A

PROJECT REPORT

ON

"FINGERPRINT BASED ATM SYSTEM"

SUBMITED TO

SAVITRIBAIPHULE UNIVERSITY OF PUNE

IN THE PARTIAL FULLFILMENT OF THE

DEPARTMENT OF BACHELOR OF COMPUTER SCIENCE

RAYANTSHIKSHANSANSTHA'S

R.B.Narayanrao Borawake College,Shrirampur

SUBMITED BY

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AND

MISS.PATANI NEETI PANKAJ

UNDER THE GUIDANCE OF

PROF.RAUT.R.B.

IN THE

T.Y.BSc.(Computer Science)

2022-2023

Rayatshikshansanstha's

"EDUCATION THROUGH SELF HELP IS OUR MOTTO"

-KARAMVEER RAYANT SHIKSHAN SANSTHA'S

R.B.NARAYANRAO BORAWAKE COLLEGE,

SHRIRAMPUR-413709,Dist-AHMEDNAGAR

CERTIFICATE

DEPARTMENT OF COMPUTER SCIENCE

This is to certify **MISS.RAUT ASHWINI VILAS** and **MISS.PATANI NEETI PANKAJ** of T.Y.BSC(Computer Science)has satisfactorily carried out the required project work according to the the syllabus of SAVITRIBAI PHULE UNIVERSITY during the academic year 2022-2023.This project represents the benefited work.

PROJECT GUIDE HEAD OF DEPT.

INTERNAL EXAMINER EXTERNAL EXAMINER

Date:

ACKNOWLEDGEMENT

It is distinct honor and proud privilege to acknowledge with our attitude , the keen interest taken by **"Prof .Raut R.B"** and inspiring suggestions and constant supervision and encouragement who had made it possible of pursue and complete this project of – **"Fingerprint Based ATM System"** effectively.

We would take this opportunity to express our profound series in definers to all the member of staff of their constant help.

It has given us Immense Pleasure to associate ourselves with through provoking and absorbing. The concept of project we acknowledge with courtesy to **Prof. Mr. Shinde(Department of Computer Science)**. We are grateful to those who have directly and indirectly co-operated to finish this project work.

We greatly appreciate our staff members for their keen interest and numbers of fruitful suggestion at various stages during the completion of this endeavour , which help to reach the depth of this work.

We would also like to thank to our friends who always had helping hand whenever needed and also for their co-operation moral support for doing this project.

By, Date:

Raut Ashwini Vilas

Patani Neeti Pankaj.

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ABSTRACT

Our Project is to develop the technique for fingerprint authentication in ATM. This target can be mainly decomposed into image prepossessing, feature extraction and feature match. For each sub-task, some classical and up-to-date methods in literature are analyzed. Based on the analysis, an integrated solution for fingerprint recognition and authentication is developed for demonstration. Our demonstration program is coded in ASP.NET & MATLAB. For the program, some optimization at coding level and algorithm level are proposed to improve the performance of my fingerprint authentication system. These performance enhancements are shown by experiments conducted upon a variety of fingerprint images. Also, the experiments illustrate the key issues of fingerprint recognition that are consistent with what the available literatures say.

INTRODUCTION TO THE SYSTEM:

- **INTRODUCTION:**

Fingerprint Based ATM System is a desktop application where fingerprint of the user is used as authentication. The fingerprint minutiae features are different for each human being so the user can be identified uniquely.

Instead of using ATM card Fingerprint based ATM is safer and secure. There is no worry of loosing ATM card and no need to carry ATM card in your wallet. You just have to use your fingerprint in order to do any banking transactions. The user has to login using his fingerprint and he has to enter the pin code in order to do further transactions. The user can withdraw money from his account. User can transfer money to various accounts by mentioning account number. In order to withdraw money user has to enter the amount he want to withdraw. The user must have appropriate balance in his ATM account to do transactions. User can view the balance available in his respective account.

- **PROBLEM STATEMENT:**

In present scenario, the traditional ATM System accepts only on the pin code security system enabling the other person rather than the owner to access the account easily .This ensure that the traditional ATM System is not fully secure.

- **THE PROPOSED SYSTEM:**

  The proposed system is an improvement of the existing system, and it does not require card and PIN to operate. The proposed system work with biometric fingerprint only, the customer uses fingerprint at ATM and if matched correctly, then all banks of the customer have account with appears, the customer will select the bank to transaction with, then select the account type with that bank, then chose to withdraw, check account balance and so on. Customer will now choose or select the bank he wants to withdraw money from and specify if the account is Current or Savings, this is a means of securing ATM transaction using biometric fingerprint.

- **OBJECTIVE AND PURPOSE:**

  The main objective of our project is to provide authorized identity and to design a more secure ATM system to propose authentication and verification process on the existing. ATM system to make secure and successful transactions.

- **THE EXISTING SYSTEM:**

  The existing ATM system authenticates transactions via the Fingerprint and Pin-based system. Thereafter it grants access to bank customers to several services such as cash withdrawal, account to account transfers, balance enquiry, etc,.The ATM system compares the PIN entered against the stored authorization PIN for every ATM users. If there is a match, the system authenticates die user and grants access to all the services available via the ATM. If there is a mismatch on the other hand, the user authentication process fails and the user is given two more opportunities to enter a correct PIN. If an incorrect PIN is entered for the third time, the card gets blocked and retained by the ATM.

- **SCOPE OF THE SYSTEM:**

  The scope of our project is to provide biometric security through fingerprint authentication in ATM application. The underlying principle is the phenomenon of “AUTHENTICATION” in this project we propose a method of fingerprint based on fingerprint algorithms.

- **NEED OF THE SYSTEM:**

  The need of the system is to provide extra security to the ATM system. Fingerprints are used to identify whether the person is genuine as the fingerprint and user-id are stored in the database. The security features were enhanced largely for stability and reliability of owner recognition.

SYSTEM ANALYSIS:

- **FEASIBLITY STUDY:**

A feasibility study is a high-level capsule version of the entire System Analysis and Design Process. The study begins by classifying the problem definition. Feasibility is to determine if its worth doing. Once the acceptance problem definition has been generated, the analyst develops a logical model of the system. A search for alternatives is analyzed carefully.

Feasibility study is the test of system proposal regarding its workability, impact on the organization, ability to meet user needs and effective use of resources. Thus, when a site is proposed, it is normally goes through feasibility study before it is approved for development.

There are 3 parts in feasibility study:

1.ECONOMIC FEASIBILTY:

In the fastpaced world today there is great need of online social networking facilities. The purpose of the economic feasibility assessment is to determine the positive economic benefits to the organization that the proposed system will provide. The cost of converting from manual system to new automatic computerized system is not probably more. For construction of new system, the rooms and its facilities are available so its does not require any extra resource, only the software requirement is there.

2.TECHNICAL FEASIBILTY:

TECHNICAL FEASIBILITY here one has to test, whether the proposed system can be developed using existing technology or not. It is planned to implement the proposed system using java. It is evident that the necessary hardware and software are available for development and implementation of the proposed system. Hence, the solution is technically feasible.

3.OPERATIONAL FEASIBILTY:

The system working is quite easy to use and learn due to simple but attribute interface. Operational feasibility is the measure of how well a proposed system solves the problems, and takes advantage of the opportunities identified during scope definition and how it satisfies the requirements identified in the requirements analysis phase of the system development.

- **FACT FINDING TECHNIQUES:**

The fact-finding techniques are a process of collection of data and information based on techniques that contain observation, record review, questionnaires and interview. Study the current system requirement investigation depends upon fact-finding techniques. Information gathering is very important while developing any system of following method have been adopt while fact gathering techniques.

There are 4 parts in fact-finding techniques:

1.OBSERVATION:

Observation is very important part of fact-finding technique from other techniques. This technique is used in our system to observing the whole by observing how the system work. How many different techniques are there in the system? What are the way to maintain the system we observed flow of document and we have got lots of information which help us lots of implements in the system and it also help in finding alternative rules and regulation and procedure, Also helps in making proper use of document.

2.RECORD REVIEW:

The technique proves in fact-finding of system and points must be covered while designing the current system observing documents register and data which are prepared manually by the department carries out the techniques of record review. It helps the design of input output required for the system, the database, screen designing, etc. Thus, the technique proves very helpful for analyzing about the system.

3.QUESTIONNAIRES:

Questionnaires are used to get more information from user. We have able to collect good and convenient data regarding our project.

In questionnaires system is paper out system in which we ask the question in paper formatted as like:-

1.How to design online system?

2.How your system workout?

3.How you solve problem of customer?.....etc.,

4.INTERVIEW:

Interview is fact-finding technique where we get information by face-to-face interaction.

In these we can ask questions like:-

1.How to work in this system?

