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import tkinter as tk
from tkinter import ttk
from tkinter import messagebox
import random
class PasswordGenerator:
    def __init__(self, master):
    self.master = master
    self.master.title("Password Generator")
    self.master.geometry("1000x1000")
        # GUI elements
font_style = ("Arial", 12, "normal")
bold_font_style = ("Arial", 12, "bold")
         # Add a centered title
self.label title = tk.Label(master, text="GUI PASSWORD GENERATOR", font=("Arial", 14, "bold"), bg='#f0f0f0')
         self.label_title.pack(pady=10)
         self.label_length = tk.Label(master, text="Enter Password Length:", bg='#f0f0f0', font=bold_font_style)
self.label_length.pack()
         self.length var = tk.StringVar()
         self.entry_length = tk.Entry(master, textvariable=self.length_var, font=font_style)
self.entry_length.pack()
         self.label_options = tk.Label(master, text="Password Options:", bg='#f0f0f0', font=bold_font_style)  # Bold font for Password Options
         self.label options.pack()
         self.lower var = tk.IntVar()
         self.check_lower = tk.Checkbutton(master, text="Lowercase Letters", variable=self.lower_var, bg='#f0f0f0', font=font_style)
self.check_lower.pack()
         self.upper var = tk.IntVar()
          self.check_upper = tk.Checkbutton(master, text="Uppercase Letters", variable=self.upper_var, bg='#f0f0f0', font=font_style)
         self.check_upper.pack()
         self.check_digit = tk.Checkbutton(master, text="Digits", variable=self.digit_var, bg='#f0f0f0', font=font_style)
self.check_digit.pack()
         self.special_var = tk.IntVar()
self.check_special = tk.Checkbo
                                 tk.Checkbutton(master, text="Special Characters", variable=self.special_var, bg='#f0f0f0', font=font_style)
         self.check special.pack()
         self.generate button = tk.Button(master, text="Generate Password", command=self.generate password, bg='#4caf50', fg='white', font=bold font style)
         self.generate_button.pack()
         self.copy_button = tk.Button(master, text="Copy to Clipboard", command=self.copy_to_clipboard, bg='$2196F3', fg='white', font=font_style)
         self.copy_button.pack(pady=5)
         self.toggle_visibility_button = tk.Button(master, text="Toggle Visibility", command=self.toggle_visibility, bg='#2196F3', fg='white', font=font_style)
         self.toggle_visibility_button.pack(pady=5)
         self.progress_var = tk.DoubleVar()
self.progressbar = ttk.Progressbar(master, variable=self.progress_var, mode='indeterminate', length=300)
         self.progressbar.pack()
         self.label strength = tk.Label(master, text="Password Strength:", bg='#f0f0f0', font=font style)
         self.label_strength.pack()
         self.strength_var = tk.StringVar()
self.label_strength_value = tk.Label(master, textvariable=self.strength_var, font=("Arial", 10, "bold"), bg='#f0f0f0')
self.label_strength_value.pack()
         self.password_var = tk.StringVar()
self.entry_password = tk.Entry(master, textvariable=self.password_var, show='*', state='readonly', font=font_style) # Password is hidden by default
         self.entry_password.pack()
            lf.reset_button = tk.Button(master, text="Reset", command=self.reset_password, bg='$2196F3', fg='white', font=font_style)
         self.reset_button.pack(pady=10)
         # Add a Listbox for password history
         self.history_listbox = tk.Listbox(master, selectmode=tk.SINGLE, font=font_style, height=5) self.history_listbox.pack(pady=5)
         # Add an Entry for the name of the password in history
         self.history_name_var = tk.Entry(master, in instery self.history_name_var, font=font_style) self.entry_history_name = tk.Entry(master, textvariable=self.history_name_var, font=font_style)
         self.entry history name.pack(pady=5)
         # Add a label to display the total number of passwords in history
         self.label_total_passwords = tk.Label(master, text="Total Passwords in History: 0", bg='#f0f0f0', font=font_style) self.label_total_passwords.pack(pady=5)
         # Bind a callback to handle password selection from history
          self.history_listbox.bind('<Double-Button-1>', self.select_from_history)
    def generate password(self):
         try:
    length = int(self.length_var.get())
              if length <= 0:
                   raise ValueError("Password length must be greater than 0.")
              options = {
                   'lowercase': string.ascii_lowercase if self.lower_var.get() else '',
'uppercase': string.ascii_uppercase if self.upper_var.get() else '',
'digits': string.digits if self.digit_var.get() else '',
                   'special': string.punctuation if self.special_var.get() else ''
              characters = ''.join(options.values())
              if not characters:
    raise ValueError("Select at least one option for password generation.")
              self.progressbar.start(10)
              password = ''.join(random.choice(characters) for _ in range(length))
               elf.password var.set(password)
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strength = "Weak" if length < 8 else "Medium" if any([self.lower_var.get(), self.upper_var.get(), self.digit_var.get(), self.special_var.get()]) else "Strong"
                   self.strength var.set(strength)
                  # Update the password history
history_name = self.history_name_var.get()
                 if history_name:
    entry = f"{history_name}: {password}"
                  else:
                 entry = password
self.update_password_history(entry)
                  messagebox.showinfo("Thank You", "Thank you for using the Password Generator!")
            except ValueError as e:
                   messagebox.showerror("Password Generator", str(e))
            finally:
                 self.progressbar.stop()
     def update_password_history(self, password):
    # Add the generated password to the history
    self.history_listbox.insert(0, password)
    if self.history_listbox.size() > 5:
                  self.history_listbox.delete(5, tk.END)
            # Update the total number of passwords in history
total_passwords = self.history_listbox.size()
self.label_total_passwords.config(text=f"Total Passwords in History: {total_passwords}")
      def reset password(self):
            # Ask for confirmation before resetting
response = messagebox.askquestion("Reset Confirmation", "Are you sure you want to reset?")
            if response == 'yes':
    # Reset the generated password and clear the options
                  self.password_var.set("")
self.length_var.set("")
                 self.lower_var.set(0)
self.upper_var.set(0)
self.digit_var.set(0)
self.special_var.set(0)
self.strength_var.set("")
                  self.history_name_var.set("")
self.history_listbox.delete(0, tk.END)
                  self.label_total_passwords.config(text="Total Passwords in History: 0")
     def copy_to_clipboard(self):
    password_to_copy = self.password_var.get()
    if password_to_copy:
        self.master.clipboard_clear()
                  self.master.clipboard_append(password_to_copy)
                 self.master.update()
messagebox.showinfo("Copy to Clipboard", "Password copied to clipboard!")
      def toggle_visibility(self):
            current_state = self.entry_password["show"]
new_state = "" if current_state == "*" else "*"
self.entry_password["show"] = new_state
      def select_from_history(self, event):
            selected_index = self.history_listbox.curselection()
            if selected index:
                  selected_index:
selected_password = self.history_listbox.get(selected_index[0])
# Extract password from the history entry (if there is a name associated)
extracted_password = selected_password.split(": ", 1)[-1]
                  self.password_var.set(extracted_password)
def main():
     root = tk.Tk()
app = PasswordGenerator(root)
      root.configure(bg="skyblue")
      root.mainloop()
     __name__ == "__main__":
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