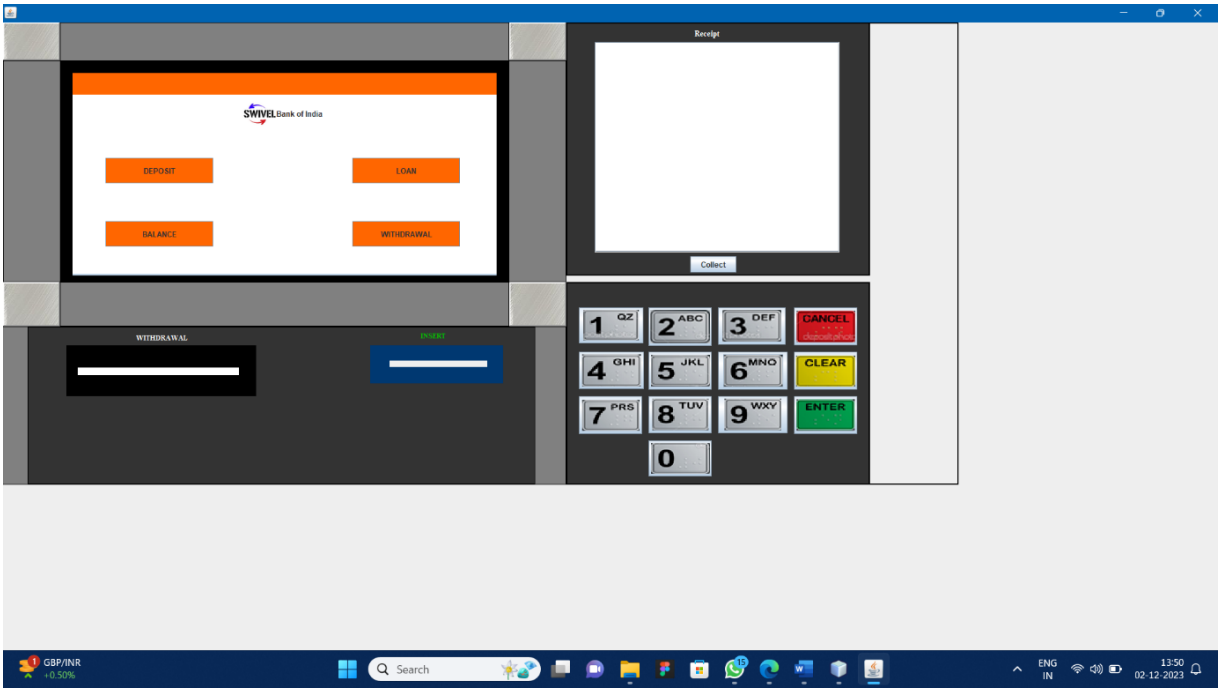
2. BALANCE:



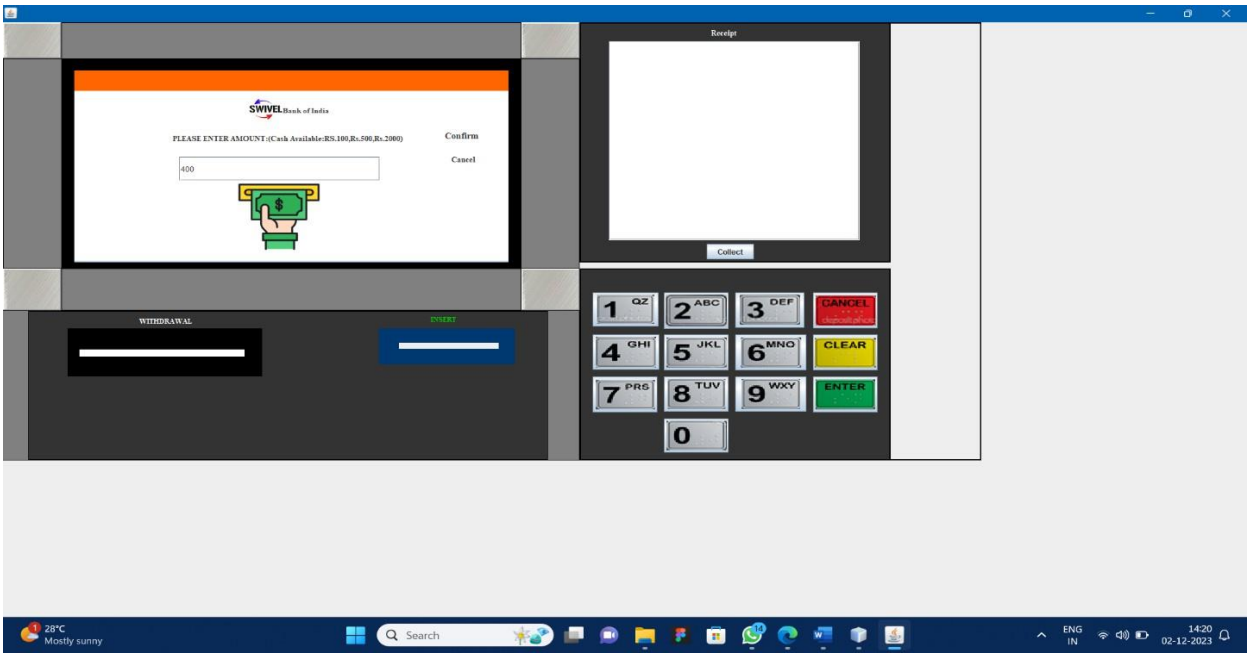
- If they select the option of Balance it will display the customer name and the balancein their account in the display.



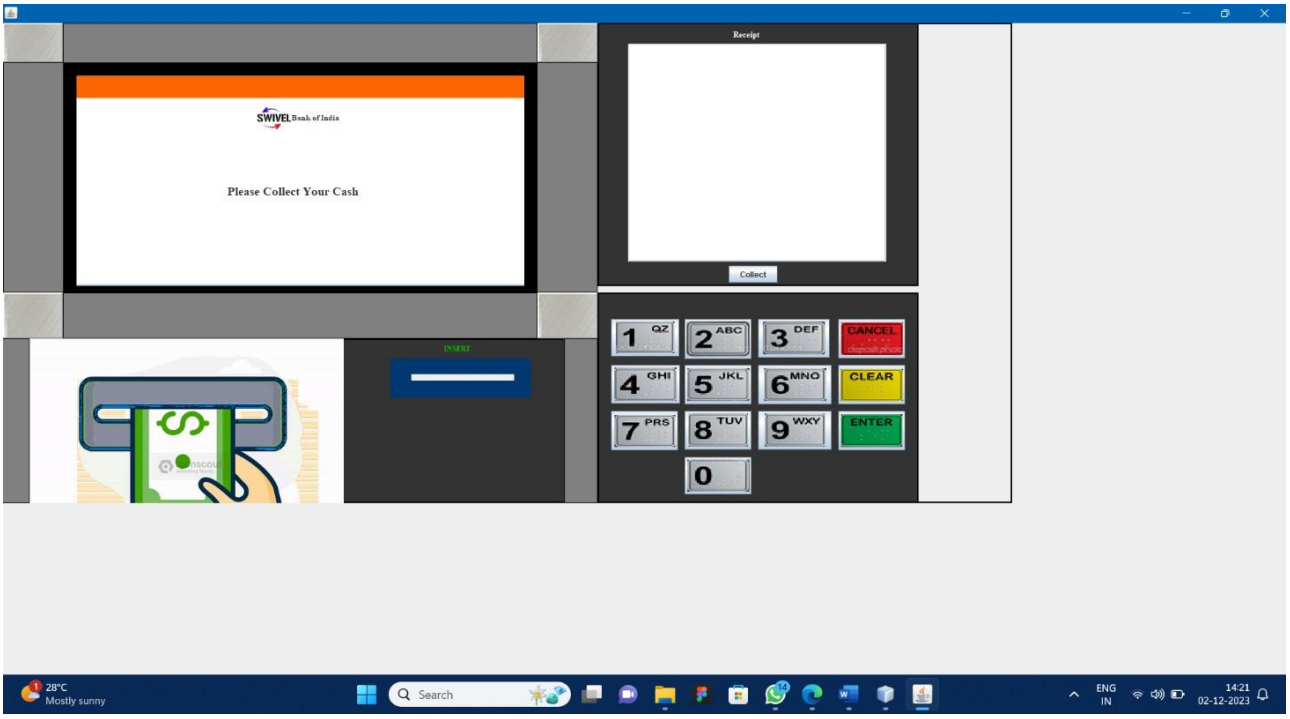
3. WITHDRAWAL:



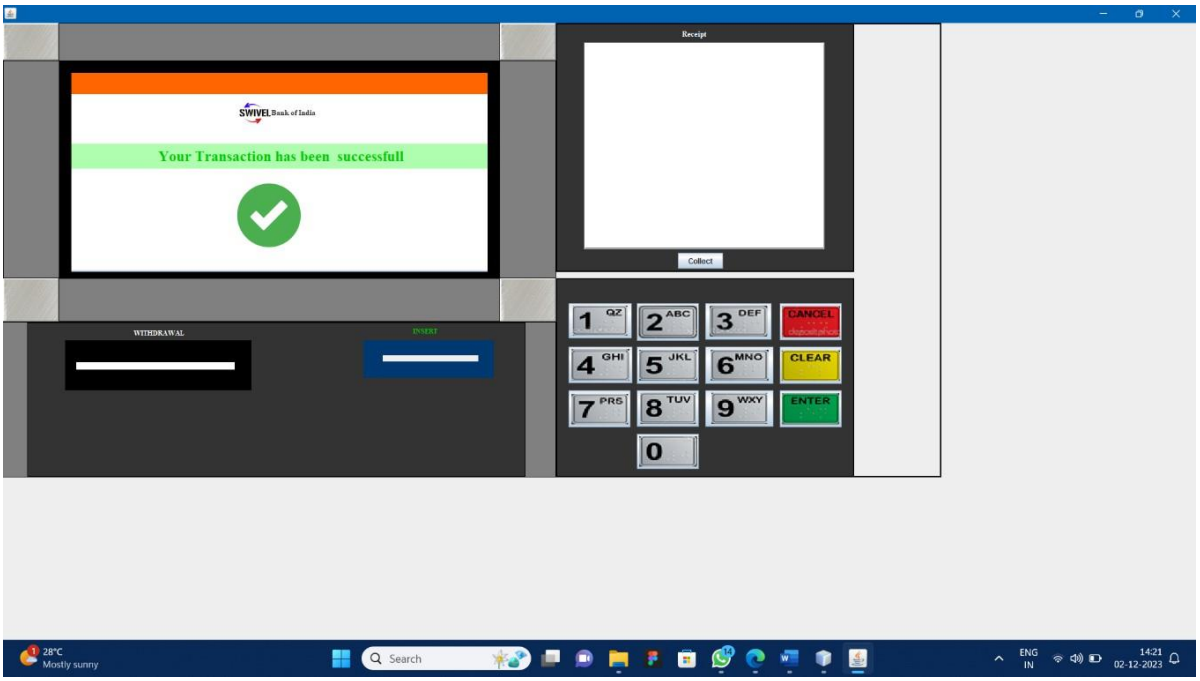
- If they the select the option withdrawal it will ask the user to enter the amount need tobe withdrawn from the account once they entered the amount and click to confirm.



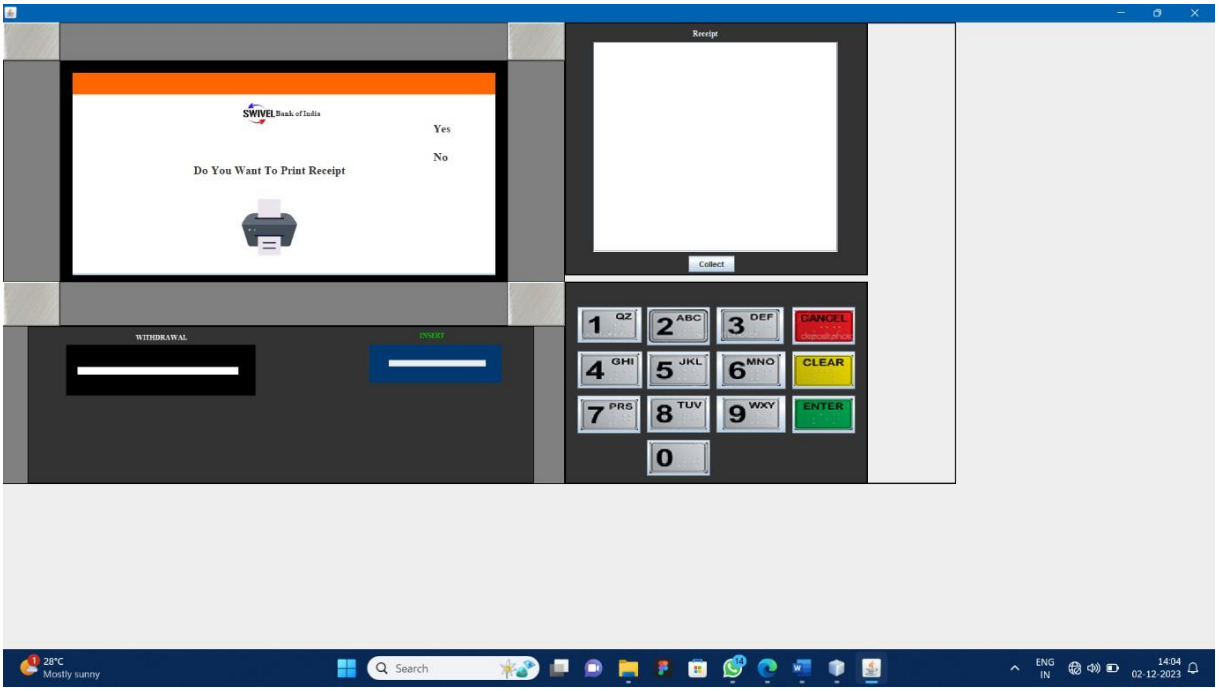
- It will give the amount and it will show message as "**Please collect your cash**".



- The amount has been collected by the user it will show message as "**your Transactionhas been successful**".



- It will ask the user whether they need to print their receipt.



