www.ijprems.com
editor@ijprems.com

INTERNATIONAL JOURNAL OF PROGRESSIVE RESEARCH IN ENGINEERING MANAGEMENT AND SCIENCE (IJPREMS)
Vol. 02, Issue 05, May 2022, pp : 90-93

e-ISSN : 2583-1062
Impact Factor : 2.205

# AUTOMATIC PIN GENERATION FOR ATM EACH TIME USING OTP

**Arthi G[1], Chandni R[2], Dharanitha M[3], Gowthama Swetha K[4]**

[1,2,3, 4]Department Of Computer Science and Engineering,

Sri Eshwar College Of Engineering, Coimbatore, India.

## ABSTRACT

In general, the ATM concept is a very useful one for everyone. The Automated teller machine is used to withdraw money any time anywhere in the world depending upon the card you are using. Future ATM, and its associated infrastructure, offer great potential for increasing the efficiency of operations and for safety enhancement on a global scale, whilst in the longer term reducing costs overall to the benefit of all stakeholders. Authentication in the security of a computer system means guaranteeing and verifying the identity of the user. Users must provide their identity and permission to access the data from the system. This is a mechanism for associating an incoming request with a set of identification credentials.Though login and password is easy to implement it has gone through several attacks like shoulder-surfing and screen dump attacks. As an alternative, token, OTP and biometric based authentication systems were introduced. Thus, a variation to the login/password scheme, OTP scheme is used by interchanging the 2nd and 4th letter of the PIN number by receiving the OTP. If an attacker manages to get hold of an ATM card and the pin number may easily use it to withdraw money frequently. Hence our system gives lots of security to perform ATM transactions.

**Keywords :** One Time Password interchange, Authentication, ATM transactions, personal identification number.

## 1. INTRODUCTION

The Internet is an integral part of our daily life, and the proportion of people who expect to be able to manage their bank accounts anywhere, anytime is constantly increasing. As such, Internet banking has come as a crucial component of any financial institution. Online banking is mostly used by internet users. Online banking system is not more secure with the customer's financial status even though various security processes are followed. Customer's financial information is more important in which online banking couldn't be successful. Most of the attacks on online banking used today are based on stealing user login data and valid TANs.

Authentication in the security of a computer system means guaranteeing and verifying the identity of the user. Users must provide their identity and permission to access the data from the system. Thus, a variation to the login/password scheme, OTP scheme is used by interchanging the 2nd and 4th letter of the pin number by receiving the OTP. If an attacker manages to get hold of an ATM card and the pin number may easily use it to withdraw money frequently. Thus our system provides a totally secure way to perform ATM transactions with security structures.

## 2. ASSOCIATED WORK

The methods identified to make ATM transactions in a safer way is split wholly into the following parts:

### A. Approaches based on Biometric Authentication :

The human face is an individual's identity. If the recognized face matches, the system will enable use otherwise, the system will provide a warning to the cardholder's device. If the cardholder accepts the request, the process can continue; or if denied, the process will pause.personal identification number helps identify the personal identification.PIN authentication is subject to brute force and guessing attacks. The user's keypad shuffles in every authentication attempt to avoid attackers.

The face-id is incorporated with PIN for security which is implemented using machine learning and image processing. The card must be inserted then image of user is captured and compared it with the image stored in database .If image matches ,PIN is entered and transaction is done.If user image is not matched and wrong PIN is entered then it causes a alert at the police portal which is at the backend. If the user's friend uses the card, then the face will not be matched.In this case, the user needs to set a PIN and withdrawal limit in the mobile app. If the PIN matches, then the user can proceed with the transaction.

Biometric security authentication is used for transactions by fingerprint along with pin number. If the user feds fingerprint then it will be encrypted and decrypted and compared with images stored in the database. If it satisfies then the user can enter the PIN and proceed with further transactions. The algorithm used for encryption of fingerprints is blowfish.