2.How the system work in your center?.....etc.,

- **HARDWARE AND SOFTWARE REQUIREMENT:**

1.HARDWARE REQUIREMENT:

-Processor: i3

-Hard Disk: 5GB

-Memory: Atleast 512MB RAM

2.SOFTWARE REQUIREMENT:

-Operating Systems: Windows7 and above

-Front end: HTML, CSS,PHP and JavaScript

-Back end: MySQL

#SOFTWRE USED:

We have to use some basic software/tool to create this project as listed below—

-Notepad

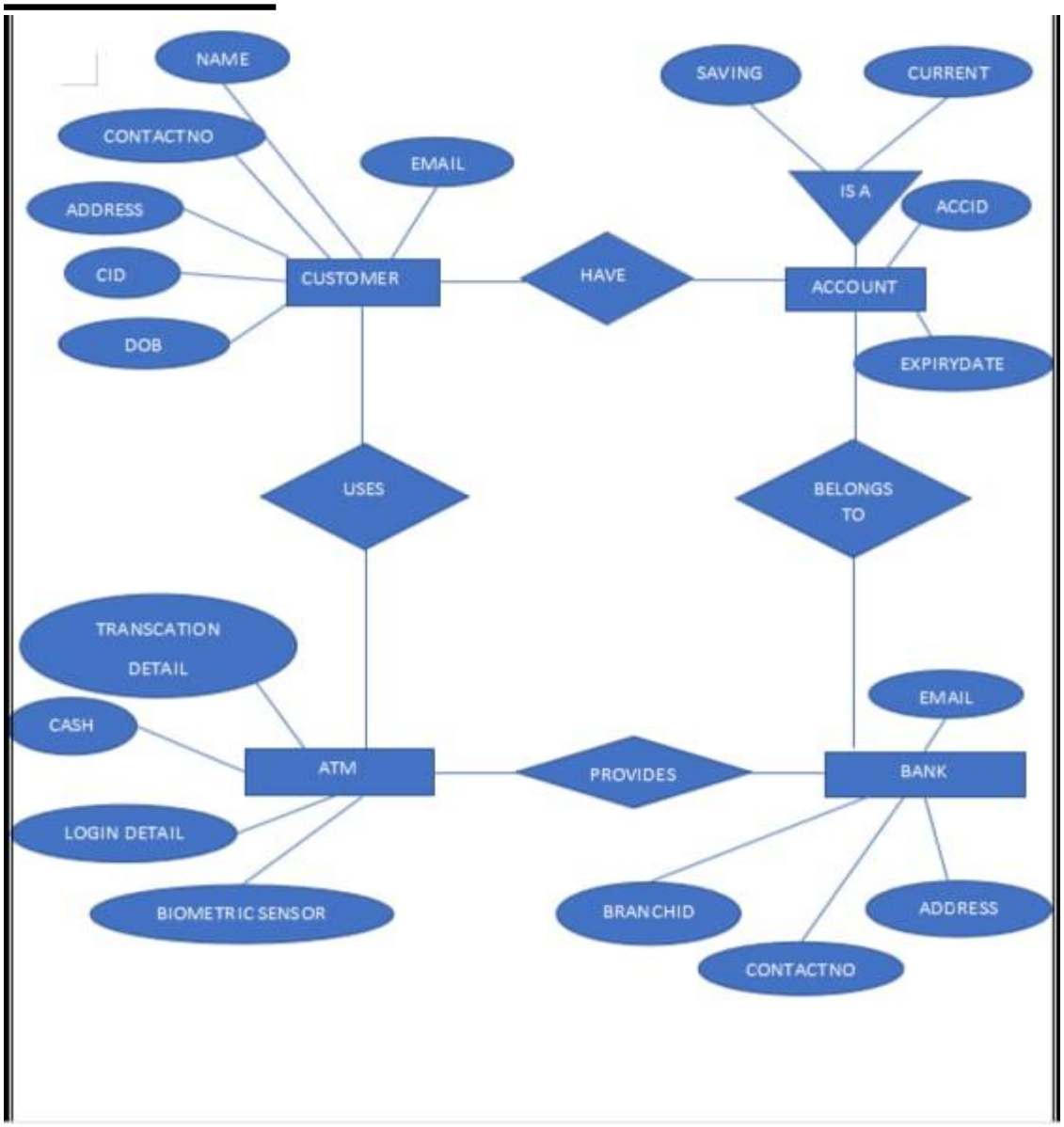
-Web Browser (Google Chrome)

-Local Server (Wamp Server)

-MySQL Database

SYSTEM DESIGN:

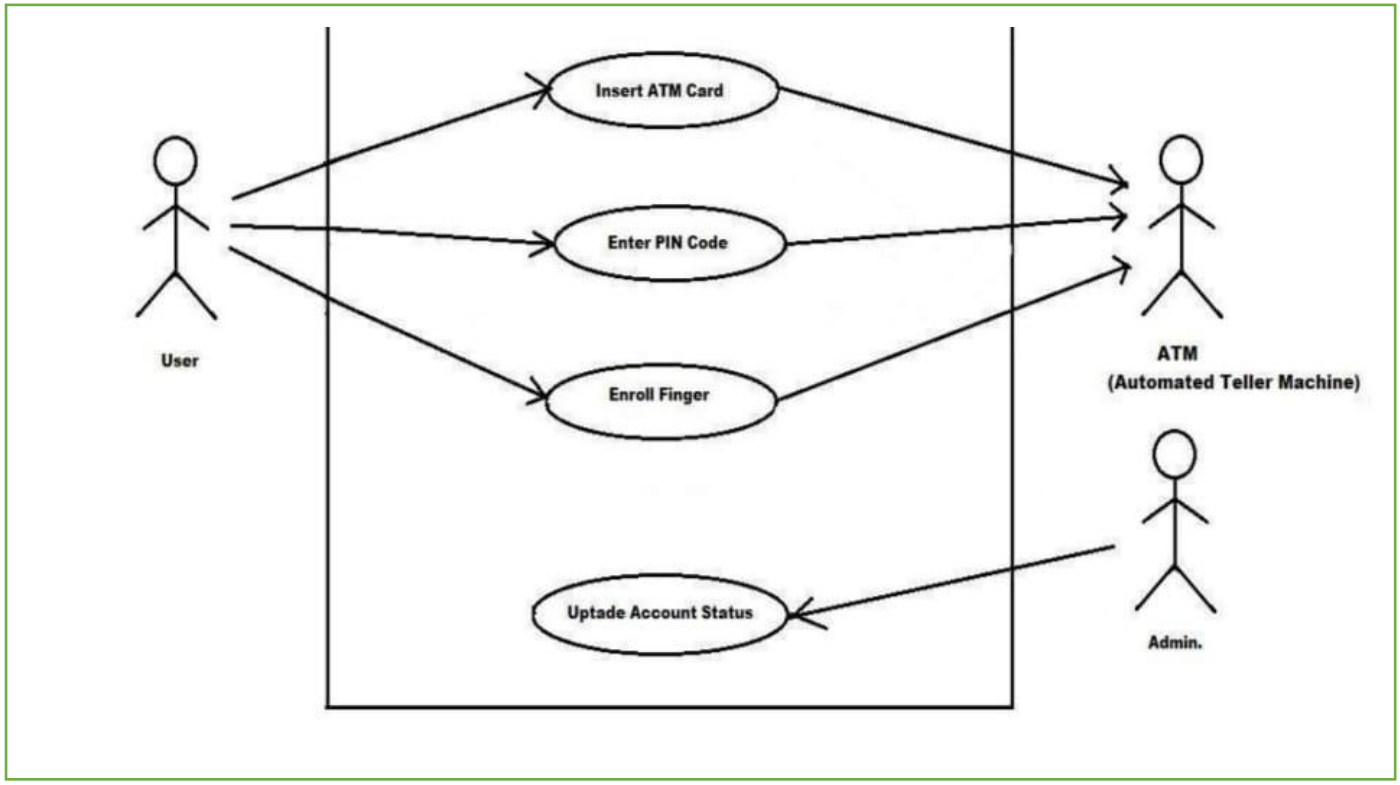
- **E-R DIAGRAM:**



1.An entity relationship diagram (ERD), also known as entity relationship model, is a graphical representation that depicts relationship among people, objects, places, concept or events within an information technology (IT) system.

2.An ERD uses data modelling techniques that can help define business processes and serve as a foundation for a relational database.

USE-CASE DIAGRAM:



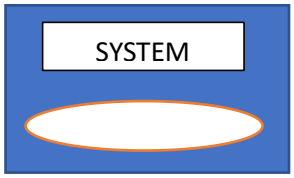
1.A use case diagram describe a high-level function and scope of a system.

2.These diagrams also identify the interactions between the system and its actor.

3.The use cases and actors in use case diagram describes what the system does and how the actors use it, but not how the system works.