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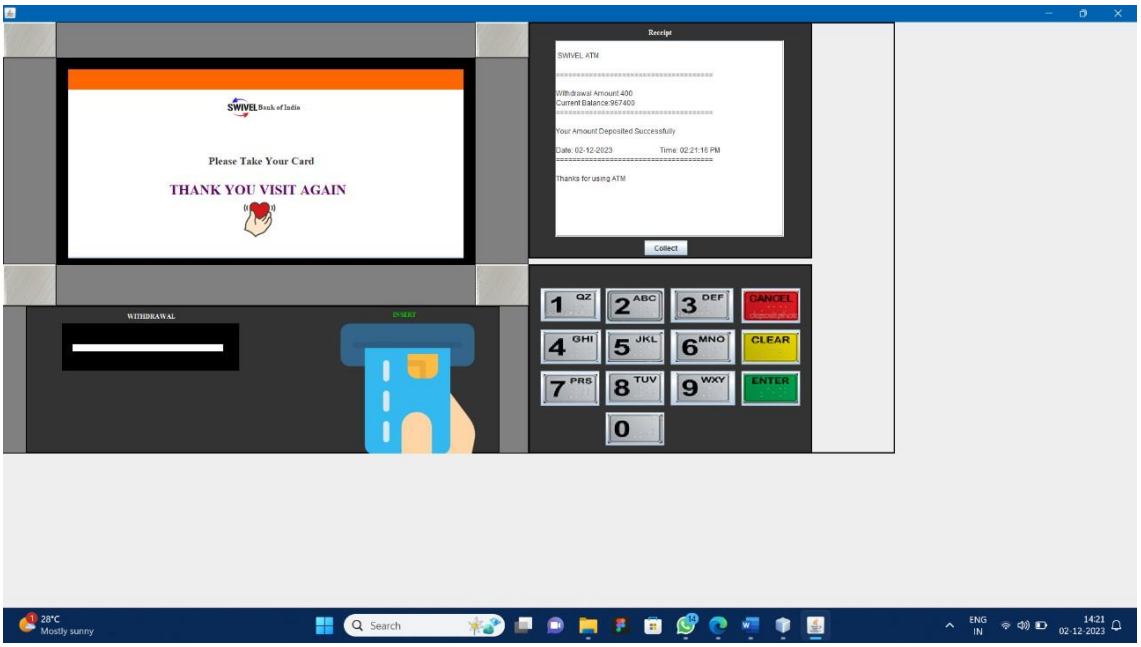
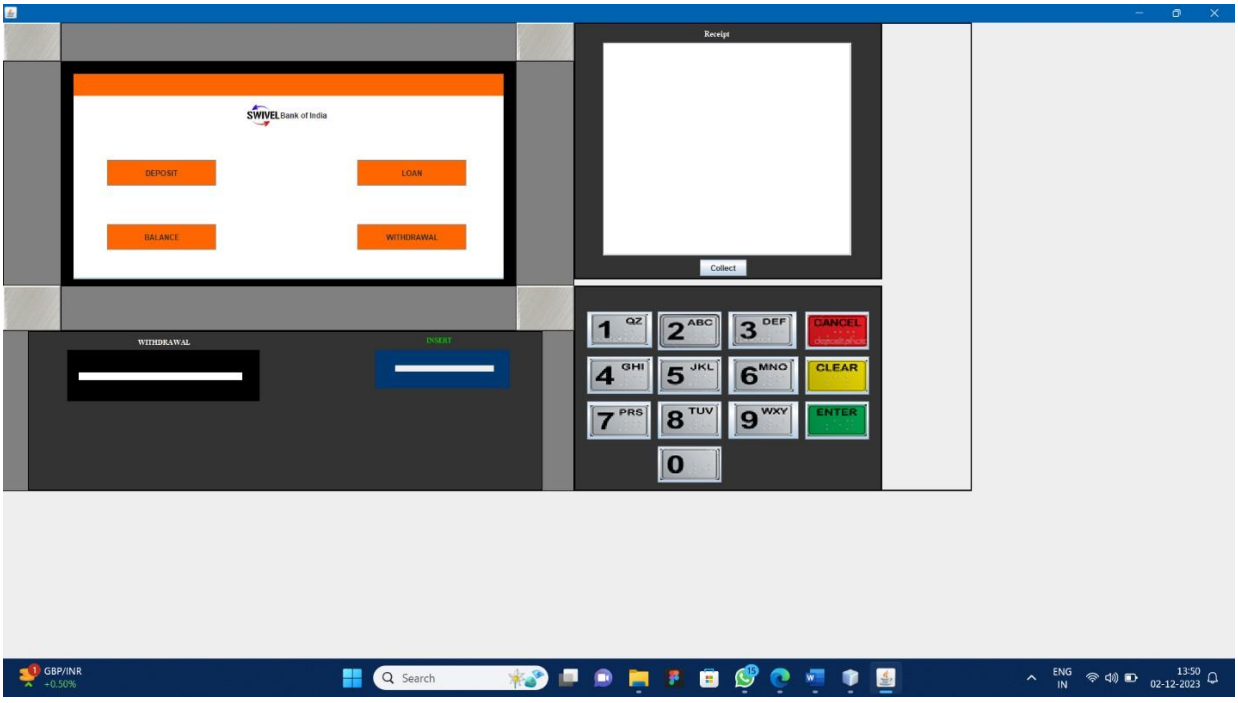
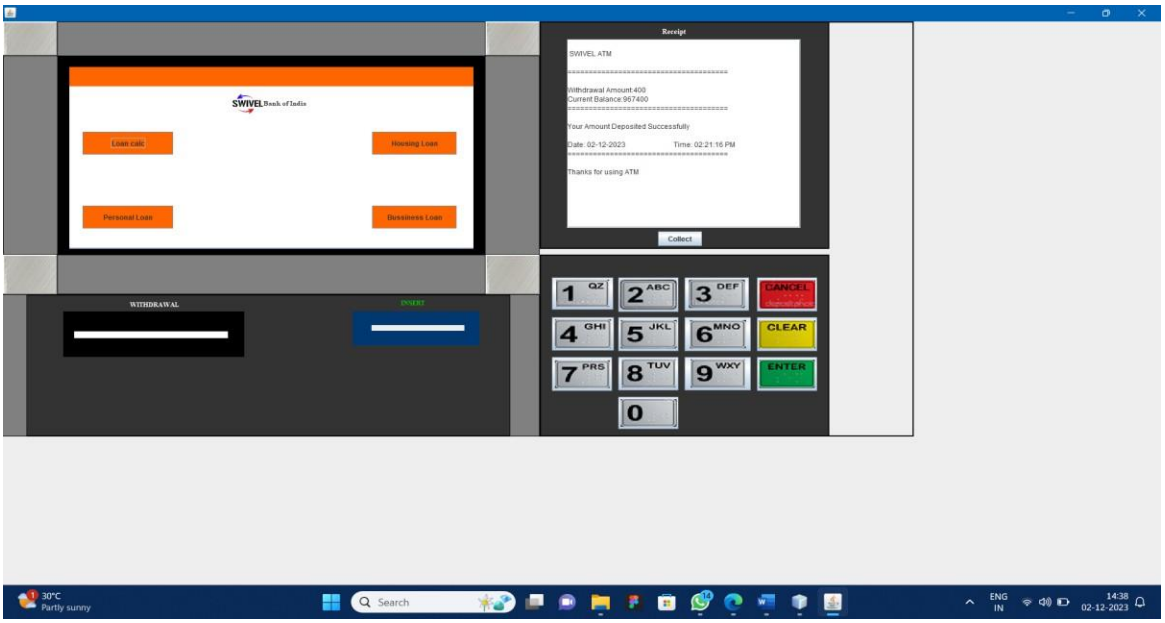


1. LOAN:

- If they choose option as Loan, It will ask them to choose the type of Loan user preferred to avail,

