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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

class AlexaGUI:
    def __init__(self, root):
        self.root = root
        self.root.title("Alexa Assistant")
        self.root.configure(bg="grey")


        self.root.geometry("500x400")

        self.heading_frame = tk.Frame(self.root, bg="lightblue", bd=4,
relief=tk.SOLID)
        self.heading_frame.pack(pady=20)


        self.heading_image = Image.open("h.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()


        self.dark_blue_frame = tk.Frame(self.root, bg="darkblue", bd=4,
relief=tk.SOLID)
        self.dark_blue_frame.pack(pady=0, padx=0, fill=tk.BOTH,
expand=True)
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        self.arrow_label = tk.Label(self.dark_blue_frame, text="Click
here to start ALEXA", font=("Times New Roman", 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="darkblue")
        self.start_label.grid(row=0, column=1, padx=10)


        self.alexa_image = Image.open("al.jpeg")
        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=5, bg="darkblue",
command=self.on_alexa_click)
        self.alexa_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 NEELAM", font=("Times New Roman", 14), fg="white",
bg="black")
        self.created_by_label.pack(pady=7)


        self.alexa_active = False

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

    def alexa_command(self):
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        max_attempts = 3
        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", "")
                        break
                    else:
                        self.talk("Unable to detect voice, please try
again.")
                        attempt += 1
            except sr.UnknownValueError:
                attempt += 1
                self.talk("Unable to detect voice, please try again.")
            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:

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

    def run_alexa(self):
        if not self.alexa_active:
            self.alexa_active = True
            self.talk("Hi, I am your Alexa. What can I do for you?")
        command = self.alexa_command()
        print(command)
        if "thank you" in command:
            self.talk("You're welcome!")
            self.talk("Goodbye!")
            self.alexa_active = False
        elif "play" in command:
            song = command.replace("play", "")
            self.talk("Playing " + song)
            pywhatkit.playonyt(song)
        elif "time" in command:
            current_time = datetime.datetime.now().strftime("%H:%M")
            print(current_time)
            self.talk("Current time is " + current_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.run_alexa()

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