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import tkinter as tk
from PIL import Image, ImageTk
import speech_recognition as sr
import pyttsx3
import pywhatkit
import datetime
import pyjokes
import requests
from bs4 import BeautifulSoup
from urllib.parse import quote
import webbrowser
import os

class AlexaGUI:
    def __init__(self, root):
        self.root = root
        self.root.title("Alexa Assistant")
        self.root.configure(bg="Green")
        self.root.geometry("500x400")

        self.heading_frame = tk.Frame(self.root, bg="Green")
        self.heading_frame.pack(pady=20)

        self.heading_photo = None # Add this line to hold the reference
        self.alexa_photo = None # Add this line to hold the reference

        try:
            self.heading_image = Image.open("ale.png")
            self.heading_image = self.heading_image.resize((250, 80))
            self.heading_photo = ImageTk.PhotoImage(self.heading_image)
            self.heading_label = tk.Label(self.heading_frame, image=self.heading_photo, bd=0,
bg="lightblue")
            self.heading_label.pack()
        except FileNotFoundError:
            self.heading_label = tk.Label(self.heading_frame, text="Alexa", font=("Arial", 24),
bg="lightblue")
            self.heading_label.pack()

        self.dark_blue_frame = tk.Frame(self.root, bg="lightpink")
        self.dark_blue_frame.pack(pady=0, padx=0, fill=tk.BOTH, expand=True)

        self.arrow_label = tk.Label(self.dark_blue_frame, text="Click here to start ALEXA", font=("Arial",
13), fg="white", bg="darkblue")
        self.arrow_label.grid(row=0, column=0, padx=(0, 0))
        self.start_label = tk.Label(self.dark_blue_frame, text="➔", font=("Arial", 16), fg="white",
bg="red")
        self.start_label.grid(row=0, column=1, padx=10)

        try:
            self.alexa_image = Image.open("Alexa_image.png")
            self.alexa_image = self.alexa_image.resize((200, 200))
            self.alexa_photo = ImageTk.PhotoImage(self.alexa_image)
            self.alexa_button = tk.Button(self.dark_blue_frame, image=self.alexa_photo, bd=0,
bg="darkblue", command=self.on_alexa_click)
            self.alexa_button.grid(row=0, column=2, padx=10)
        except FileNotFoundError:

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        self.alex_button = tk.Button(self.dark_blue_frame, text="Start Alexa", font=("Arial", 18), bd=0,
bg="darkblue", fg="white", command=self.on_alex_click)
        self.alex_button.grid(row=0, column=2, padx=10)

        self.listener = sr.Recognizer()
        self.engine = pyttsx3.init()
        self.voices = self.engine.getProperty("voices")
        self.engine.setProperty("voice", self.voices[1].id)

        self.footer_frame = tk.Frame(self.root, bg="black", bd=1, relief=tk.SUNKEN)
        self.footer_frame.pack(side=tk.BOTTOM, fill=tk.X)

        self.created_by_label = tk.Label(self.footer_frame, text="Created by RAHUL", font=("Arial", 14),
fg="white", bg="black")
        self.created_by_label.pack(pady=7)

    def talk(self, text):
        self.engine.say(text)
        self.engine.runAndWait()

    def alexa_command(self):
        max_attempts = 2
        attempt = 0
        command = ""

        while attempt < max_attempts:
            try:
                with sr.Microphone() as source:
                    print("Listening...")
                    voice = self.listener.listen(source)
                    command = self.listener.recognize_google(voice)
                    command = command.lower()
                    if "alexa" in command:
                        command = command.replace("alexa", "")
                        self.talk(command)
                        break
            except sr.UnknownValueError:
                self.talk("Unable to detect voice, please try again.")
                attempt += 1
            except sr.RequestError:
                self.talk("Sorry, my speech recognition service is not available at the moment.")
                break

        return command

    def google_search(self, query):
        encoded_query = quote(query)
        url = f"https://www.google.com/search?q={encoded_query}"
        headers = {"User-Agent": "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/91.0.4472.124 Safari/537.36"}
        response = requests.get(url, headers=headers)
        soup = BeautifulSoup(response.text, 'html.parser')
        search_results = soup.find_all('div', class_='tF2Cxc')
        if search_results:

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        result = search_results[0].find('div', class_='yuRUbf').a
        title = result.text
        link = result['href']
        return title, link
    else:
        return "No results found", ""

def run_alexa(self):
    command = self.alexa_command()
    print(command)
    if "play" in command:
        song = command.replace("play", "")
        self.talk("Playing" + song)
        pywhatkit.playonyt(song)
    elif "time" in command:
        time = datetime.datetime.now().strftime("%H:%M")
        print(time)
        self.talk("Current time is" + time)
    elif "joke" in command:
        self.talk(pyjokes.get_joke())
    elif "search" in command:
        query = command.replace("search", "")
        self.talk("Searching Google for " + query)
        title, link = self.google_search(query)
        if title != "No results found":
            self.talk("Top result: " + title)
            print("Top result:", title)
            print("Link:", link)
            self.talk("Opening the top search result in your web browser.")
            webbrowser.open(link)
        else:
            self.talk("Sorry, no results found for " + query)

def on_alexa_click(self):
    self.talk("Hi, I am your Alexa. What can I do for you?")
    self.run_alexa()

if __name__ == "__main__":
    root = tk.Tk()
    app = AlexaGUI(root)
    root.mainloop()

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