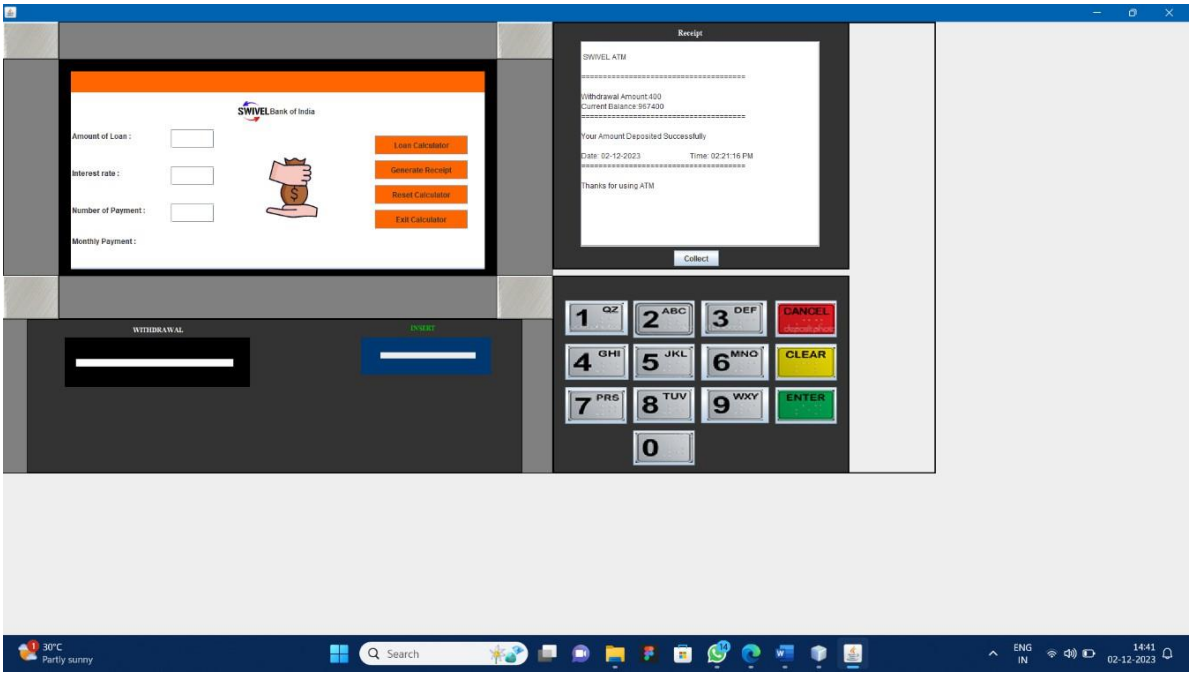




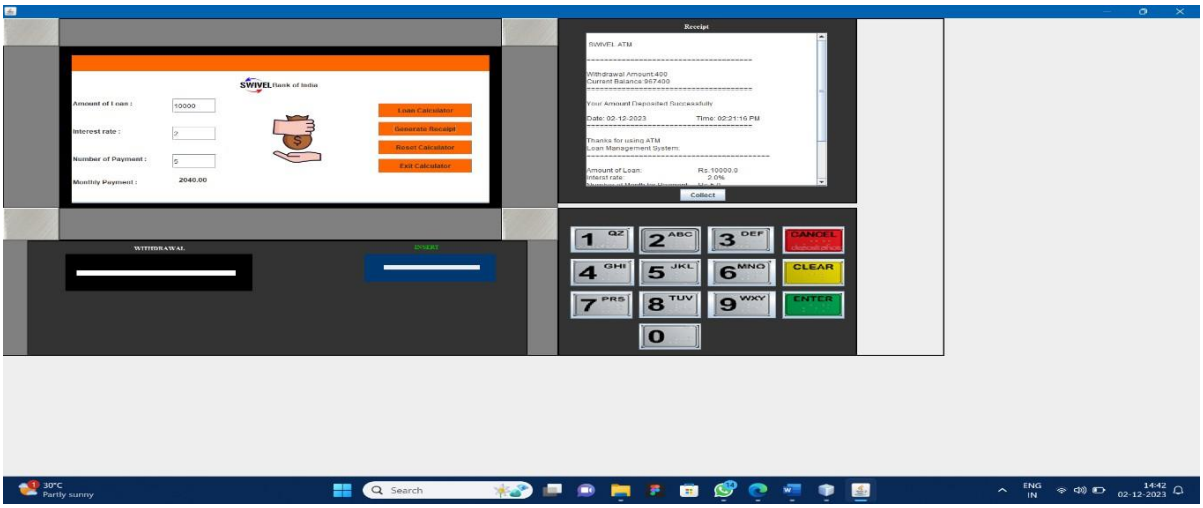
- They are Various loan option

1. Loan Calculator.
2. House Loan.
3. Personal Loan.
4. Business Loan.

- If the user choose **Loan calculator,**



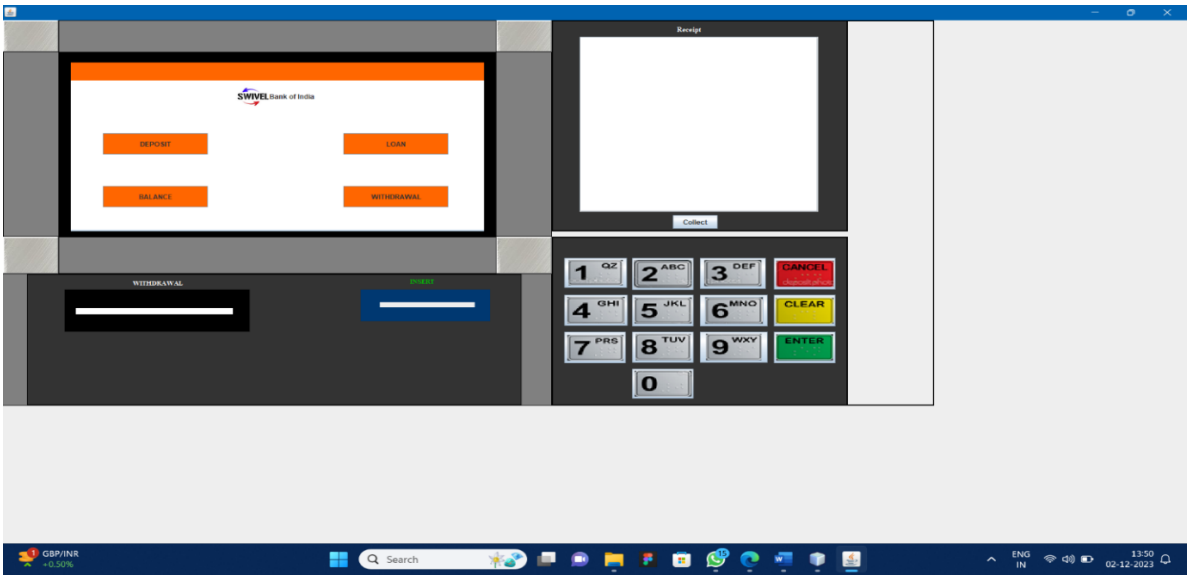
- It will ask the user to enter how much amount they want as a loan, the percentage ofinterest and the Number of payments.

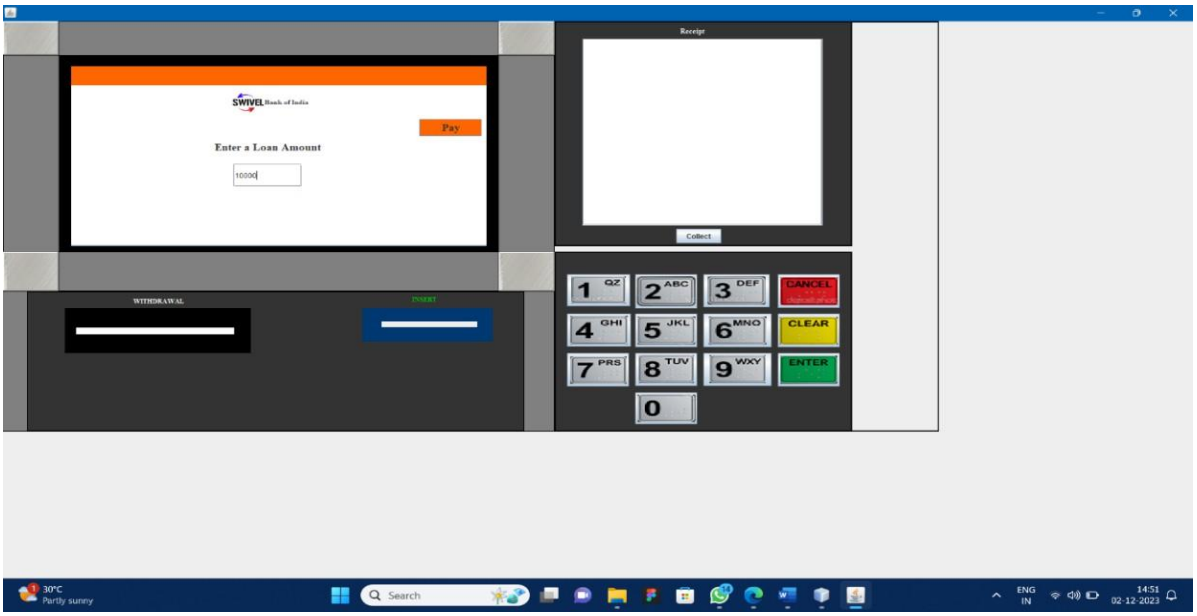


- And click on Loan Calculator button so that the application will calculate the amount automatically and display it on the Monthly payment tab.
- Also we have receipt option here to print the calculation for their reference.
- We have Reset option in the same page this will clear all the fields in that page
- If they give exit it will return to home page.

