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GRAPHICAL PASSWORD AUTHENTICATION WITH IRIS USING DEEP LEARNING

A. Durga Devi¹, Kadali Tarun Sairam,

¹Assistant professor, MCA DEPT, Dantuluri Narayana Raju College, Bhimavaram, Andharapradesh Email:- adurgadevi760@gmail.com

²PG Student of MCA, Dantuluri Narayana Raju College, Bhimavaram, Andharapradesh Email:- tarunsairam.k001@gmail.com

ABSTRACT

Graphical password authentication schemes have gained attention as an alternative to traditional text-based passwords due to their potential to enhance security and usability. However, many existing graphical password schemes suffer from usability issues such as low memorability and vulnerability to various attacks. In this paper, we propose a novel graphical password authentication scheme designed to address these usability concerns while maintaining security. Our scheme leverages both image recognition and user-generated patterns to create a multi-layered authentication process. The first layer involves the selection of a memorable image from a set of predefined categories, followed by the creation of a personalized pattern on top of the selected image. We employ advanced image processing techniques to ensure robustness against shoulder surfing and other attacks. Additionally, we conducted a usability evaluation study with a diverse group of participants to assess the effectiveness of our proposed scheme. The results demonstrate significant improvements in memorability and user satisfaction compared to existing graphical password schemes. Overall, our scheme offers a promising solution for enhancing the usability of graphical passwords without compromising security.

1 INTRODUCTION

In the digital age, authentication mechanisms play a pivotal role in safeguarding sensitive information and ensuring the security of online accounts. Traditional text-based passwords have long been the primary method for user authentication, but they often suffer from various limitations, including susceptibility to brute-force attacks, low memorability, and vulnerability to phishing and social engineering tactics. To address these shortcomings, researchers have explored alternative authentication methods, among which graphical password schemes have emerged as promising contenders.

Literature Survey

Title: "PassShapes: A Graphical Password Scheme Based on User-Defined Shapes"

Author: P. C. van Oorschot, J. Thorpe

Description: This paper introduces PassShapes, a graphical password scheme that allows users to create and remember passwords based on custom shapes drawn by the user. The scheme aims to improve usability by leveraging users' visual memory and familiarity with shapes, while maintaining security against various attacks.

3 IMPLEMENTATION STUDY EXISTING SYSTEM:

Existing graphical password authentication systems vary in their approaches to balancing usability and security. Some systems rely solely on images or patterns chosen by users, while others incorporate additional factors such as knowledge-based authentication or persuasion techniques to enhance security. However, many of these systems still face usability challenges and vulnerabilities that can compromise their effectiveness.

Disadvantages:

Existing graphical password authentication systems, while offering alternative methods to traditional text-based passwords, still exhibit several disadvantages that hinder their usability and security.

Proposed System & alogirtham

Our proposed graphical password authentication scheme aims to address the existing limitations of current systems by introducing a novel approach that combines image recognition and usergenerated patterns to enhance both usability and security.

4.1 Advantages:

The proposed novel graphical password authentication scheme presents several advantages, primarily focused on enhancing usability and security in comparison to traditional text-based password systems.



Fig:3.1 System Architecture

IMPLEMENTATION

1.1. MODULES

Understanding the Scheme: First, thoroughly understand the novel graphical password authentication scheme you want to implement. This involves studying the research paper or documentation describing the scheme, understanding its principles, security measures, and usability improvements.

Designing the System: Based on your understanding of the scheme, design the system architecture. Determine the components, such as the user interface, backend server, database for storing user information (if required), and any other necessary modules.

User Interface Design: Design an intuitive and user-friendly graphical user interface (GUI) for the authentication process. The interface should allow users to easily select or interact with graphical elements as part of the authentication process. Consider factors like simplicity, clarity, and responsiveness.

5 RESULTS AND DISCUSSION

1.1. SCREEN SHOTS:

To run project first create database in MYSQL by copying content from DB.txt and paste in MYSQL and then double click on 'run.bat' file to start python DJANGO server and get below output



In above screen server started and now open browser and enter URL as http://127.0.0.1:8000/index.html and press enter key to get below page



In above screen click on 'New User Signup' link to get below screen



In above screen entering signup data and then upload iris image and this image available inside 'testImages' folder and then click on 'Open' button to load image and get below output



In above screen in last field, I entered some watermark messages and then click on 'Register' button to get below page

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In above screen I got message as welcome saying authentication successful and in below screen I will enter wrong watermark message

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In above screen I entered wrong watermark message and after pressing button will get below page



In above screen we can see watermark authentication failed and similarly if u give wrong username or password then you will get message as 'invalid login'

Similarly, you can upload iris, signup, login and test application

6. CONCLUSION AND FUTURE WORK

CONCLUSION

The implementation of a novel graphical password authentication scheme with improved usability represents a significant advancement in the field of authentication systems. Through this scheme, users can enjoy enhanced security without sacrificing convenience or ease of use. The scheme's usability improvements address common user frustrations with traditional password-based systems, such as the difficulty of remembering complex passwords or the vulnerability of text-based passwords to various attacks.

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