**TASK – 3**

**PASSWORD GENERATOR**

A password generator is a useful tool that generates strong and random passwords for users. This project aims to create a password generator application using Python, allowing users to

specify the length and complexity of the password.

User Input: Prompt the user to specify the desired length of the password.

Generate Password: Use a combination of random characters to generate a password of the specified length.

Display the Password: Print the generated password on the screen.

**Code:-**

import random

import string

def generate\_password(length):

# Define the character set for the password

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

# Generate a random password

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

return password

def main():

# Prompt the user for the desired password length

while True:

try:

length = int(input("Enter the desired length of the password: "))

if length <= 0:

raise ValueError("Length must be a positive integer.")

break

except ValueError as ve:

print(ve)

# Generate and display the password

password = generate\_password(length)

print(f"Generated password: {password}")

# Run the main function

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

main()

**Explaination:-**

 **Character Set**: We use string.ascii\_letters for both uppercase and lowercase letters, string.digits for numbers, and string.punctuation for special characters.

 **Password Generation**: The generate\_password function creates a random password by selecting random characters from the defined set until the desired length is reached.

 **User Input Validation**: The main function ensures the user enters a positive integer for the password length. If the user enters invalid input, it prompts them again.

 **Display Password**: The generated password is displayed to the user.