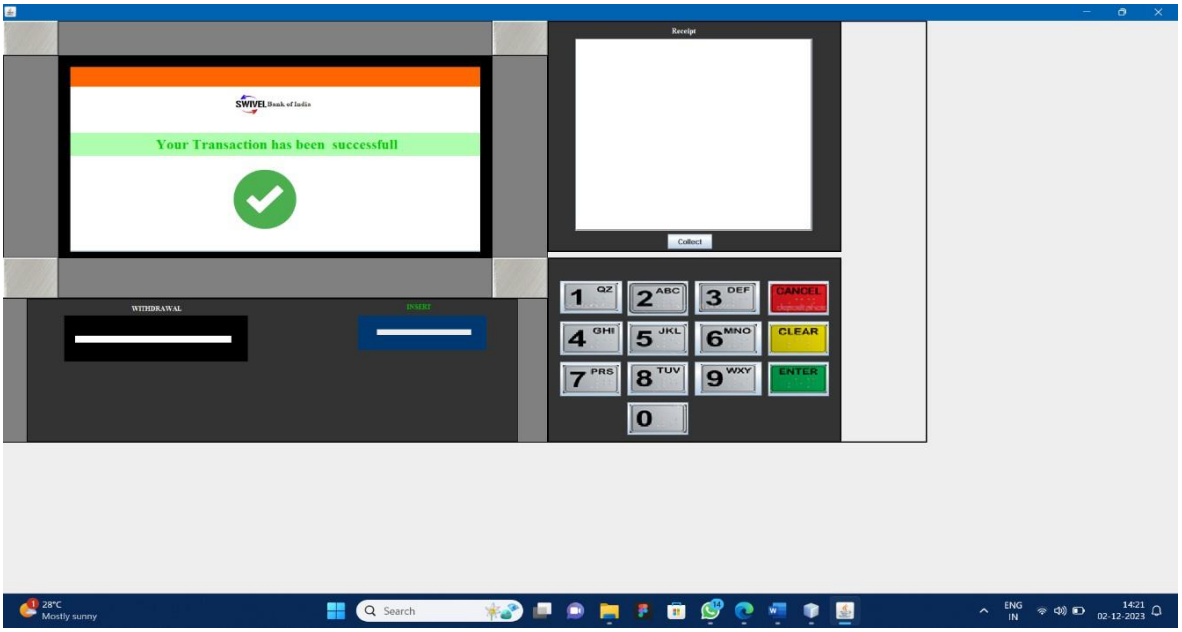
HOUSING LOAN:

- If they choose House Loan ,

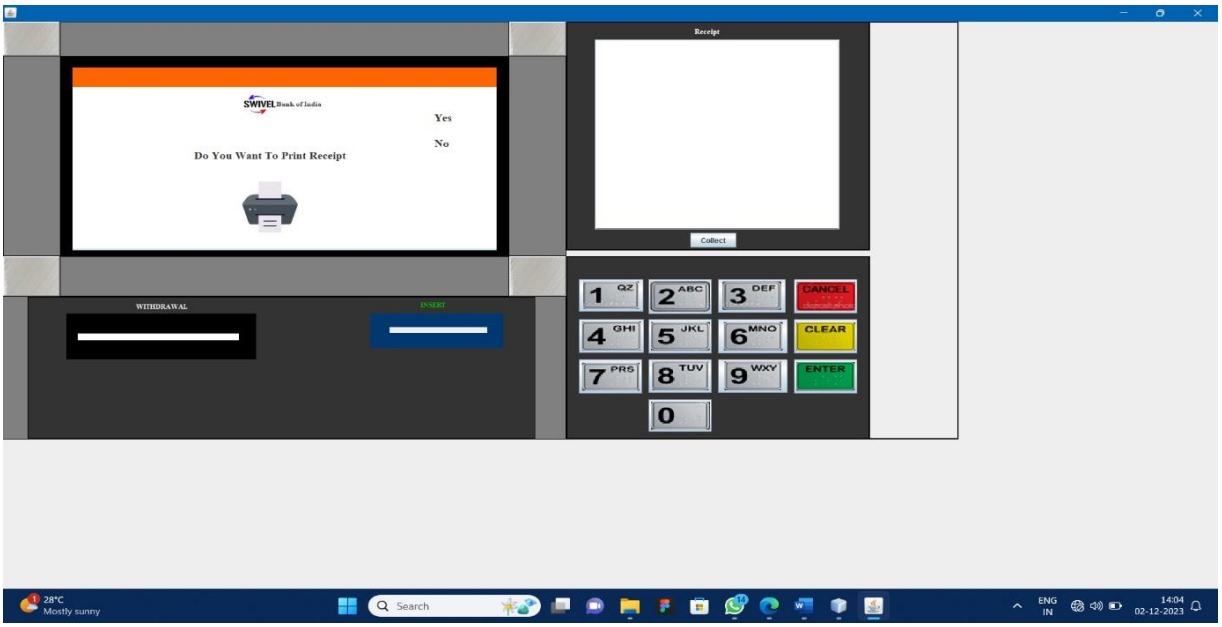




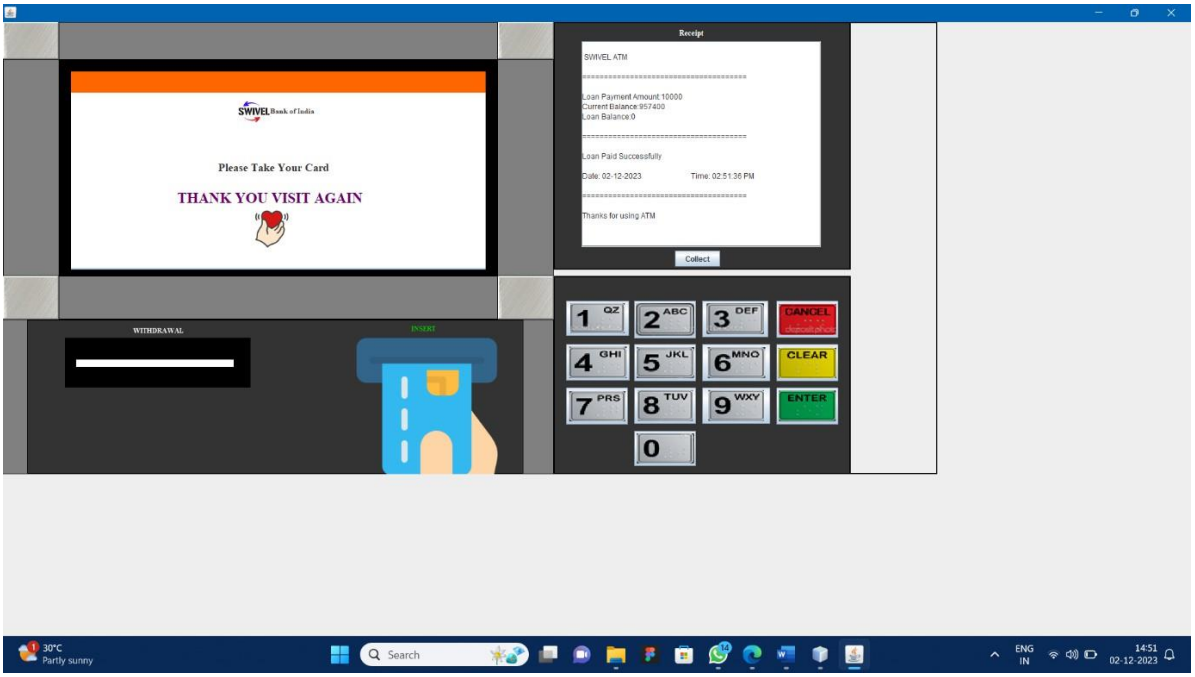
- The due amount will get debited and it will show message as “your Transaction hasbeen successful”.



- It will ask the user whether they need to print their receipt if they click yes it will printthe receipt.

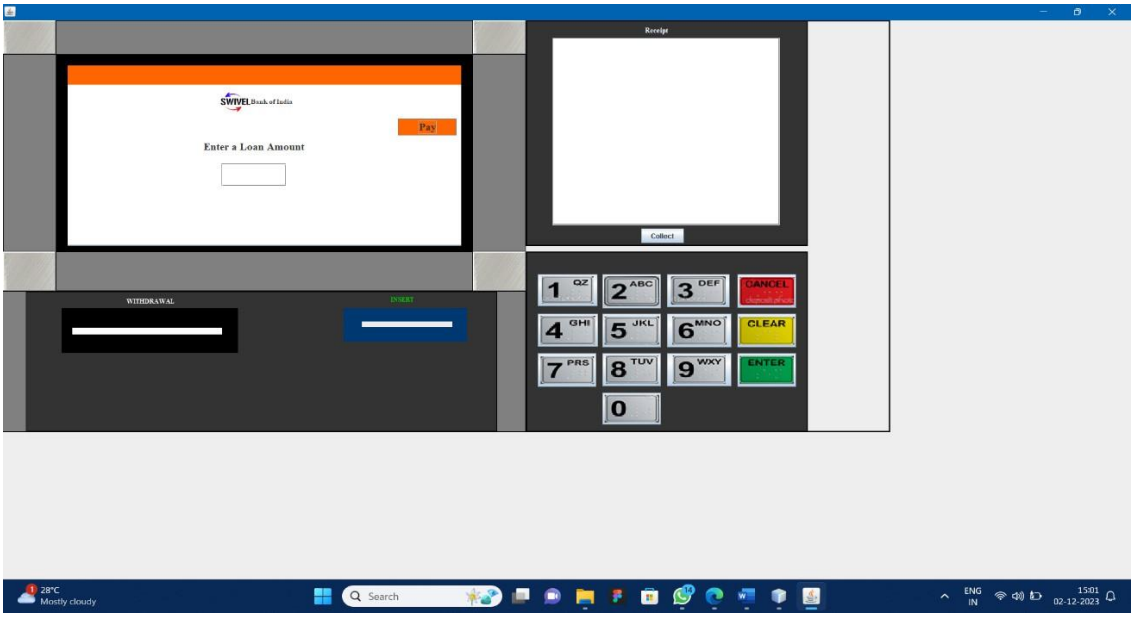


- Ask the user to take out the card and also display the messages " Thank you Visit again"in the home page.
- If they click No it will ask the user to take out the card and display the messages " Thankyou Visit again" in the home page.

