

Cybersecurity Mini Project Report

Project Title: PassPolicyCheck - Custom Password Policy Enforcer

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1. Introduction

In today's digital world, passwords serve as the first and most basic layer of protection for personal and professional data. While many systems recommend using "strong" passwords, organizations often enforce different password requirements based on security needs.

Our project, **PassPolicyCheck**, is designed to help enforce customized password policies, ensuring stronger password security tailored to specific system requirements.

2. Objectives

- To create a Python-based tool that checks whether a password meets custom policy rules.
- To help users and organizations follow better password hygiene practices.
- To simulate real-world password validation mechanisms used in login systems.

3. Tools and Technologies Used

- **Programming Language:** Python
- **Libraries:** string (for character type checks), built-in input/output functions
- **Platform:** Console-based (No internet or external libraries required)

4. Methodology

1. The user is prompted to enter a password.
2. The program verifies if the password meets all the following rules:
 - Minimum length (default: 8 characters)
 - At least one uppercase letter
 - At least one lowercase letter
 - At least one digit
 - At least one special character
3. Based on the checks, the tool provides feedback:
 - **"PASS"** if all criteria are met
 - **"FAIL"** with specific reasons if any rule is broken

5. Sample Output

Input: Atul@123

Output: PASS

- Meets all criteria

Input: atul123

Output: FAIL

- Missing uppercase letter
- Missing special character

6. Advantages

- Promotes secure password creation and management.
- Customizable rules make it adaptable for different systems.
- Pure Python-based solution, making it easy to integrate.

7. Future Scope

- Develop a **GUI-based version** using Tkinter or Streamlit.
- Integrate with login/signup systems for real-world applications.
- Implement a **password suggestion generator** to improve security.

8. Conclusion

PassPolicyCheck is a simple yet effective tool for enforcing custom password policies. It can be highly useful in colleges, offices, or any platform requiring secure authentication. With further improvements, it has the potential to evolve into a comprehensive password management module.