**PYTHON PROJECT-RANDOM PASSWORD GENERATOR**

**FRONTEND CODE**

import string

import random

import tkinter as tk

from tkinter import ttk, messagebox

def generate\_password(length, use\_lower, use\_upper, use\_digits, use\_specials):

    chars = ""

    if use\_lower:

        chars += string.ascii\_lowercase

    if use\_upper:

        chars += string.ascii\_uppercase

    if use\_digits:

        chars += string.digits

    if use\_specials:

        chars += string.punctuation

    if not chars or length < 4:

        return ""

    # Ensure at least one of each selected type

    password = []

    if use\_lower:

        password.append(random.choice(string.ascii\_lowercase))

    if use\_upper:

        password.append(random.choice(string.ascii\_uppercase))

    if use\_digits:

        password.append(random.choice(string.digits))

    if use\_specials:

        password.append(random.choice(string.punctuation))

    password += [random.choice(chars) for \_ in range(length - len(password))]

    random.shuffle(password)

    return ''.join(password)

def on\_generate():

    user\_name = name\_var.get().strip()

    if not user\_name:

        messagebox.showerror("Input Error", "Please enter your name.")

        return

    try:

        length = int(length\_var.get())

    except ValueError:

        messagebox.showerror("Invalid Input", "Enter a valid number for password length.")

        return

    if length < 4:

        messagebox.showerror("Invalid Input", "Password length must be at least 4.")

        return

    pwd = generate\_password(

        length,

        lower\_var.get(),

        upper\_var.get(),

        digits\_var.get(),

        specials\_var.get()

    )

    if not pwd:

        messagebox.showerror("Selection Error", "Select at least one character type.")

        return

    result\_var.set(f"{user\_name}, your password: {pwd}")

    messagebox.showinfo("Thank You", "Thank you! Your password has been generated.")

# --- GUI Setup ---

root = tk.Tk()

root.title("Random Password Generator")

root.geometry("430x400")

root.resizable(False, False)

root.configure(bg="#ffe4ec")  # Soft pink background

style = ttk.Style()

style.theme\_use('clam')

style.configure("TLabel", font=("Segoe UI", 12), background="#ffe4ec")

style.configure("TButton", font=("Segoe UI", 11, "bold"), background="#ff69b4", foreground="#fff")

style.map("TButton", background=[("active", "#ff1493")])

header = tk.Label(root, text="Random Password Generator", font=("Segoe UI", 18, "bold"), bg="#ffe4ec", fg="#d72660")

header.pack(pady=18)

frame = tk.Frame(root, bg="#ffe4ec")

frame.pack(pady=5)

# --- User Name Entry ---

tk.Label(frame, text="Your Name:", bg="#ffe4ec", fg="#3a86ff", font=("Segoe UI", 12, "bold")).grid(row=0, column=0, sticky="w", pady=6)

name\_var = tk.StringVar()

name\_entry = ttk.Entry(frame, textvariable=name\_var, width=18, font=("Segoe UI", 12))

name\_entry.grid(row=0, column=1, padx=10, pady=6)

tk.Label(frame, text="Password Length:", bg="#ffe4ec", fg="#3a86ff", font=("Segoe UI", 12, "bold")).grid(row=1, column=0, sticky="w", pady=6)

length\_var = tk.StringVar(value="12")

length\_entry = ttk.Entry(frame, textvariable=length\_var, width=8, font=("Segoe UI", 12))

length\_entry.grid(row=1, column=1, padx=10, pady=6)

lower\_var = tk.BooleanVar(value=True)

upper\_var = tk.BooleanVar(value=True)

digits\_var = tk.BooleanVar(value=True)

specials\_var = tk.BooleanVar(value=False)

tk.Checkbutton(frame, text="Lowercase (a-z)", variable=lower\_var, bg="#ffe4ec", fg="#ff8800", font=("Segoe UI", 11, "bold")).grid(row=2, column=0, sticky="w")

tk.Checkbutton(frame, text="Uppercase (A-Z)", variable=upper\_var, bg="#ffe4ec", fg="#118ab2", font=("Segoe UI", 11, "bold")).grid(row=3, column=0, sticky="w")

tk.Checkbutton(frame, text="Digits (0-9)", variable=digits\_var, bg="#ffe4ec", fg="#06d6a0", font=("Segoe UI", 11, "bold")).grid(row=2, column=1, sticky="w")

tk.Checkbutton(frame, text="Special (!@#...)", variable=specials\_var, bg="#ffe4ec", fg="#ef476f", font=("Segoe UI", 11, "bold")).grid(row=3, column=1, sticky="w")

ttk.Button(root, text="Generate Password", command=on\_generate).pack(pady=18)

result\_var = tk.StringVar()