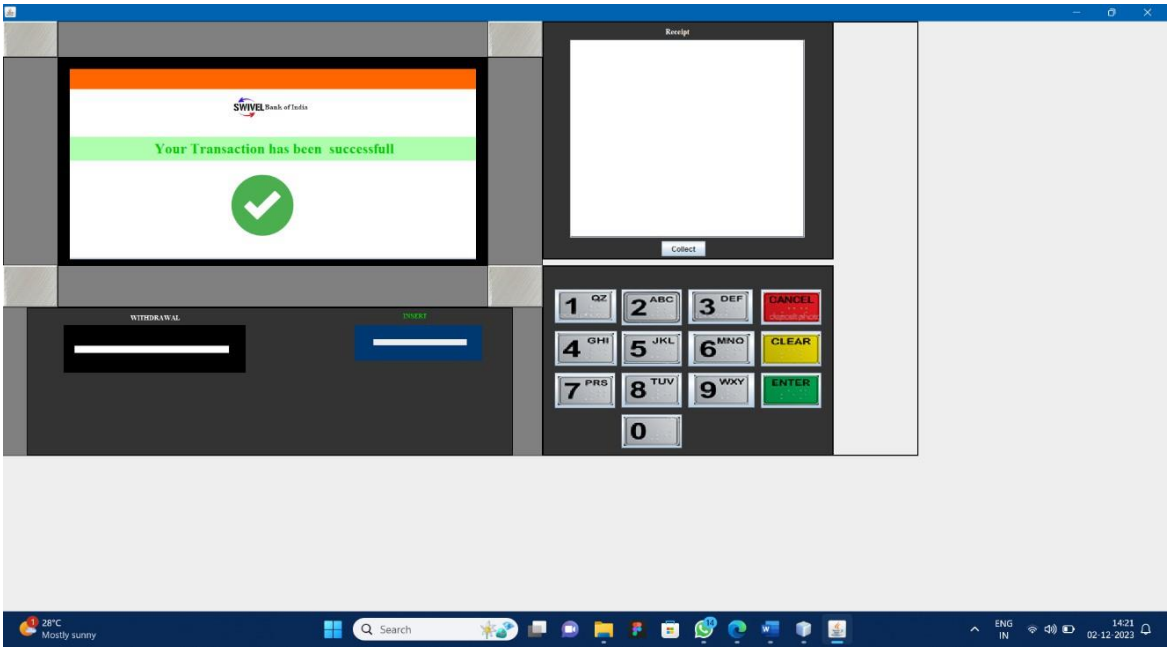


PERSONAL LOAN:

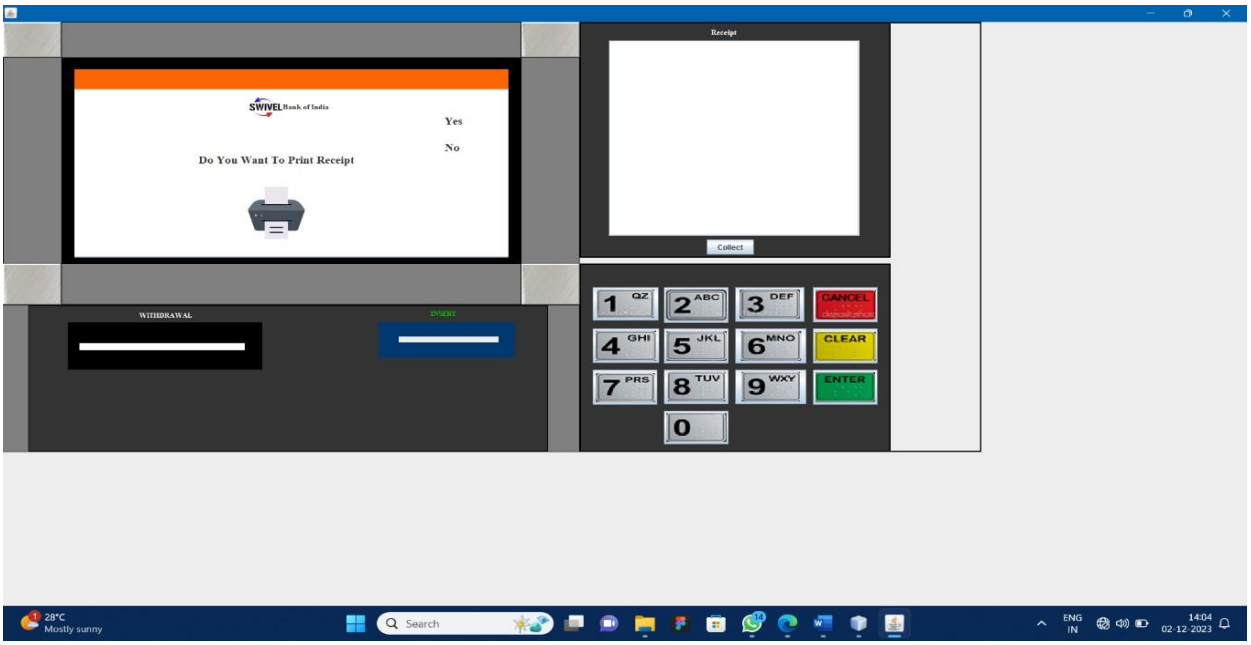
- If they choose Personal Loan option



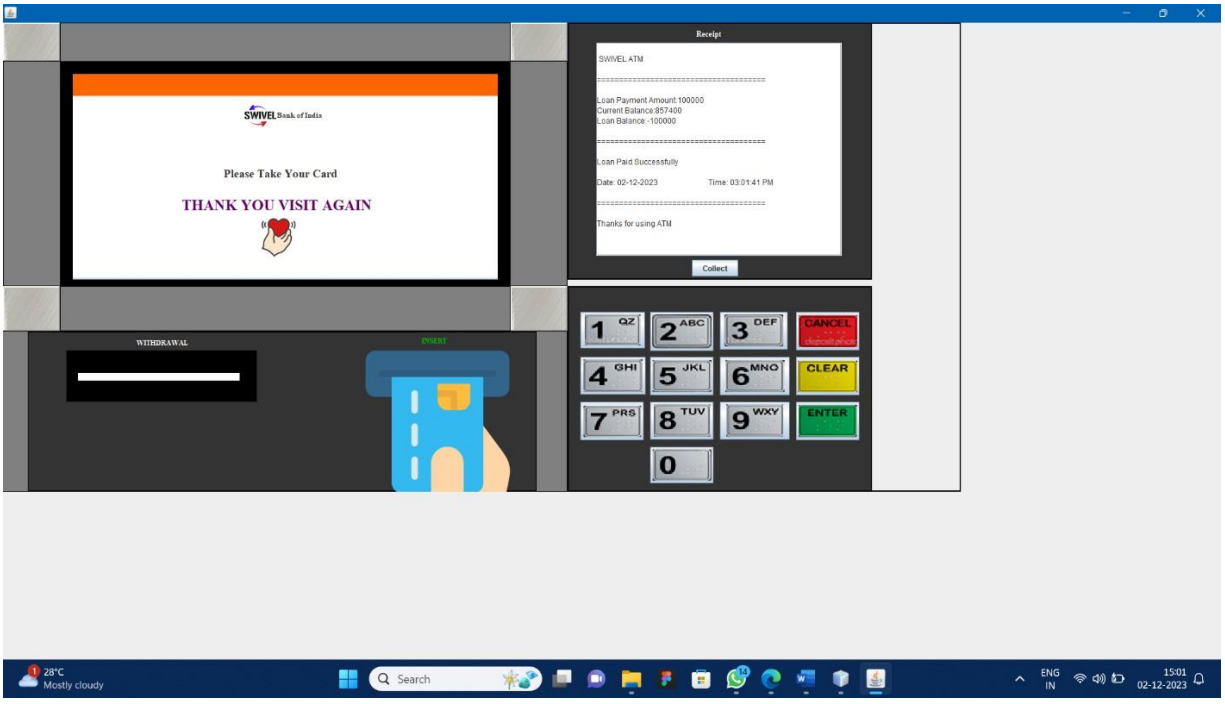
- It will ask the user to enter the loan amount that need to be paid once click pay option.
- The due amount will get debited and it will show message as "your Transaction hasbeen successful".