### B. Approaches based on Thermal tracking:

ATM pin generated by eye blink using shoulder surfing and thermal tracking.A web application is developed by trio based authentication using machine learning techniques. It detects and recognizes the user face.The PIN displayed by the dynamic keyboard asking the user to enter the PIN in a wink.. The eye is detected and monitored by the application in order to capture the pin and verify with the database.

www.ijprems.com
editor@ijprems.com

INTERNATIONAL JOURNAL OF PROGRESSIVE RESEARCH IN ENGINEERING MANAGEMENT AND SCIENCE (IJPREMS)
Vol. 02, Issue 05, May 2022, pp : 90-93

e-ISSN : 2583-1062
Impact Factor : 2.205

## 3. PROPOSED METHOD

In the proposed system OTP scheme involves interchanging the 2nd and 4th letter of the pin number by receiving the OTP. If an attacker manages to get hold of an ATM card and the pin number may easily use it to withdraw money frequently. Thus our system provides a totally secure way to perform ATM transactions with security structures. One-time password (OTP) systems provide a mechanism for logging on to a service user using a unique password that can only be used once, as the name suggests. Hence non-legitimate users cannot hack ATM PIN as it is interchanged with the OTP each time.

The Dictionary and brute force attack can be prevented as password changes for each transaction, it increases the system security. This system provides authorized access to the user and it is easy to use. Alphanumeric passwords are not only passwords, they can easily be shared, stolen, guessed, reused, dictionary attacks, keyloggers, shoulder surfing, so they are a good way to authenticate users to computer systems. Because it is weak. Passwords are easier to remember and easier to use, but they are not completely secure. Providing a wide range of passwords requires multiple authentications, which is tedious. and Significant investment needed in biometric authentication as it needs additional devices like sensor and camera for the identification process. The normal username/password or PIN based authentication scheme is an example of the "what you recognize type". As an alternative to the traditional password based scheme, the biometric system was introduced. This relies upon unique features unchanged during the lifetime of a human, such as fingerprints, iris etc.Token based systems rely on the use of a physical device such as smartcards or electronic-key for authentication purposes. OTP techniques have been proposed as a potential alternative to text-based techniques, supported partially by the fact that humans can remember images better than text.

## 4. TOOLS AND TECHNOLOGIES USED

Various tools and methods were used to achieve the goals of secure transactions. We carefully examine the tools and technologies used and existing technologies.

### A. VB.NET

The system is developed using Visual Basic .NET, which is a very popular and successful Microsoft Product developed by Microsoft Corporation. Visual Basic .NET is one of the improved languages from basic language. Visual basic .NET includes a variety of open active controls for user interfaces to design application forms. Visual Basic .NET is a very productive tool for rapid creation of a wide range of Web, Windows, Office, and Mobile applications that have been built. An integrated development environment (IDE) is software for building applications that combines common developer tools into a single graphical user interface . The Visual Studio IDE is a streamlined code editor that you can use to edit, debug, and build code, and then publish an app.

VB.NET is the multiple document interface format (MDI).The user interface is the part of the program that responds to the key press and mouse clicks. The action is referred to as events of the form and controls in the form. VB.NET provides a very great extent of properties and methods for each control that helps to utilize all those functions for record manipulations. In VB.NET Menu driven is one of the most important effective control. In this menu drive the menu names in a program appear in the menu bar when the user selects a menu, that menu opens. Every menu that contains items will usually be arranged in a vertical list. Visual Basic .NET contains features such as powerful customization, automation, and productivity features, new forms designer, an in-place menu editor, automatic control anchoring and docking. Visual Basic .NET has new productivity features for building more robust applications in an easy and quick way. With an improved integrated development environment (IDE) and a significantly reduced startup time, Visual Basic .NET offers fast, automatic formatting of code as typing, improved IntelliSense, an enhanced object browser and XML designer, and much more.

VB.NET is an ideal programming language for developing sophisticated professional applications for Microsoft windows. VB.NET creates robust and powerful applications with the use of Graphical User Interface(GUI). The Graphical User Interface enables the users to interact with an application as the name suggests. This feature makes it easier to comprehend things in a quicker and easier way.VB.NET provides the facilities such as login dialog form, browser form, query form, option dialog form and wizard from which enable the developer to design the application more effectively.

