Python Mini Project Report

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Github Link: https://github.com/ananya5500/ananya5500/upload

Blogger: (Documentation in detail – (i)Abstract, (ii)Problem Statement, (iii)Objectives, (iv)Methodology, (v)Result Analysis, (vi)Conclusion, (vii)References – Base Research Paper, Website Link)

Abstract

This project focuses on creating a password generator using Python. Th e program allows users to generate random passwords of a desired length and with specific character types. It provides a flexible and customizable approach to password generation, enhancing security and convenience fo r users.

Objectives

- **The abstract introduces the main objective of the project, which is to create a password generator using Python.**
- **The project aims to automate the process of generating strong and random passwords to enhance online security.**

Problem Statement

- **The problem addressed by the project is the need for strong and unique passwords to protect user accounts from unauthorized access and potential security breaches.**
- **Manually generating such passwords can be time-consuming and challenging for users, leading to the risk of using weak and easily guessable passwords.**

Methodology

1. User inputs the desired length of the password and specifies the character types to include.
2. The program generates a random password based on the provided inputs, using a combination of lowercase letters, uppercase letters, digits, and speci al characters.
3. The generated password is displayed to the user.
4. Optionally, the user can choose to save the password in a text file for future reference.

Result Analysis

1. The code provides a simple password generator using Python's **random** and **string** modules.
2. Users can input the desired password length and select character types (lowercase, uppercase, digits, special characters).
3. However, the code lacks the necessary structure and indentation to execute correctly.
4. It doesn't handle errors or ensure cryptographically secure random password generation. Improvements are needed for better security and functionality.

Coding and Results (Snapshot)

```
import random
import string

def generate_password(length, include_lowercase=True, include_uppercase=True, include_digits=True, include_special_chars=True
    characters = ''
    if include_lowercase:
        characters += string.ascii_lowercase
    if include_uppercase:
        characters += string.ascii_uppercase
    if include_digits:
        characters += string.digits
    if include_special_chars:
        characters += string.punctuation

    password = ''.join(random.choice(characters) for _ in range(length))
    return password

length = int(input("Enter the desired length of the password: "))
include_lowercase = input("Include lowercase letters? (y/n): ").lower() == 'y'
include_uppercase = input("Include uppercase letters? (y/n): ").lower() == 'y'
include_digits = input("Include digits? (y/n): ").lower() == 'y'
include_special_chars = input("Include special characters? (y/n): ").lower() == 'y'

password = generate_password(length, include_lowercase, include_uppercase, include_digits, include_special_chars)
print("Generated Password: ", password)
```

```
Enter the desired length of the password: 9
Include lowercase letters? (y/n): y
Include uppercase letters? (y/n): n
Include digits? (y/n): n
Include special characters? (y/n): y
Generated Password:  d!"*ml>s@
```

Conclusion

- **The password generator project successfully addresses the problem of creating strong and unique passwords for online security.**
- **By automating the password generation process and considering user preferences, the project provides a convenient and reliable way for users to create secure passwords.**
- **To expand the project further, additional features like secure password storage and management could be incorporated to create a comprehensive password management system.**

References

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