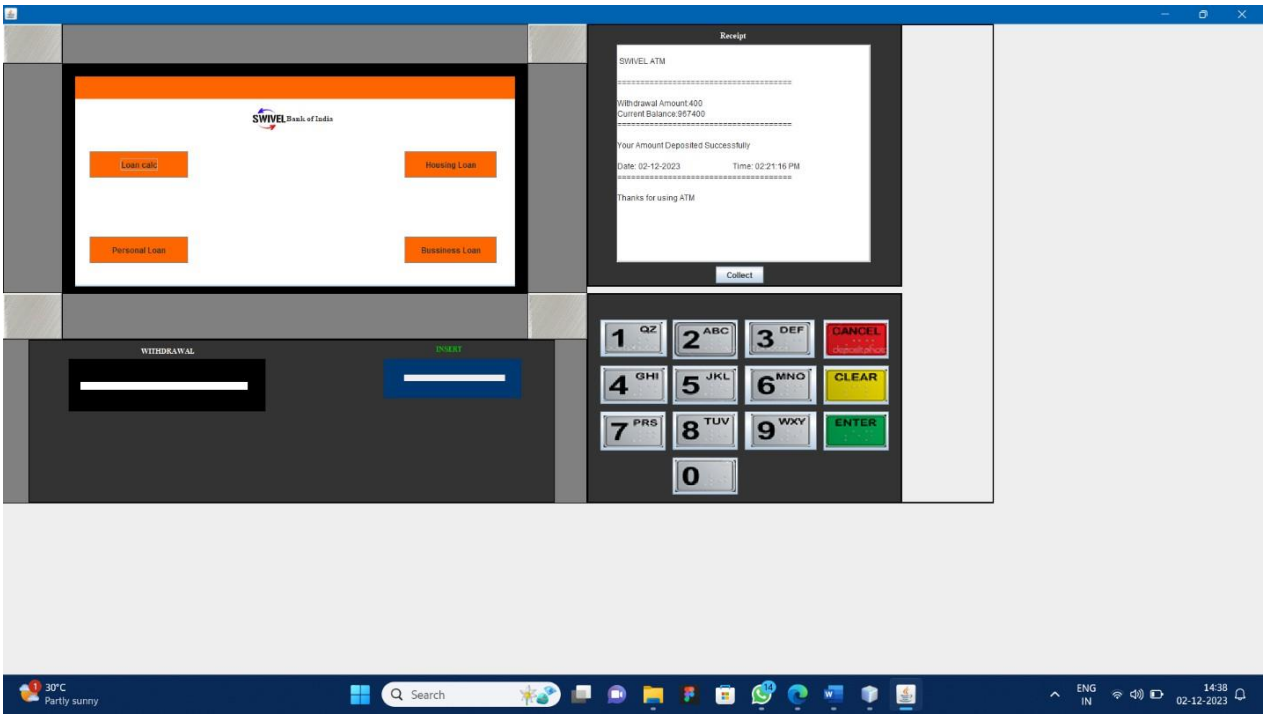
- It will ask the user whether they need to print their receipt if they click yes it will printthe receipt.



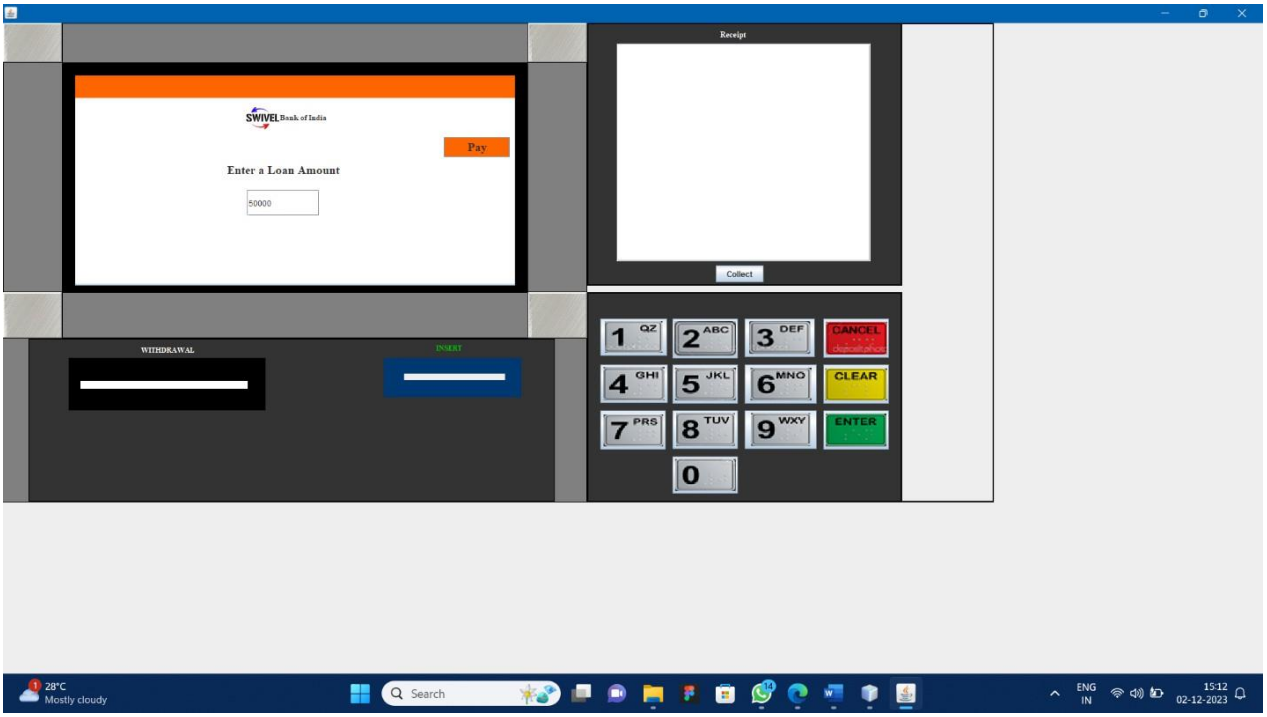
- Ask the user to take out the card and also display the messages “Thank you Visit again”in the home page.



