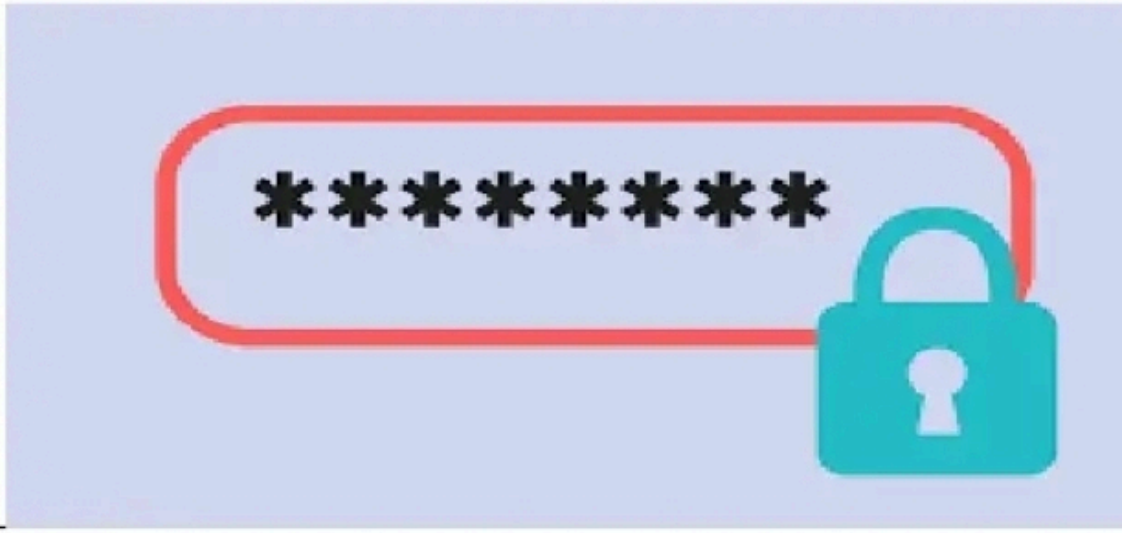
Introduction

- Passwords are the first line of defense in digital security.
- Weak passwords are vulnerable to attacks.
- This project evaluates password strength a guides users.



Methodology

- - Input: User-entered password.
- - Evaluation Criteria:
- - Length
- - Uppercase/lowercase
- - Numbers & special characters
- - Avoid common patterns
- - Output: Score and suggestions.

Tools and Technologies Used

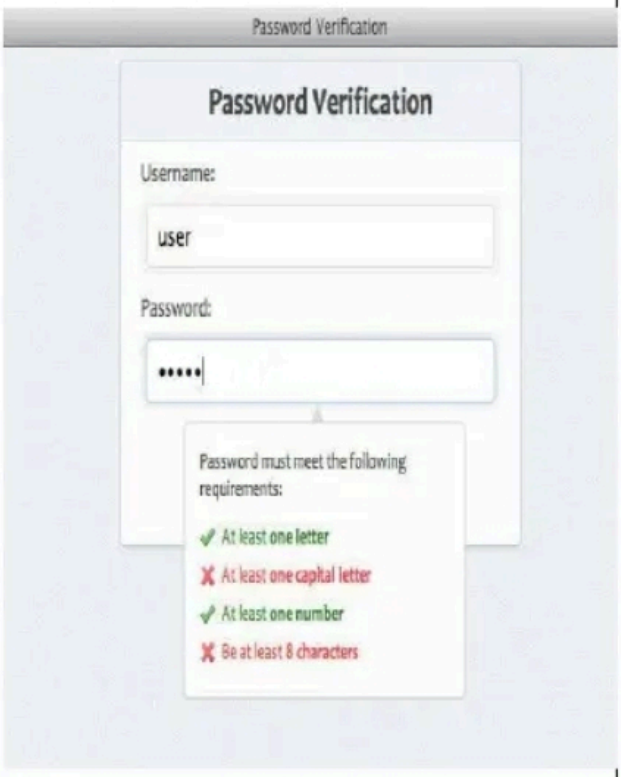
- - Programming Language: Python
- - Libraries: re (Regex), tkinter (GUI)
- - Optional: Web version using HTML, CSS, JS

System Architecture

- Input Layer → Validation Logic → Result Display

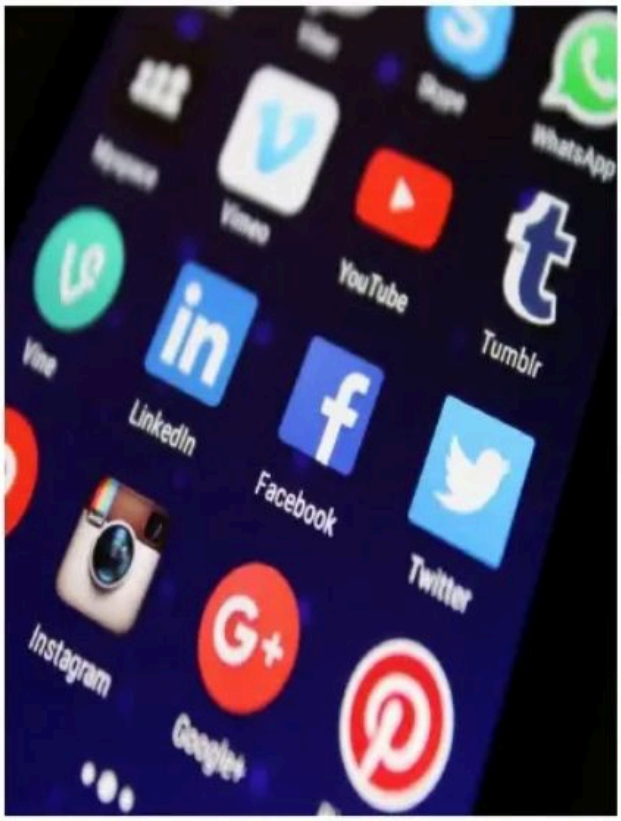
Password Strength Criteria

- Criteria:
- - Length ≥ 8 (+2)
- - Uppercase letter (+1)
- - Lowercase letter (+1)
- - Digit (+1)
- - Special character (+1)
- - No dictionary words (+1)



Strength Levels

- - Weak: Score ≤ 3
- - Moderate: Score 4–5
- - Strong: Score 6+



Sample Output

- Input: P@ssw0rd123
- Score: 6
- Strength: Strong
- Suggestion: Avoid common words like 'password'.

Results and Testing

- - Tested with various passwords.
- - Accurately identifies password strength.
- - Improved user awareness of password security.

Challenges Faced

- - Handling common patterns and dictionary words.
- - Balancing complexity and user-friendliness.
- - Educating users effectively

Future Enhancements

- - Integrate with password manager
- - AI-based analysis.
- - Multilingual feedback.
- - Browser extension/mobile app.

Conclusion

- - Helps users improve password hygiene.
- - Encourages better cybersecurity practices.
- - Can be extended to secure web applications.

Acknowledgement

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- I also appreciate the support from my friends for their encouragement and motivation.
- Finally, I thank all the resources and tools that made this work possible.

References

- - OWASP Guidelines
- - NIST Digital Identity Guidelines
- - Python Documentation

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