

## **Group 3**

### **Project Report: Three-Level Password System Using Python**

#### **Introduction:**

The Three-Level Password System addresses the critical problem of digital security. All systems using single-level authentication can be attacked. This project uses a combination of textual, color-based, and image-based authentication systems to increase security.

#### **Objectives:**

- To develop a user-friendly authentication system.
- To reduce vulnerability to hack or bot attack.
- It does provide innovative and highly secure multi-level password protection.

#### **Project Description:**

The Three-Level Password System incorporates:

1. Textual Authentication: A standard alpha-numeric password.
2. Color-Based Authentication: Passwords setup using RGB button combinations.
3. Image-Based Authentication: Users upload images for a graphical puzzle as the third-level password.

#### **Working of the System:**

1. Registration Process:
  - Users create an account with details and set three levels of passwords.
2. Login Process:
  - Step 1: Add alphanumeric email and password.
  - Step 2: Pick the right RGB combination.
  - Step 3: Solve the puzzle from the uploaded images as presented graphically.

#### **System Features and Benefits:**

- High Security: Three layers of authentication reduce the risk.
- User-Friendly Interface: Designed to be simple to use.
- Customizable Options: Users can upload personalized images.
- Defense against Bots and Hackers: Robust defense mechanisms.

## **System Development Life Cycle:**

It follows the Waterfall Model:

1. Requirement Analysis: Research of user's needs towards multi-level security.
2. Design: This designs a three-stage authentication system secured.
3. Implementation: Developing the system in Python, using the Django framework.
4. Testing: Checking each authentication level for their vulnerabilities.
5. Deployment: Deploy the system to real-world usage.

## **Limitations:**

- Recovery of password is not available if a user forgets all three levels of authentication.

## **Applications:**

- Web registration systems for increased security.
- Individual systems requiring robust protection from attacks.

## **References:**

- [MyFik](#)
- [IRE Journals](#)
- [IJCRT](#)
- [Project Championz](#)

## **Conclusion:**

The Three-Level Password System provides a robust solution to enhance digital security through textual, color-based, and image-based authentication. Its user-friendly design and multi-layered framework significantly reduce risks of unauthorized access. While lacking a

recovery mechanism, the system offers strong protection against attacks, making it ideal for secure applications.