### B. MS-SQL Server:

MS SQL Server is a database management system where the user can create applications that don't require any programming knowledge. It supports GUI features and an entire programming language, Visual Studio Application which can be used to develop richer and more developed applications. There are a fairly large number of reasons, the first being that SQL is a feature rich program that can handle any database related task we work on. You can create places to store your data like student details and marks, fee etc and build tools that make it easy to read, edit and add to your database contents, and ask questions of your data. SQL is a relational database, a database that stores information about related objects and it can be retrieved. In MS SQL is a collection of tables that hold data in a database. MS SQL collectively stores all the related objects such as queries, forms and reports that are used for implementation of functions.

www.ijprems.com
editor@ijprems.com

INTERNATIONAL JOURNAL OF PROGRESSIVE RESEARCH IN ENGINEERING MANAGEMENT AND SCIENCE (IJPREMS)
Vol. 02, Issue 05, May 2022, pp : 90-93

e-ISSN : 2583-1062
Impact Factor : 2.205

The MS SQL database acts as a back end database for .NET as a front end, MS SQL has powerful database management functions which supports the user. Even a beginner can create a database in a very easy way by mouse clicks. Another good reason to use SQL as a backend tool is that it is a component of the overwhelmingly popular Microsoft office software suite. MS SQL defines relationships among the data it contains, hence it is called as the relational database. In relational databases you can store discrete information as it is superior to flat file databases.

Microsoft SQL Server 2000 is a full-featured relational database management system (RDBMS) that offers different administrative tools to reduce the burdens like development, maintenance and administration of the database. Services of SQL id Enterprise Manager, Query Analyzer, SQL Profiler, Service Manager, Data Transformation Services and Books Online. Multiple copies of SQL Server database engine is not necessary to allow multiple users to access the database of the system. An instance of the SQL Server is capable of supporting many thousands of simultaneous users on a single server. Each instance of SQL Server makes all databases in the instance available to all users that connect to the instance, with high security.

When connecting to an instance of SQL Server, your connection is associated with a particular database; that database is called the current database on the server. You are usually connected to a database by the system administrator which is defined as your default database. SQL Server allows you to remove databases from an instance of SQL Server, then reattach the database to another instance, or attach the database back to the same instance.

## 5. IMPLEMENTATION

Input design is a component of overall design that necessitates meticulous consideration. The basic goal of input designs is to create user-friendly interfaces. Validation of data should occur at the input phase. As a result , the screens are set up for data entry. For errors that occur during data entry, messages are included. Once the data is suitable for appending to the master tables, it can be used to generate acceptable outputs and stored for future checks. In this system keyboard inputs are collected from terminals. Admin login details are maintained with the unique username and password. They are only accessed in this project add , update and modify and delete etc. The performance of the user in their registration will be monitored and their performance will be uploaded in the database. User registration use case allows the user to maintain user information in the user details and generate the report. This module is used for user registration details. It includes things like user id, user name, address, contact number, username and email id etc. This use case adds the user details in the database system. User login use case sorts when the user wishes to log into the system. The system requests the actor to enter his/her name and password the actor enters name and password. The system validates the entered username and password(PIN) and login into the system. Deposit detail module is used to deposit details it includes like date, account no, user name and deposit amount etc. Users securely manage the ATM card implementation. Withdraw details module is used to withdraw details it includes like date, user code, user name, card no and withdraw amount etc. Balance detail module is used to maintain the deposit minus withdrawal. It shows the balance details. Output design has been an ongoing activity since the start of the project. The output usually refers to the results and information produced by the system. The output design of the system takes into account the following activities: Decide what information to display. Determines whether the information captured, processed, and generated by the system is displayed or printed. Design the display of information in an acceptable format. Decide how to distribute the output to the desired recipients.

A person with an account can withdraw ,deposit and change PIN(personal identification number) for his particular account. After creating an account a user can login into their account if no user needs to register with details of the user like name ,age ,deposit amount ,phone number and create a new account. Now users can login with username and PIN. Users can change the PIN whenever necessary using the change password option by reentering the old password and entering the new password twice. User needs to generate OTP(One Time Password) each time for every transaction using the generate OTP option. The OTP will be valid only for one particular transaction, so if the user needs to proceed to another he needs to generate OTP again. Whereas the PIN number remains the same until the user changes it.

