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# A Novel Authentication Mechanism for Confidential Applications with Graphical Passwords and Persuasive Clicks

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## Abstract:

For password securities and recovery operations the standard human-computer-interaction are normally used in financial applications. The predominant goal for user authentication mechanism is to provide the support for the users to select the most suitable passwords. The attackers will predict the passwords according to the environment, date of birth, name and other environmental situations. A strong mechanism is essentially needed to admeasure the guessing attacks to the online applications. To avoid this practice and to suggest a strong system of assigning the passwords for the application security a graphical picture assignment is suggested.

In this graphical password authentication system, images or replications and representations of images are used as passwords. It is suggested just because of the nature of the human brain which remember the pictures more impressively rather than the textual passwords. Some of the banks have started the secured user authentication when the user is accessing the online banking accounts with the combination of graphical password with the combination of Customer ID and password. The proposed paper is suggested to implement a novel mechanism to the banks to protect the customers from different guessing attacks.

## Keywords:

Graphical passwords, Guessing attacks, Secured Authentication, Persuasive click points.

## Aim:

The aim of the project is to incorporate a graphical password with persuasive click points in terms of the image X axis and Y axis for at least 2 images. The online application authentication development is to prevent the guessing attacks, Brute Force Attacks and Dictionary attacks.

## Scope:

The project is developed to cater the security needs for online banking applications. The stakeholders of the project are online banking application users. The application is developed in the field of banking security domain. The application is replicating the novel concept of graphical password authentications with persuasive click points. The sphere of the project is wide and used universally and shows a solution for guessing attacks, Brute Force Attacks and Dictionary attacks. The project is developed in .net framework with visual studio tools and SQL server database. The application is demonstrated on XP operating system.

## Project Contribution:

The present dissertation report is on A New Authentication Mechanism Based on Graphical Password. The project is a novel piece of work in the filed of online application security and system security. The project is defining the new way of defining the passwords to operate an online banking application. The project is going to give a novel methodology for implementing new password system to online users. By using this novel concept of using graphical passwords with persuasive cued click points the passwords will be preserved with great privacy and can't be guessed by any attacker of online banking application. The project will be contributing well to the field of security authentication and application security. The project method is novel and paved the way to restrict the guessing attacks, Brute Force Attacks and Dictionary attacks.

## Analysis of the project:

The innovative solution has been introduced in this application with persuasive cued clicks on the image.The persuasive cued click points notification mechanism will avoid the user to select un important points of the image.

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The persuasive mechanism will direct the user to select very casual and normal image from the pool of images. The selection should be normal and not attractive for image and cued clicks on the image. The click will be stored in the database in a sequential format, which is called as cued clicks. The sequential order should be recorded in the application database. Whenever the user wants to access the application the cued clicks should be verified. The clued click points should be tallied with the previous one. If the user forgets the cued clicks the application should allow the user to receive onetime password to his mobile or email to enable the user to reset the cued click points.

This application is going to address the present guessing attacks with great deal. The persuasive mechanism will guide the banking customer not to select the predominant points of the image and not to select the predominant images from the image pool. The persuasive mechanism helps the user to select the images as well as the cued click points in random and unimportant way. The persuasive cued click points notification can't be broken by any hacker or intruder with guessing attacks. The persuasive cued click points with image password application have to be developed with the following analysis.

## Module specification:

The following modules are present in the project.
1.Online Banking customer
2.Banker or Administrator

## Functionality of the Modules:

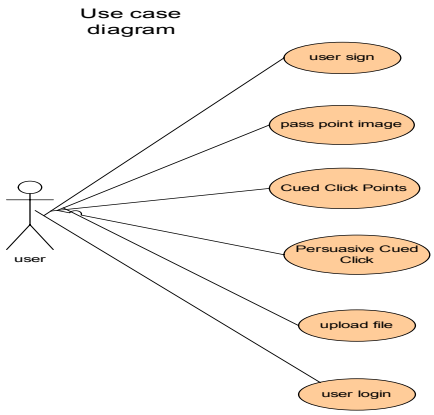
Online Banking customer module is used to select an image for identification of persuasive cued click points on it. The Online Banking customer is designed to enter the user name and password for login to the application. The user has to register with the application to give all details of the user. The user has to select the image for his password authentication.

