import tkinter as tk

from tkinter import messagebox

import random

import string

# Fungsi untuk mengubah plaintext ke ciphertext menggunakan One-Time Pad

def encrypt\_otp(plaintext, key):

ciphertext = []

for p, k in zip(plaintext, key):

encrypted\_char = chr(((ord(p) - 65) + (ord(k) - 65)) % 26 + 65)

ciphertext.append(encrypted\_char)

return ''.join(ciphertext)

# Fungsi untuk mengubah ciphertext ke plaintext menggunakan One-Time Pad

def decrypt\_otp(ciphertext, key):

plaintext = []

for c, k in zip(ciphertext, key):

decrypted\_char = chr(((ord(c) - 65) - (ord(k) - 65)) % 26 + 65)

plaintext.append(decrypted\_char)

return ''.join(plaintext)

# Fungsi untuk menghasilkan kunci acak (One-Time Pad)

def generate\_key(length):

return ''.join(random.choice(string.ascii\_uppercase) for \_ in range(length))

# Fungsi untuk enkripsi

def encrypt\_text():

plaintext = entry\_plaintext.get().upper()

if not plaintext.isalpha():

messagebox.showwarning("Input Error", "Plaintext hanya boleh berisi huruf.")

return

key = generate\_key(len(plaintext))

ciphertext = encrypt\_otp(plaintext, key)

entry\_key.delete(0, tk.END)

entry\_key.insert(0, key)

entry\_ciphertext.delete(0, tk.END)

entry\_ciphertext.insert(0, ciphertext)

# Fungsi untuk dekripsi

def decrypt\_text():

ciphertext = entry\_plaintext.get().upper()

key = entry\_key.get().upper()

if len(ciphertext) != len(key) or not ciphertext.isalpha() or not key.isalpha():

messagebox.showwarning("Input Error", "Ciphertext dan kunci harus berisi huruf dengan panjang yang sama.")

return

plaintext = decrypt\_otp(ciphertext, key)

entry\_ciphertext.delete(0, tk.END)

entry\_ciphertext.insert(0, plaintext)

# Membuat jendela aplikasi

root = tk.Tk()

root.title("One-Time Pad Encryption")

# Label dan Entry untuk memasukkan plaintext

label\_plaintext = tk.Label(root, text="Plaintext / Ciphertext:")

label\_plaintext.grid(row=0, column=0, padx=10, pady=10)

entry\_plaintext = tk.Entry(root, width=50)

entry\_plaintext.grid(row=0, column=1, padx=10, pady=10)

# Label dan Entry untuk menampilkan / memasukkan kunci

label\_key = tk.Label(root, text="Kunci (Key):")

label\_key.grid(row=1, column=0, padx=10, pady=10)

entry\_key = tk.Entry(root, width=50)

entry\_key.grid(row=1, column=1, padx=10, pady=10)

# Tombol Enkripsi

button\_encrypt = tk.Button(root, text="Enkripsi", command=encrypt\_text)

button\_encrypt.grid(row=2, column=0, padx=10, pady=10)

# Tombol Dekripsi

button\_decrypt = tk.Button(root, text="Dekripsi", command=decrypt\_text)

button\_decrypt.grid(row=2, column=1, padx=10, pady=10)

# Label dan Entry untuk menampilkan ciphertext atau plaintext yang dihasilkan

label\_ciphertext = tk.Label(root, text="Hasil:")

label\_ciphertext.grid(row=3, column=0, padx=10, pady=10)

entry\_ciphertext = tk.Entry(root, width=50)

entry\_ciphertext.grid(row=3, column=1, padx=10, pady=10)

# Menjalankan aplikasi Tkinter

root.mainloop()