Whenever a user chooses to generate OTP for a particular transaction, then OTP will be generated to the particular registered mobile number of the user. Users must remember the PIN of the account. User gets the 2nd and 4th number of the OTP and swap it with the PIN number. Hereby we have ensured that the transaction is very secure. It is difficult to know the original PIN number as it is swapped every time and shoulder surfing attacks can be avoided. And it is much more secure to hack it as the hacker needs username(account number) and PIN ,then he needs the mobile of the user and PIN of mobile then only someone can login into the particular system. Every time a user cannot carry the debit/credit card with him, it will be helpful to the user to enter the account number and proceed to the transaction without a debit/credit card. Nowadays online transactions have been much more used and much more efficient and there are many thefts happening at online ATM transactions and it needs a good internet connection. We cannot be very sure that internet connection is good at all places like hill station ,forest areas .Hence, an ATM is necessary and it must be a secure way of transaction.

www.ijprems.com
editor@ijprems.com

INTERNATIONAL JOURNAL OF PROGRESSIVE RESEARCH IN ENGINEERING MANAGEMENT AND SCIENCE (IJPREMS)
Vol. 02, Issue 05, May 2022, pp : 90-93

e-ISSN : 2583-1062
Impact Factor : 2.205

## 6. RESULTS

The results of the developed model is that users can generate OTP for each transaction using the generate OTP option. Then the user can interchange the OTP 2nd and 4 th digit with the PIN number ,then enter the password and proceed with the transaction.

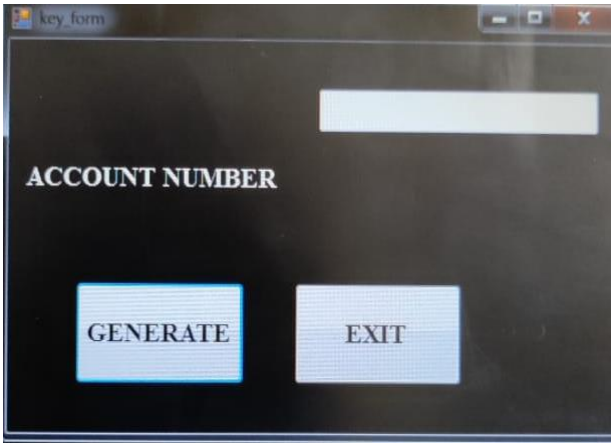


**Fig. 1:** Generate OTP image..

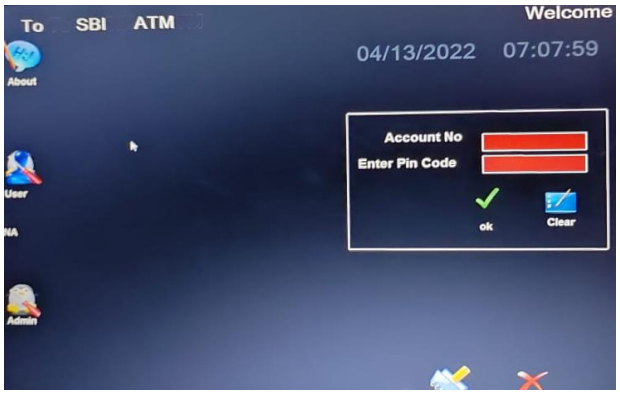


**Fig. 2:** Result image.

## 7. CONCLUSION AND FUTURE SCOPE

On summing up, the method that we proposed is far better in increasing the security feature. The use of OTP is for more secure authentication as there are so many ways for hackers to identify the PIN using different techniques. This method can be implemented for online transactions and for important logins.

## 8. REFERENCES

[1]. S.Ramachandran,"COMPUTER AIDED DESIGN", Air Walk Publication, Third Edition,2003
[2]. Programming VB.NET: A Guide for Experienced Programmersby Gary Cornell, Jonathan Morrison
[3]. John Paul Mueller "Mastering Web Development With Microsoft Visual Studio" Build powerful enterprise web application with ASP.NET 2005
[4]. Gary B.Shelly, Thomas J.Cashman, Jeffery J.Quasney "Microsoft visual basic .net complete concepts and techniques" 2002
[5]. Datacamp.com,'To install sql server'[Online]. Available:https://www.datacamp.com/community/tutorials/how-to-install-sql-server.
[6]. Microsoft.com,'Editor for developing softwares'[Online]. Available:https://visualstudio.microsoft.com/.
[7]. Mssqltips.com, 'Linked server with Database'[Online]. Available:https://www.mssqltips.com/sqlservertip/3331/how-to-use-a-linked-server-in-a-sql-server-database-project/.
[8]. Microsoft.com, 'Query analyzer'[Online]. Available:https://docs.microsoft.com/en-us/archive/msdn-magazine/2005/august/tools-of-the-trade-sql-server-profiler-and-query-analyzer.
[9]. Python.org,'Python'[Online].Available:https://docs.python.org/3/reference/.