FOURTH WEEK INTERNSHIP- PROJECT

**Aim:**

**Password Generator.**

**Project Overview:**

To design and build a Python program that generates strong, secure passwords. These passwords should meet modern security standards and be suitable for various applications.

**Project Objectives:**

- Research best practices for password security.

- Utilize Python's random library for generating random characters.

- Provide clear user instructions within your script.

**Requirements and Features:**

- Create a Python script that generates random passwords.

- Ensure the passwords are a mix of uppercase and lowercase letters, numbers, and special characters.

- Allow users to specify the length and number of passwords to generate.

Program:

import random

import string

def generate\_password(length=12):

characters = string.ascii\_letters + string.digits + string.punctuation

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

return password

def main():

print("Welcome to the Password Generator!")

print("----------------------------------")

num\_passwords = int(input("How many passwords would you like to generate? "))

password\_length = int(input("Enter the length of each password: "))

print("\nGenerating passwords...\n")

for \_ in range(num\_passwords):

password = generate\_password(password\_length)

print(password)

print("\nPasswords generated successfully!")

if \_\_name\_\_ == "\_\_main\_\_":

main()

**Output:**

Welcome to the Password Generator!

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How many passwords would you like to generate? 10

Enter the length of each password: 24

Generating passwords...

2[7YG<)=:1]CwJV!.0?zzz)Y

1j7#}P?T}y|s<JN,PI+>PDx^

)fGE)ls')C/7blAry$3(\_H4F

\_^q3HEG&i]eZG[w`6uMOfW6u

(4%yWai3\*W<F[O'f`n@H\$[~

R3@fa1eAc:nnNfYNSsp=@uhB

Vt:vjx@cc.df%YB~'Z'r1@^(

`Aip&'p.a}T(3K.\{9E?^Sbs

lLtdN+xvr$WK;]V86\$Iqu%P

Wr;VZjM7^#96m)$;Z'F,>R{=

Passwords generated successfully!

=== Code Execution Successful ===

**Explanation :**

**1.Import Libraries**: The script begins by importing the random and string modules. These libraries are necessary for generating random characters and accessing string constants.

**2.Define the generate\_password Function**: This function generates a random password of a specified length. It takes an optional argument length, which defaults to 12 if not provided.

* string.ascii\_letters: A string constant that contains all uppercase and lowercase letters.
* string.digits: A string constant that contains all digits (0-9).
* string.punctuation: A string constant that contains all punctuation characters.
* random.choice(characters): Randomly selects characters from the combined set of letters, digits, and punctuation.
* .join(...): Joins the randomly chosen characters together to form the password.

3. **Define the main Function**: This function acts as the main entry point of the script. It prompts the user to specify the number of passwords to generate and their desired length.

**4.Execute the main Function**: The script checks if it's being executed directly (not imported as a module) and then calls the main function.

Result:

Source code and output for **Password Generator** the using the python programming language .