The persuasive cued clicks have to be defined for every login operation.Banker or Administratormodule is designed to keep variety of images for user. The administrator will create a database to restore the user name and password into the database. The administrator will view the number of users logged into the application.

## Functionality of the project:

The project is designed to demonstrate the highest grade of security provision for online banking applications. The security is given against the guessing attacks. This has been incorporated with the persuasive cued click points on an image selected by the online banking customer along with the user name and password. The present project security mechanism is combined with textual passwords along with the image passwords with persuasive cued click points. The project is an online application with security mechanism to protect the application from guessing attacks. The project is predominantly highlighting the security mechanism with image passwords, textual passwords and persuasive cued click points.





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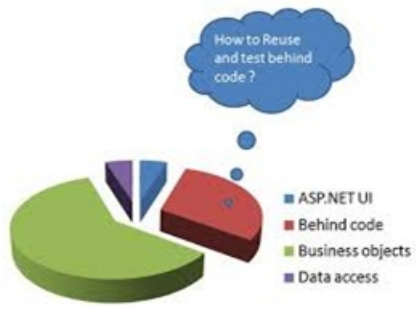
Before designing and developing the project what are the failures encountered in developing the mechanism against the guessing attacks have been enlisted. The great precautions have been taken in the development of code for this project. Every stage of coding and project integration the meticulous precautions have been taken. The experimental method of execution has been practiced to develop the required shape of the project. The user requirements, business requirements and functional requirements have been strictly followed to achieve the best output for the project. To get the success of the project various techniques in .net framework have been investigated and implemented in the project development.

## Database Development:

Database development for the specific project is very important and crucial. The database is SQL Server 2005. The development of database, tables for each module is done with graphical user interface. The development of database is very easy and the modification of the tables is also very easy. The development of database with tables is made easy in SQL Server 2005. In the first instance the database has been created. The tables are created with specific attributes in GUI mode with in the same database. Once the database with specific tables is developed the connectivity has to be established. To incorporate the connection with the tables and the respective screens the code behind the technique is used.

## Code behind the technique:

The most important and critical issues have to be encountered are in developing the code behind the technique. The code behind the technique is developed with ADO. Net controls, ADO.Net classes, C#.Net codes and stored procedures. The project is a web based application so that the ASP.Net




with the database server tables. Each table and the attributes of the table are to be connected with the respective user interface screens. The connection strings and connection mechanism is developed with the C#.Net code and ADO.Net statements and classes. The development of code behind the technique is difficult. This has been achieved with the help of experimental research methodology until the connection is properly established. This trial and error mechanism has given the clear connection with the database.

## Conclusion:

The financial transactions are taking the web application sphere. The reason is that the bankers are facilitating more to the customers to operate their accounts from their figure tips alone. Hence the financial transactions and valuable data shared by the financial institutions are exposed in online applications. The online B2B revolution has raised up and then the insecurity and threats from hackers to break the online applications have stirred the evolution of B2B transactions.

The enormous threats and wisest behavior to steel the financial data from financial institutions have demanded the great need of security. Online web applications should be configured with strong password mechanism. The present textual password mechanism is affected by guessing attacks by the hackers. The hackers and attackers are wise enough to break the textual passwords and intruding into the online applications.

The revolutionary experimental research work has been done in incorporating the security with encrypted mechanism. The revolutionary changes and innovative changes have been done in deploying advanced digital encryption standards. The digital encryption standards have been deployed to hide the real password of the user and tried to protect the interest of online financial application users. All the trails have become in vain.

Even digital encrypted textual passwords also decrypted with the wise characteristics of hackers and intruders. The hackers again started looting the valuable data of the financial organizations. The hackers and attackers have adopted sophisticated cracking techniques for textual passwords and intrude into the applications and caused irrevocable damage to the application storing data.

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