4.Symbols and their functionality:

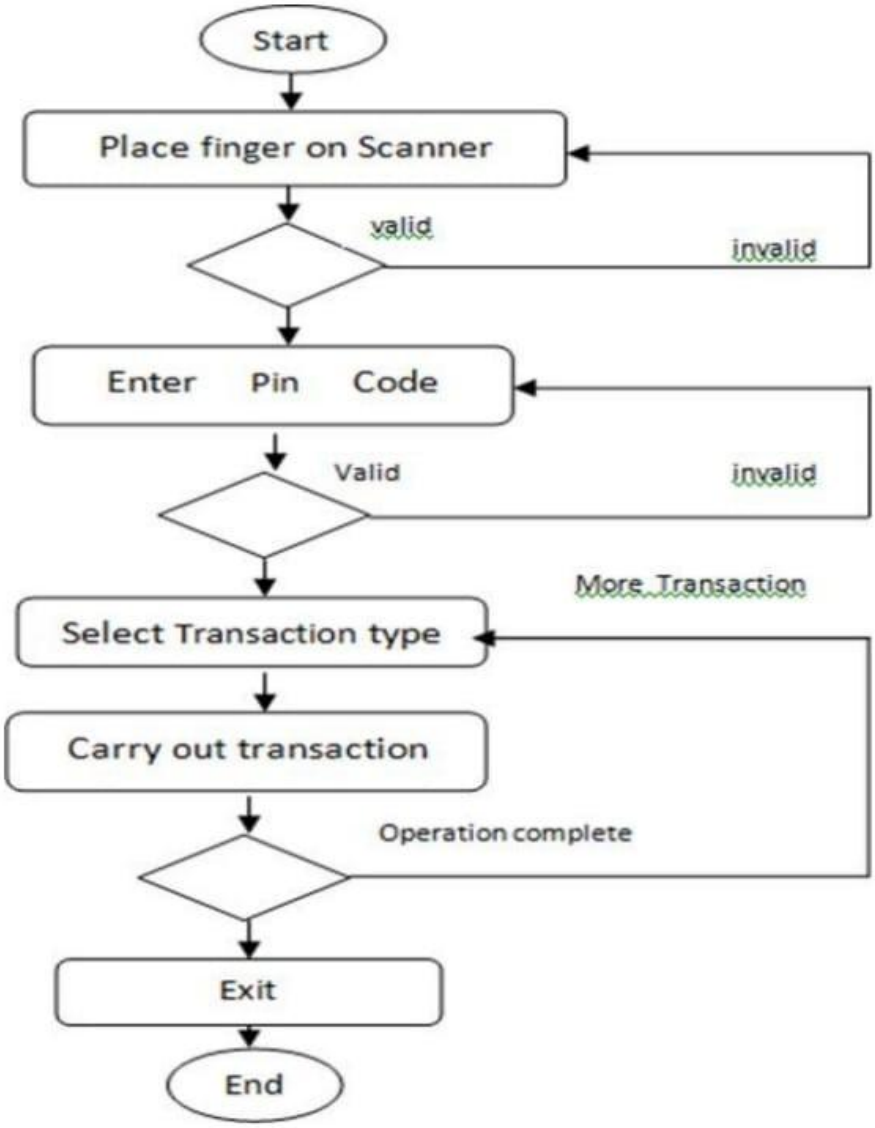
a.  Use Case

b. 

System

c.  Relationships

- **ACTIVITY DIAGRAM:**



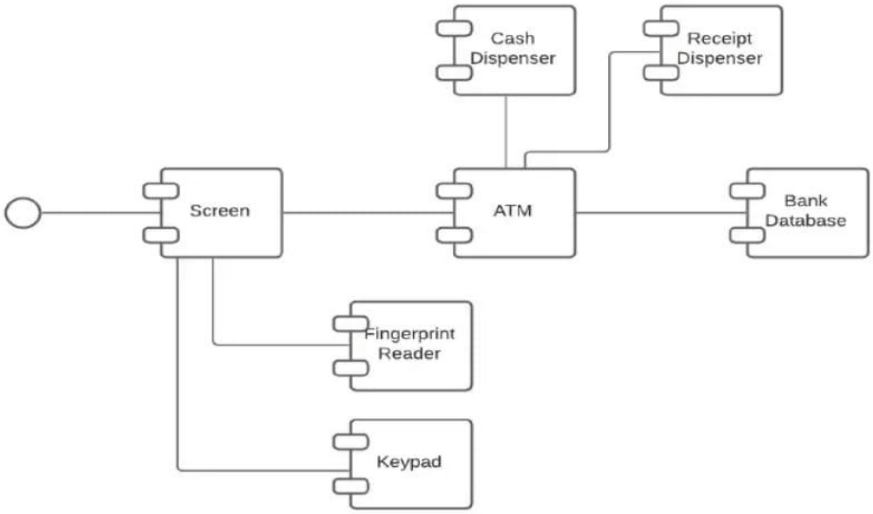
1.Activity diagram is basically a flowchart to represent the flow from one activity to another activity.

2.It is use to demonstrate the logic of algorithm.

3.It describes the steps performed in UML case.

4.It is used to simplify and improve any process by clarifying complicated use cases.

- **COMPONENT DIAGRAM:**

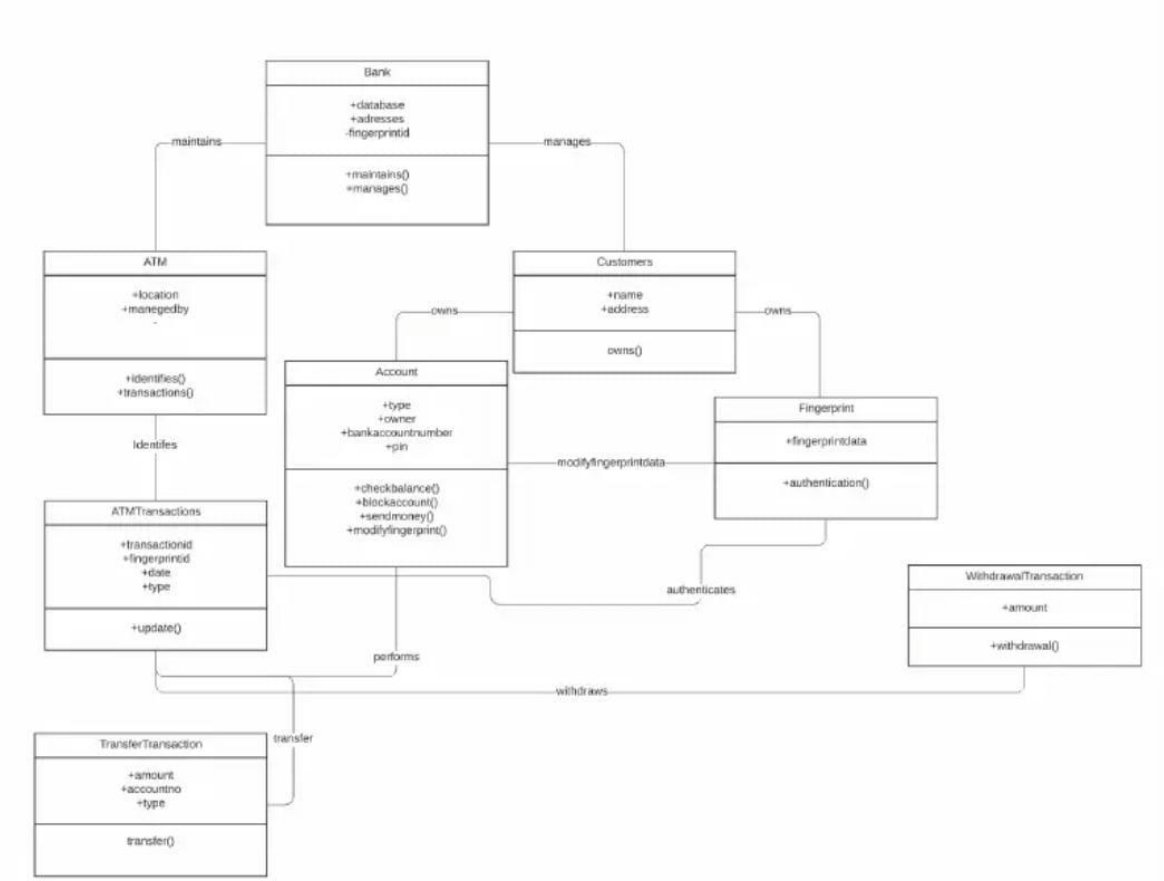


1.A component diagram displays the structural relationship of a software system.

2.Components communicate with each other using interfaces.

3.The interfaces are linked using connectors.

CLASS DIAGRAM:



1.A class diagram models the static view of a system.

2.It comprises the classes, interfaces and collaborations of a system; and the relationships between them.

3.Here, in the class diagram we are showing the different classes consisting of different components of our system.