result\_label = tk.Label(

    root,

    textvariable=result\_var,

    font=("Segoe UI", 16, "bold"),

    bg="#fffbe7",

    fg="#d72660",

    relief="groove",

    bd=2,

    width=32,

    anchor="center",

    pady=10

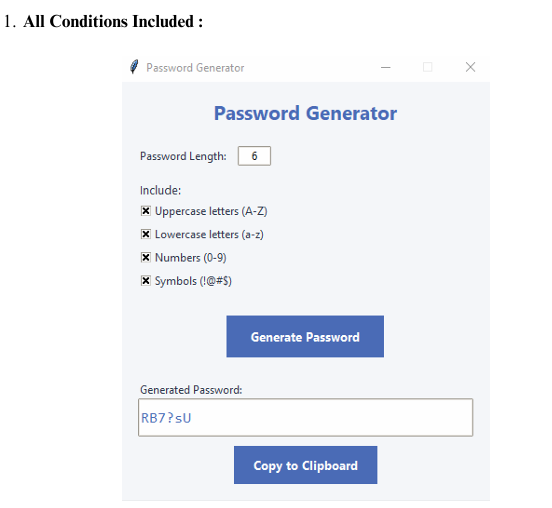
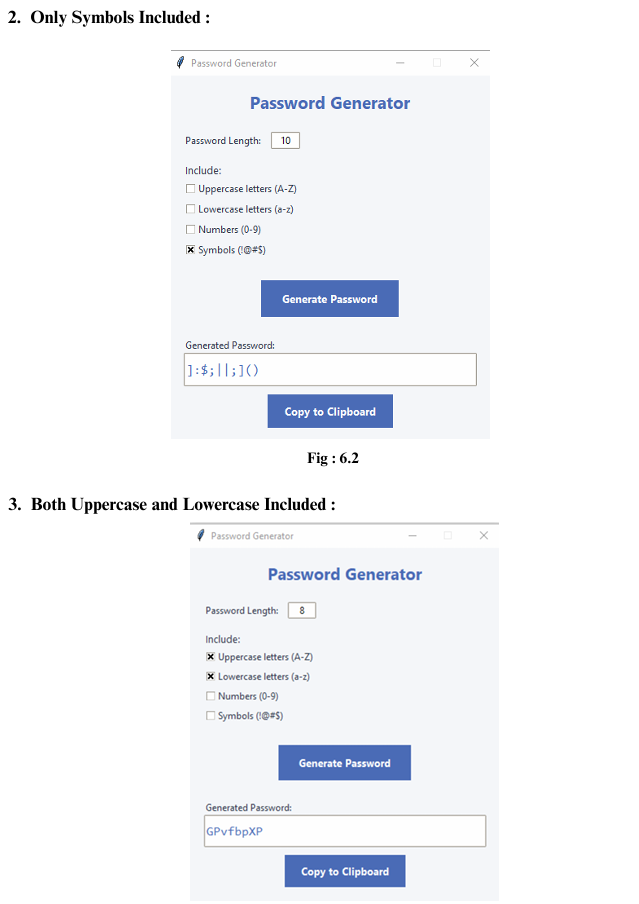
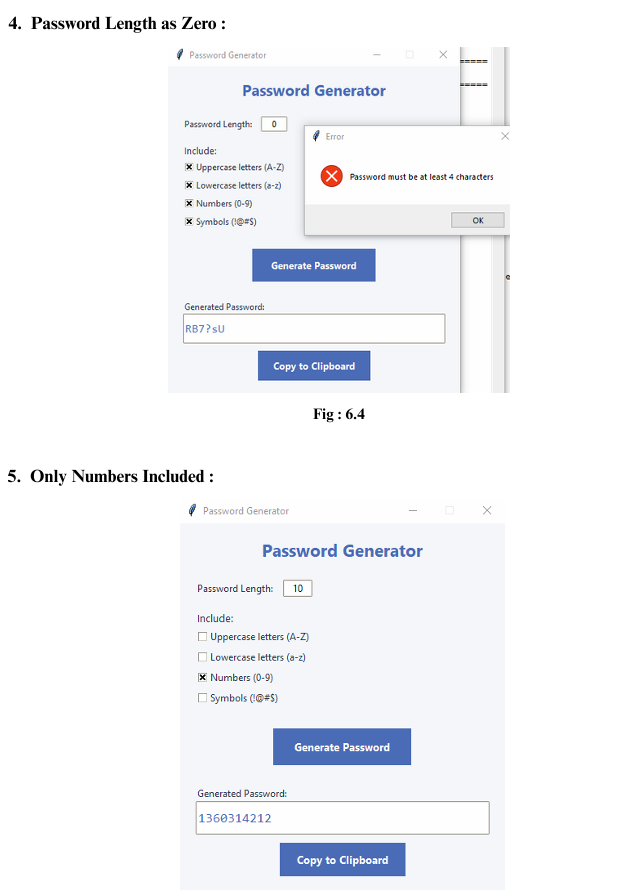
)

result\_label.pack(pady=12)

footer = tk.Label(root, text="© 2025 Password Generator", font=("Segoe UI", 10), bg="#ffe4ec", fg="#6c757d")

footer.pack(side="bottom", pady=8)

root.mainloop()

**** **** 

**OUTPUTS:**