BUSINESS LOAN:

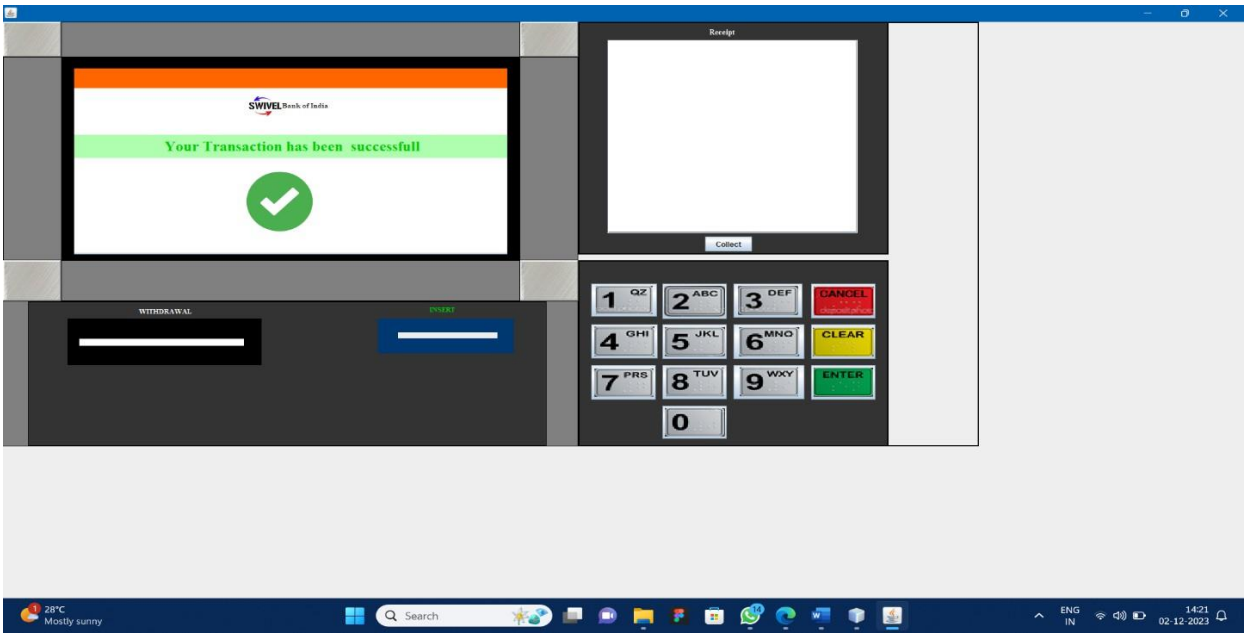


- It will ask the user to enter the loan amount that need to be paid once click pay option.

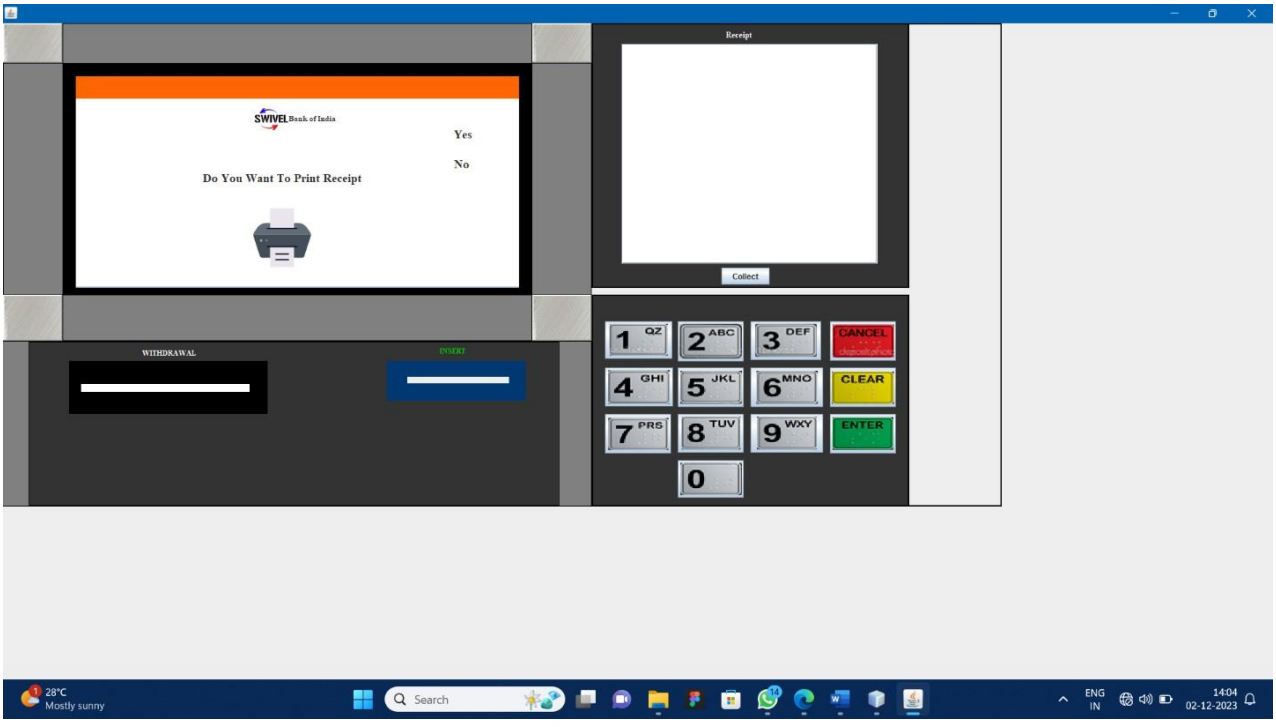


- The due amount will get debited and it will show message as “your

Transaction hasbeen successful".

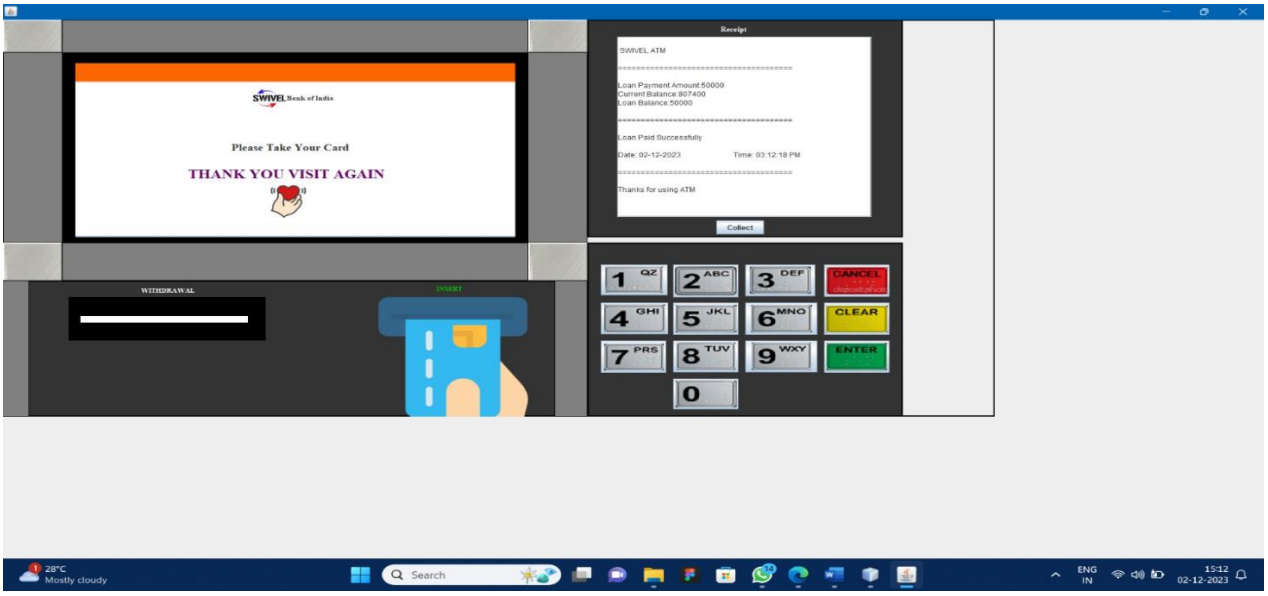


- It will ask the user whether they need to print their receipt if they click yes it will printthe receipt.



- Ask the user to take out the card and also display the messages "Thank you Visit again"in the home page.

- If they click No it will ask the user to take out the card and display the messages " Thankyou Visit again" in the home page.



CHAPTER NO 5

CONCLUSION

In conclusion, Banks are now introducing so many ATM's around the globe. The commercial purpose of ATM is to meet the demands of several people like students service man, business man and general people. Now its also preferred by the blind man also. The popularity of ATM machineis now increased, because people can avoid theft by keeping lump sum money at their homes. Thus, ATM is one of the gift from the inventor to humanity and it is the easiest way of depositing and withdrawing money. Transaction is possible at any time in ATM's, that is why in India some people called ATM as "all time money". Hence it can be concluded that the project titled ATM Management is safe, fast, reliable, convenient and any time accessible money machine.

FUTURE ENHANCEMENTS:

- OTP generation.
- Email and mobile alerts.
- Active Tracing of Fraudulent activities
- Security upgrades like Visual Sensors with burglar alarms, Biometric Identification procedures etc.

ADDITIONAL FEATURES:

- Loan calculator.
- Housing Loan.
- Personal Loan.
- Business Loan payment.

CHAPTER NO 6

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