- **DATA DICTIONARY:**

1. CUSTOMER:-

Field Name	Data Type	Description	Size
c_id	Int	Not Null	100
Name	varchar	Required	20
DOB	Date	Not Null	10
Email	varchar	Not Null	20
Contact No.	Number	Not Null	10

2.ACCOUNT:-

Field Name	Data Type	Description	Size
acc_id	Int	Not Null	100
balance	Number	Required	200
expiry date	Date	Not Null	10

3.BANK:-

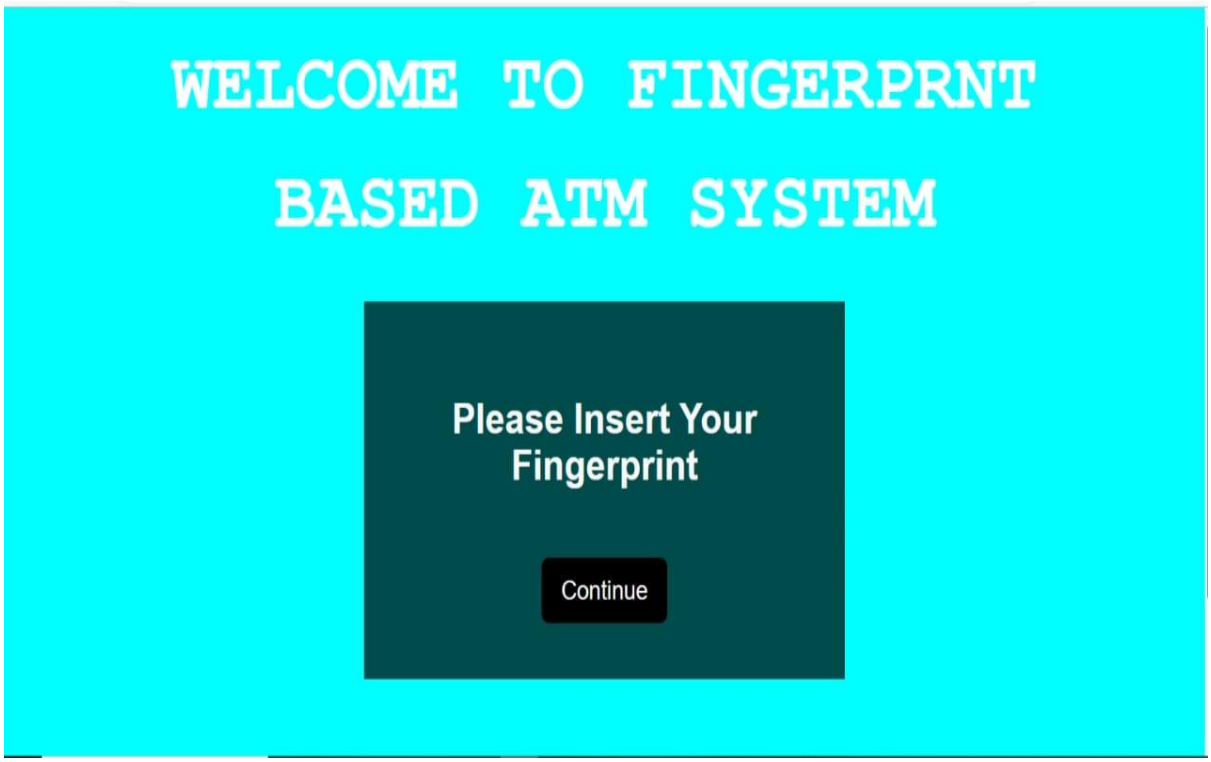
Field Name	Data Type	Description	Size
Name	varchar	Not Null	20
Address	varchar	Required	20
Email	varchar	Required	20
branch_id	Int	Not Null	20

4.ATM:-

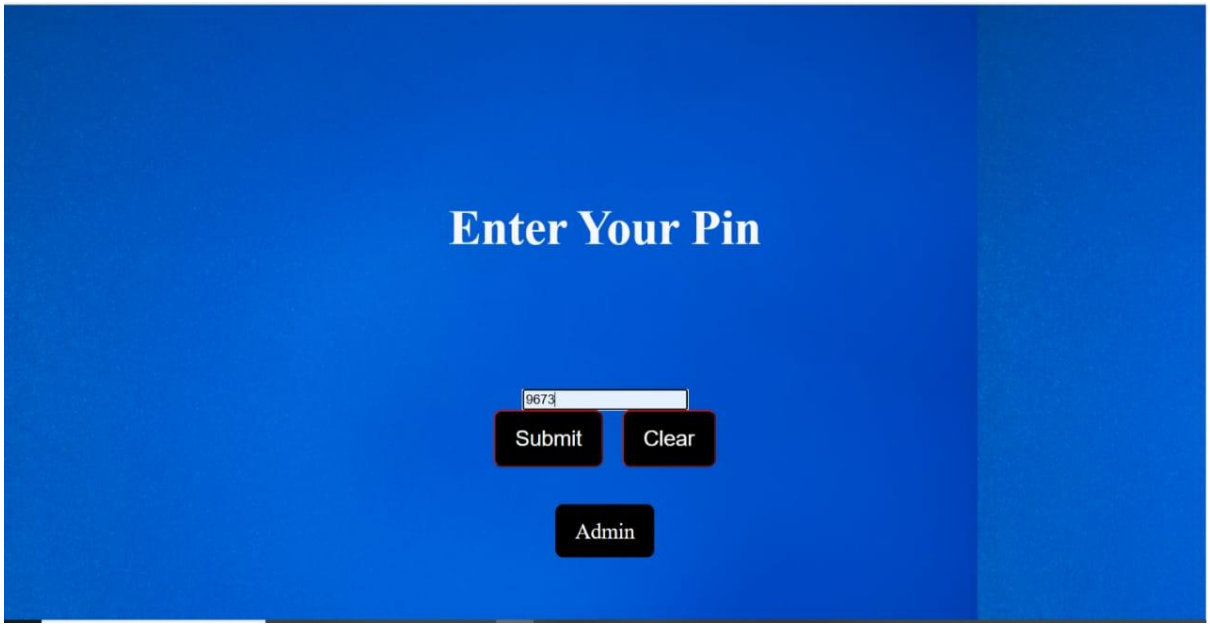
Field Name	Data Type	Description	Size
transaction	Number	Not Null	10
details	varchar	Not Null	100
loan details	varchar	Not Null	100
cash	Number	Not Null	20

INPUT OUTPUT SCREENS:

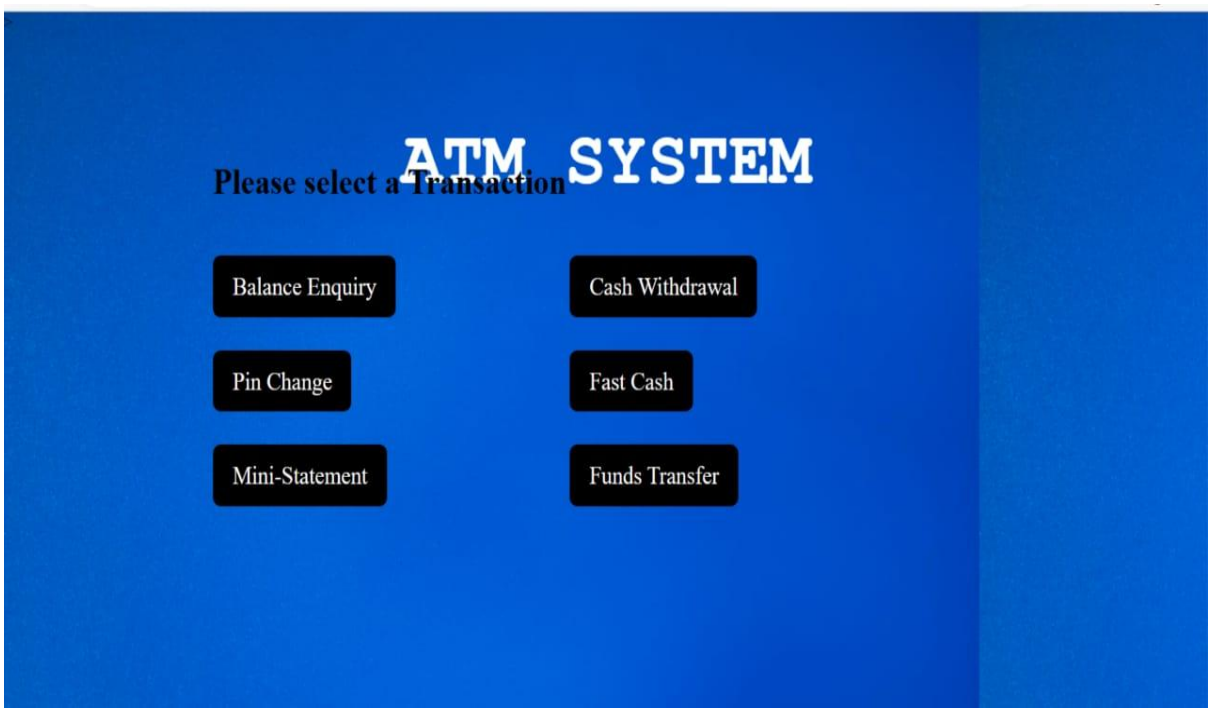
Home Page:



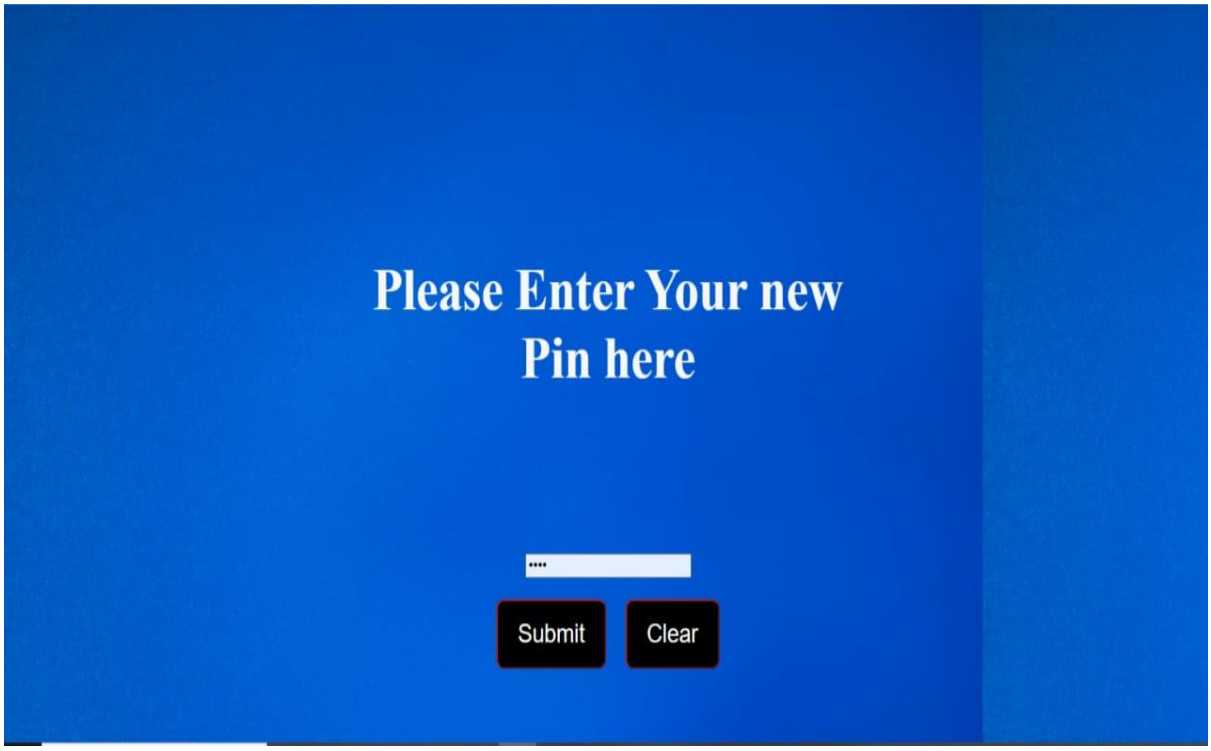
Login page:

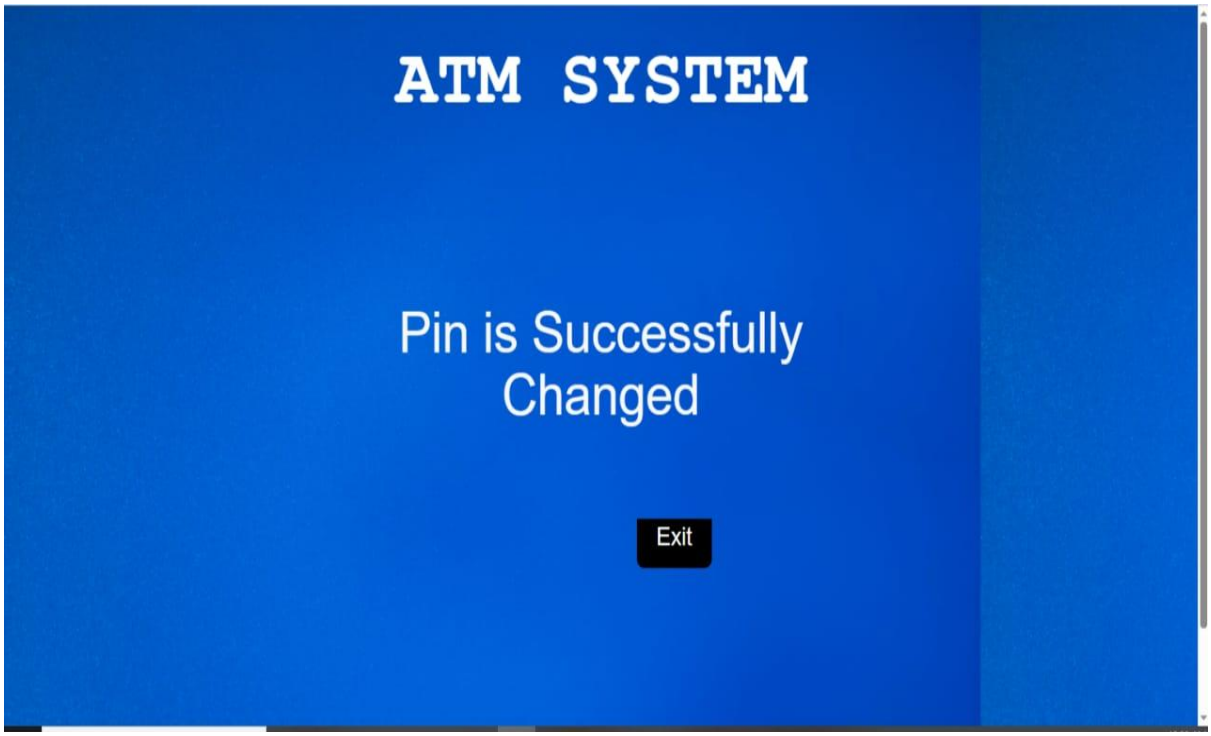


Transaction Page:

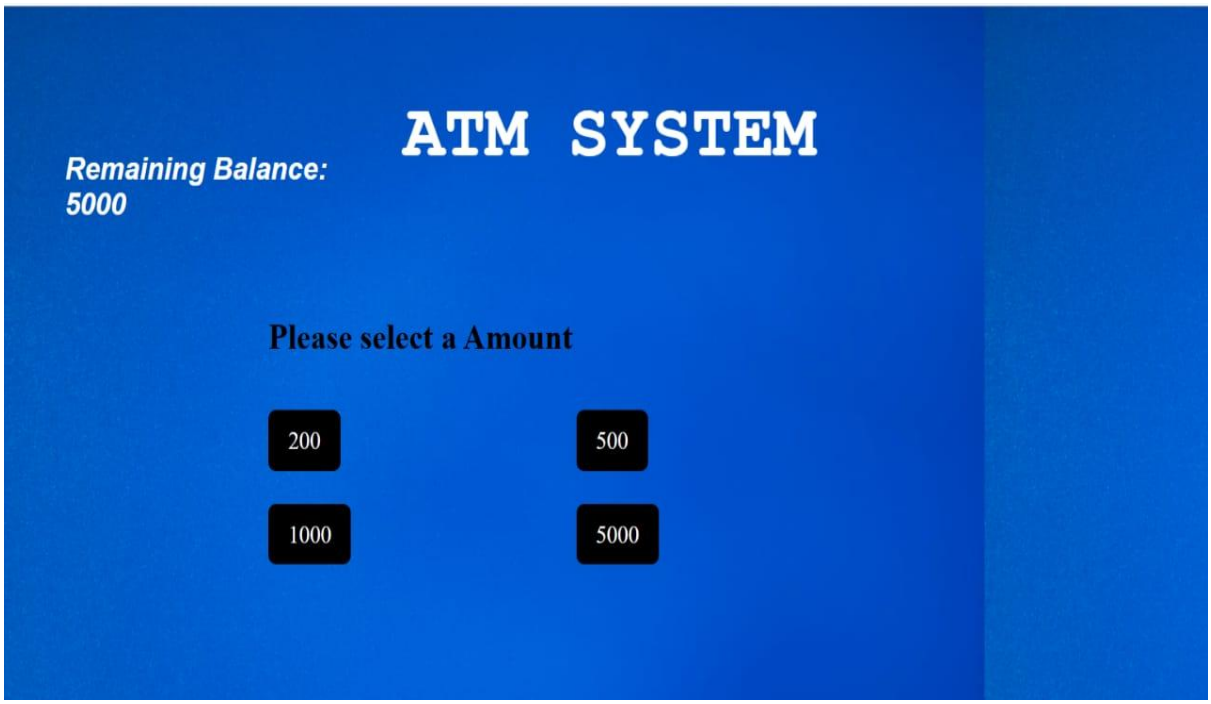


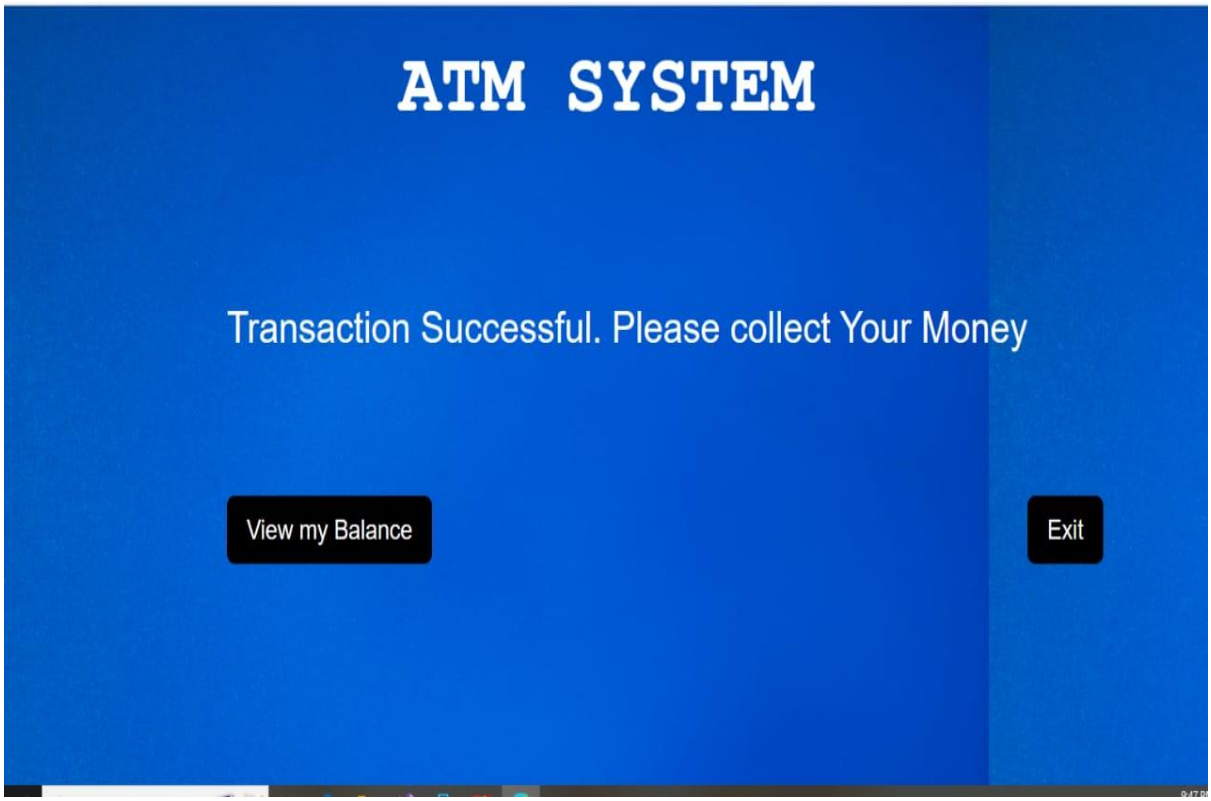
New pin:



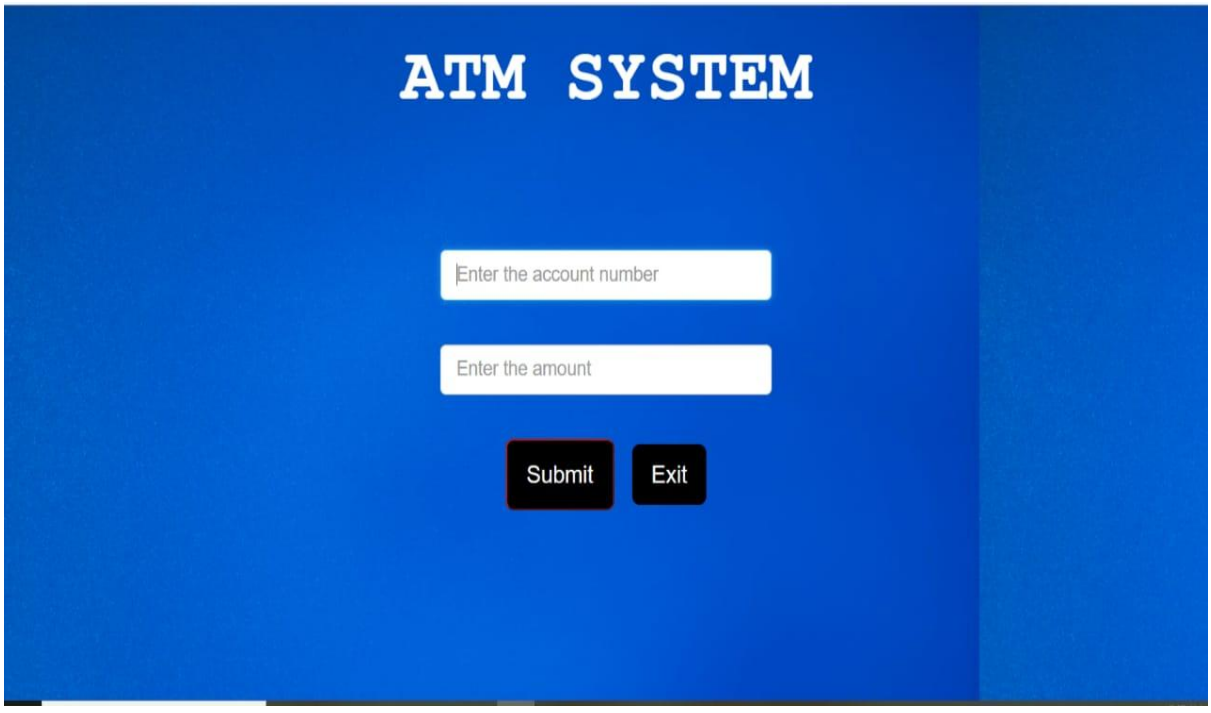

ATM SYSTEM
Pin is Successfully Changed
Exit

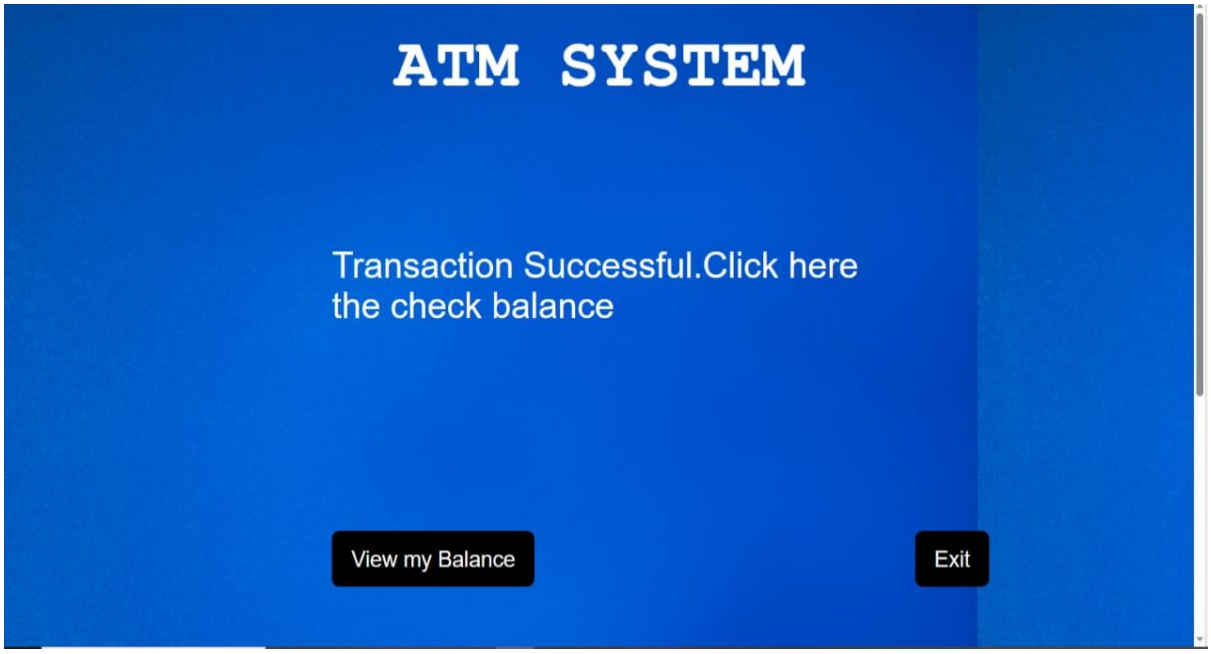
Fast cash:


ATM SYSTEM
Remaining Balance:
5000
Please select a Amount
200
500
1000
5000



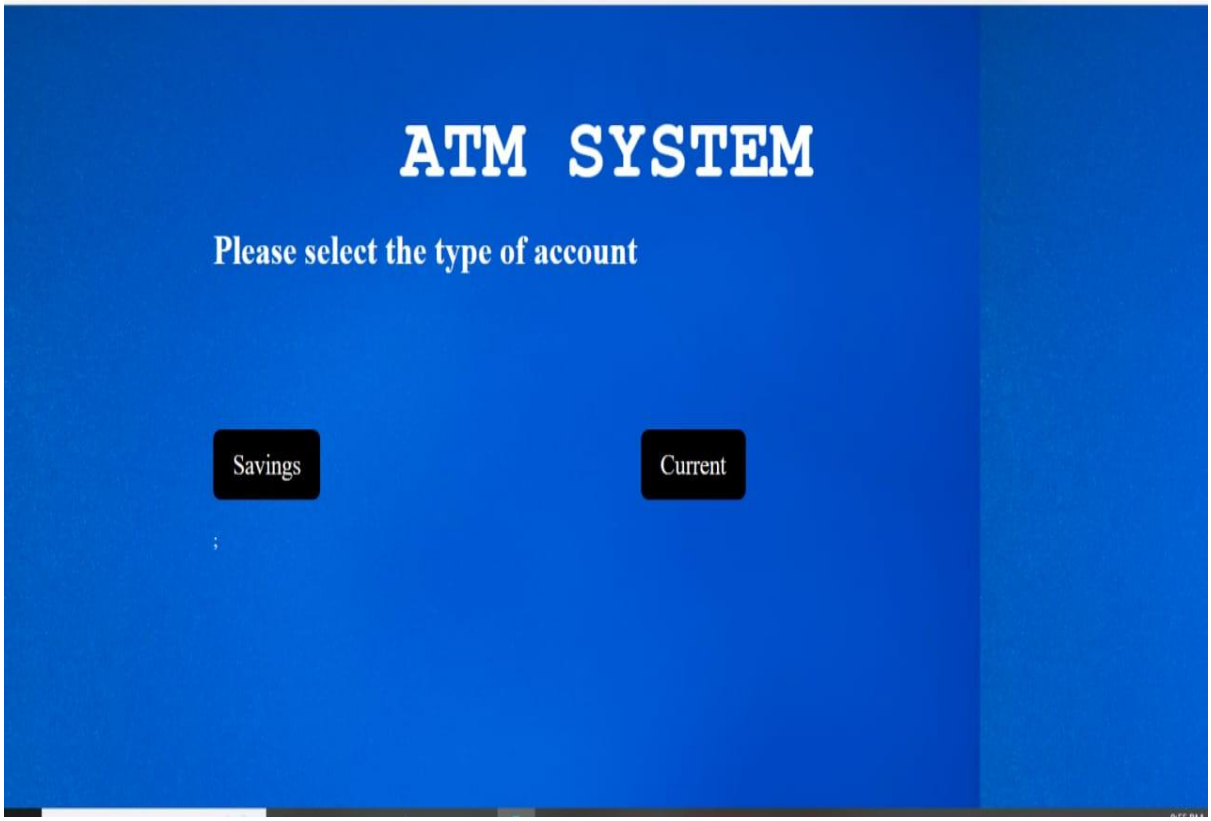
Fund Transfer:



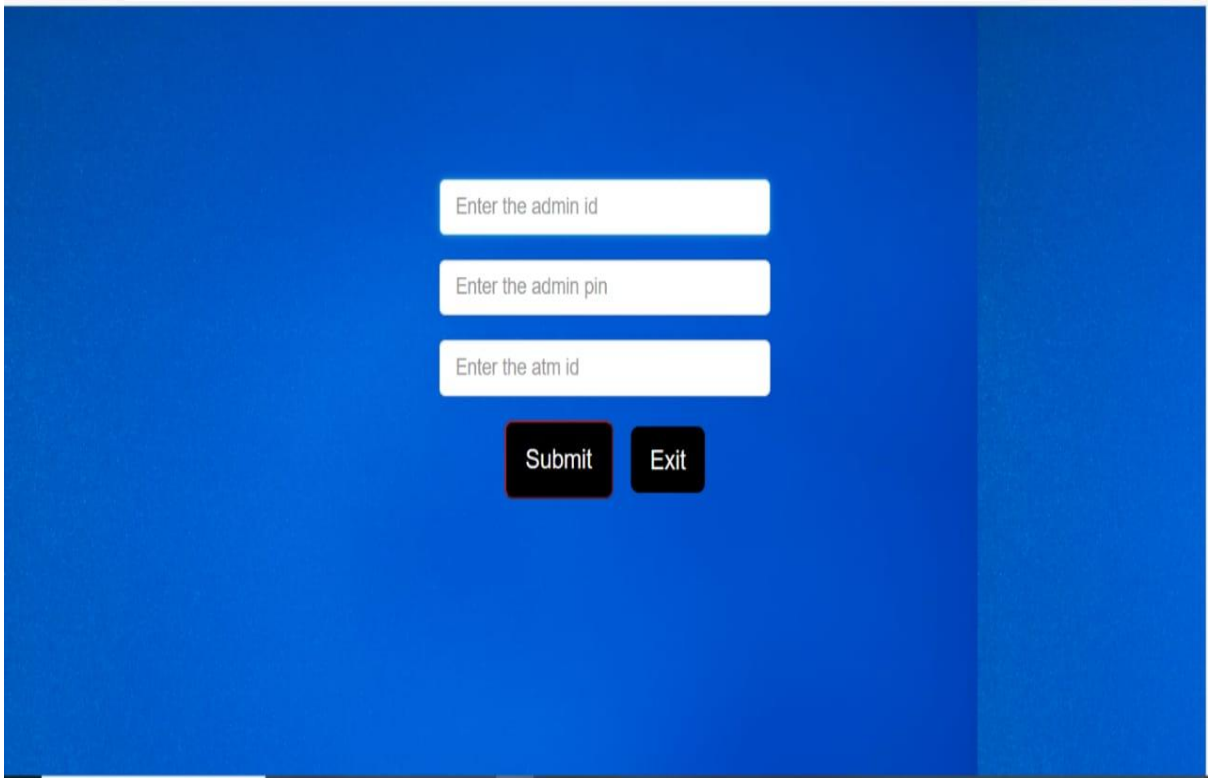

ATM SYSTEM
Transaction Successful.Click here
the check balance
View my Balance
Exit

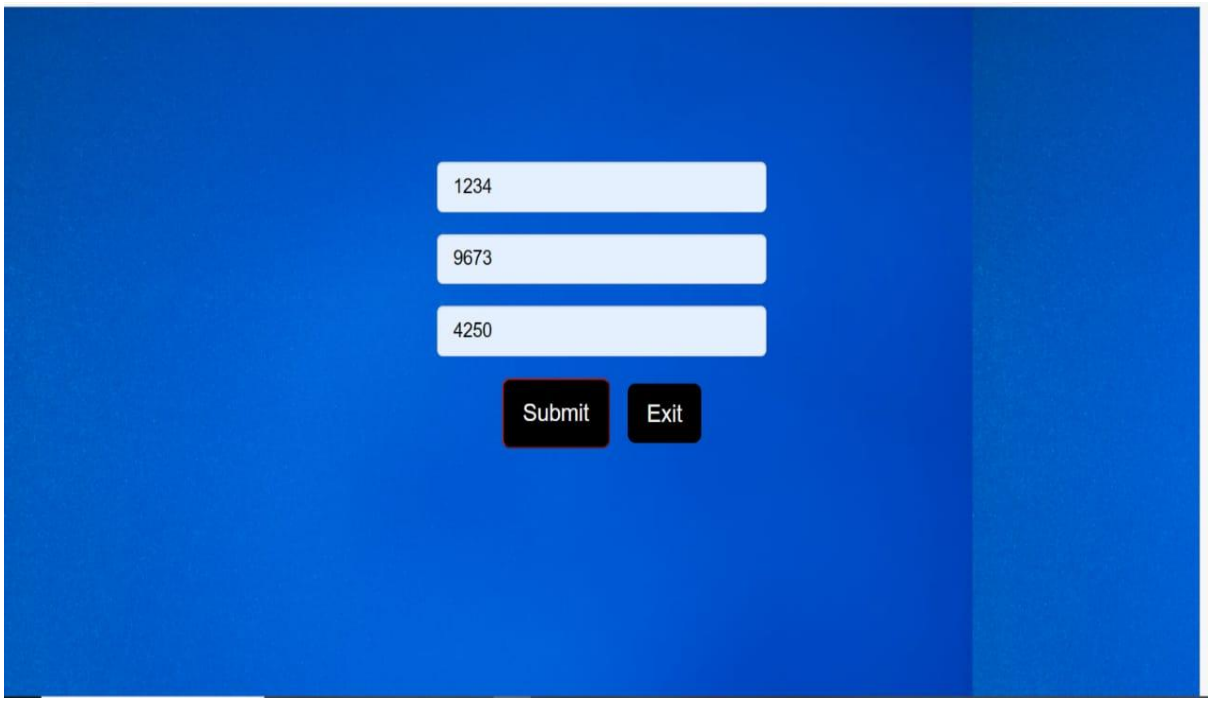

ATM SYSTEM
Available
Balance:
5000
Exit

Account Type:

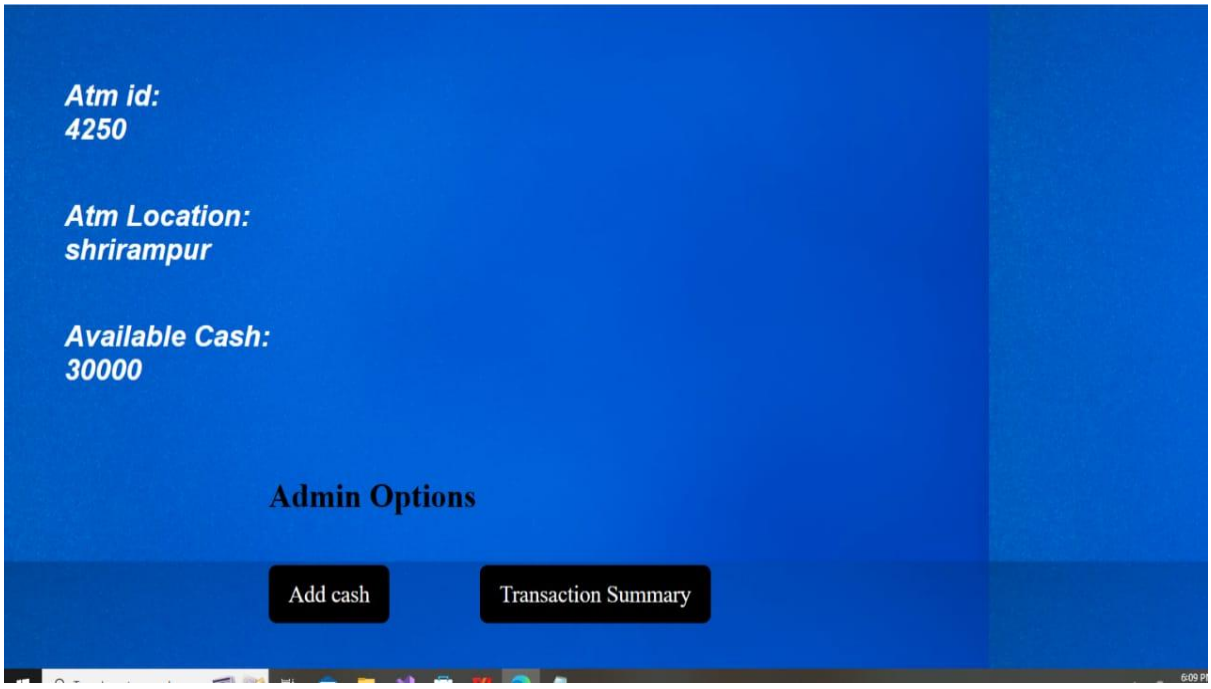


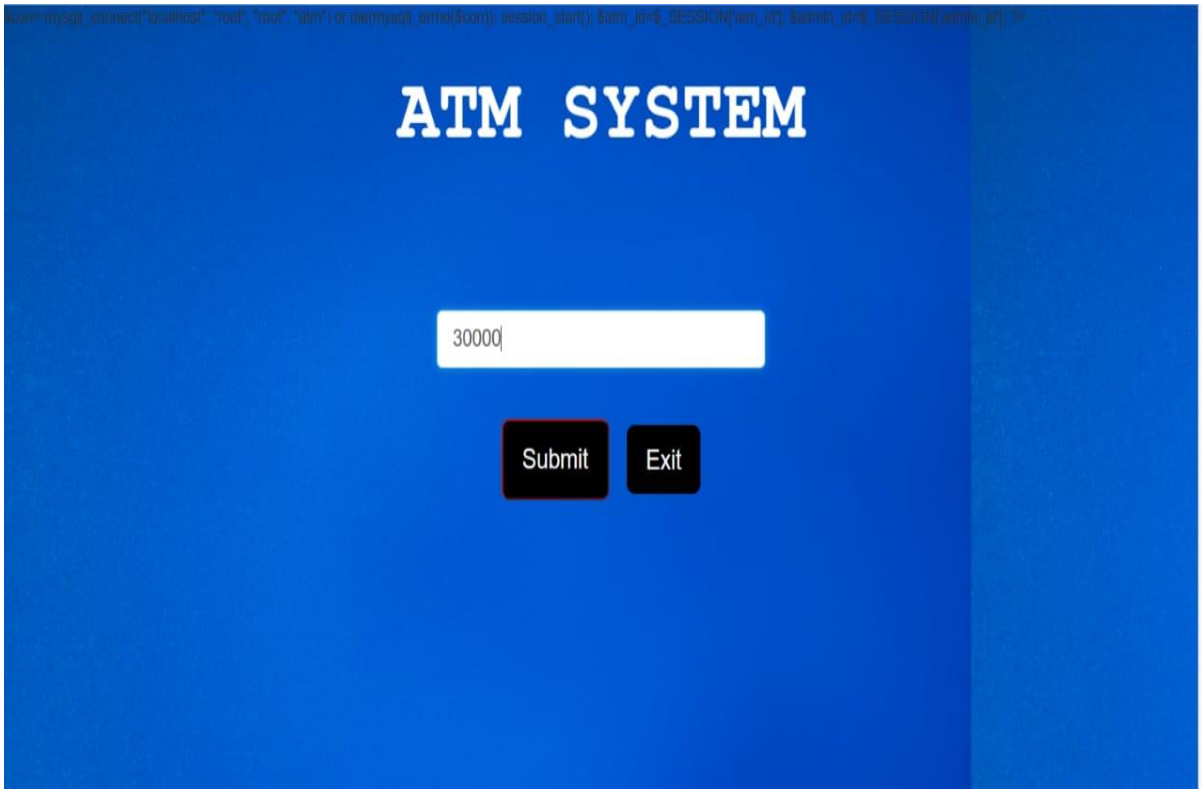
Admin page:

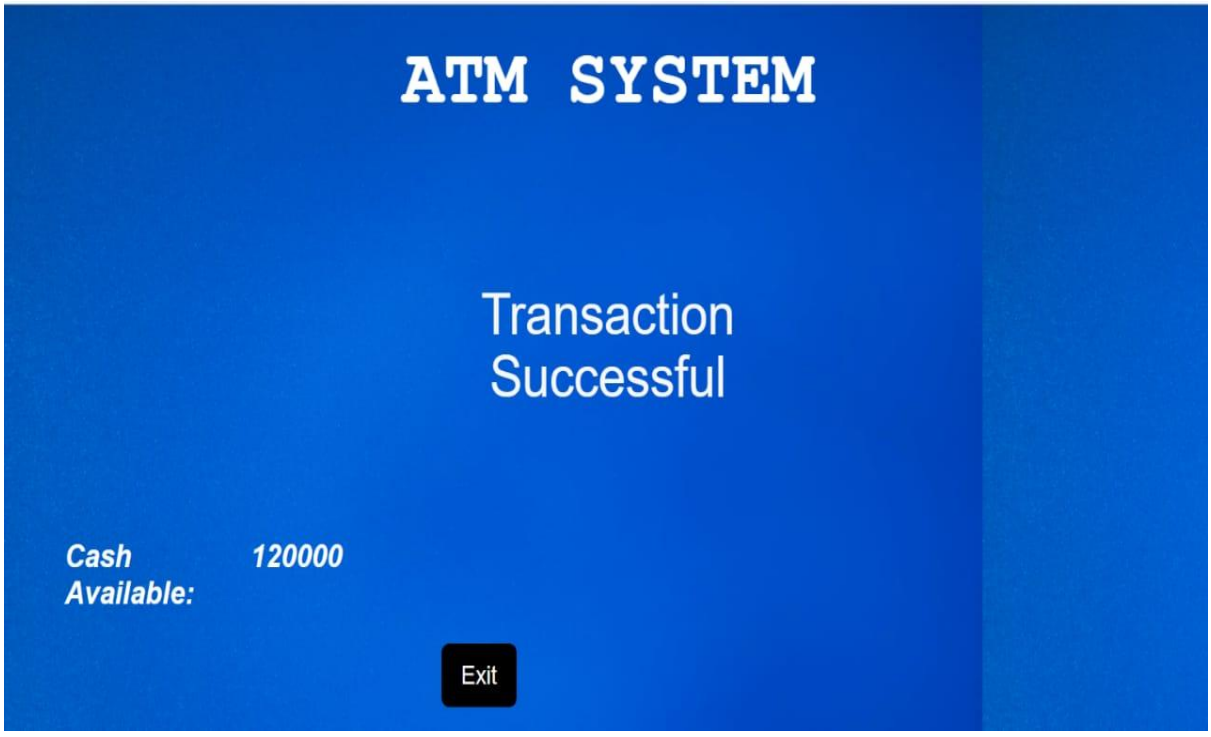



1234
9673
4250
Submit
Exit

Add cash:


Atm id:
4250
Atm Location:
shrirampur
Available Cash:
30000
Admin Options
Add cash
Transaction Summary


ATM SYSTEM
30000
Submit
Exit


ATM SYSTEM
Transaction
Successful
Cash Available:
120000
Exit

ADVANTAGES AND DISADVANTAGES

- **ADVANTAGES:**

1.Fingerprint based ATM system is more secure than ATM card.
2.User can make transactions using his fingerprint anywhere and at any time he need not have to carry an ATM card.
3.It has faster authentication, convenient, accuracy, flexibility, and is scalable.
4.It can't be easily stolen.
5.Fingerprints help investigators link one crime scene to another involving the same person.
6.It is easy to use.

- **DISADVANTAGES:**

1.Inability to enroll some users.
2.Affected by skin conditions.
3.High cost.
4.Lost ATM card.
5.Scanner is not work properly.

APPLICATION:

1.The system can be used in various banks.

FEATURES

1.Login – User will login to the system using his fingerprint.

2.Add Pin Code – User has to scan finger and add pin code in order to do transactions.

3.Withdrawal of cash – User can withdraw cash by entering the amount he want to withdraw.

4.Transfer of Money - User can transfer cash to other accounts by entering the account number he wants to transfer.

5.View Balance -User can view balance which is available in his respective account.

6.View Transactions -User can view last transactions.

FUTURE ENHANCEMENT

This project is aimed at developing a web-based system which manage the activity of “Fingerprint Based ATM System”.

This system will manage the database and maintain a list of all transactions.

Broadly it can be effectively deployed in following real world instances-

1.Fingerprint

2.Improved feature extraction and matching algorithms.

3.Securing fingerprint based biometric system.

4.Performance can be improved in term of speed and memory.

CONCLUSION

As we all know, these days most of the ATM has been attacked by the robberies Also gradual increases the theft of ATM after the year by year. This paper demonstrates how an automation of —ATM THEFT prevention from robbery. In today's modern world, autonomous systems play an important role in our day-to-day life. As the social computerization and automation have drastically increased, it can be seen evidently where the number of ATM centers increases rapidly. Most civilians use ATM 's regularly. A good example can be a financial transaction, ease of money exchange etc. So there exists an important factor called security. The crime rates involved in financial organizations have increased tremendously. Over past few years – —90 % of crimes in ATM centers in the form of robbery. This issue poses a serious threat to both bank management and civilians. Therefore, this study proposes a solution to minimize the ATM robbery in real time by means of embedded systems and GSM technology. The main motive of this design is to prevent ATM theft. Many real time incidents around us has been the main motivation of this project.

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