Signboard translation from vernacular languages

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CODE OF THE APPLICATION

Code: Webpage

<html>

<head>

    <meta charset="UTF-8">

    <meta name="viewport" content="width=device-width, initial-scale=1.0">

    <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/4.0.0/css/bootstrap.min.css" integrity="sha384-Gn5384xqQ1aoWXA+058RXPxPg6fy4IWvTNh0E263XmFcJlSAwiGgFAW/dAiS6JXm" crossorigin="anonymous">

    <script src="https://code.jquery.com/jquery-3.6.0.min.js" integrity="sha256-/xUj+3OJU5yExlq6GSYGSHk7tPXikynS7ogEvDej/m4=" crossorigin="anonymous"></script>

    <script>

        var uploadedimage;

        function captureFile()

        {

            let file = document.getElementById("file-id").files;

            let filereader = new FileReader();

            filereader.onload = function(filedata)

            {

                // custom function , filedata.target.result -> contains nase64 string

                let image = document.getElementById("image");

                image.src=filedata.target.result;

                uploadedimage=image.src;

            }

            filereader.readAsDataURL(file[0]);

        }

        function loadDoc(event)

        {

            event.preventDefault();

            var form=new FormData()

            form.append("from",document.getElementsByName("from")[0].value)

            form.append("to",document.getElementsByName("to")[0].value)

            form.append("img1",document.getElementsByName("img1")[0].files[0])

            var xhttp = new XMLHttpRequest();

            xhttp.onreadystatechange = function()

            {

                if (this.readyState == 4 && this.status == 200)

                {

                    output=JSON.parse(this.responseText);

                    string=""

                    document.getElementById("output").innerHTML="<center>"+"Translated text: "+output["text"]+"</center>"+"<br>"

                }

            };

            xhttp.open("POST", "http://127.0.0.1:5000/image\_data", true);

            xhttp.send(form);

        }

    </script>

</head>

<style>

    body{

      margin-bottom: 0%;

      /\*background-image: url("https://images.unsplash.com/photo-1486819118102-d9171cf69a92?ixid=MnwxMjA3fDB8MHxwaG90by1wYWdlfHx8fGVufDB8fHx8&ixlib=rb-1.2.1&auto=format&fit=crop&w=1649&q=80");\*/

      /\*background-image: url("https://images.unsplash.com/photo-1539632346654-dd4c3cffad8c?ixid=MnwxMjA3fDB8MHxwaG90by1wYWdlfHx8fGVufDB8fHx8&ixlib=rb-1.2.1&auto=format&fit=crop&w=1650&q=80");\*/

      background-image: url("https://images.unsplash.com/photo-1562776903-cc60d622df72?ixid=MnwxMjA3fDB8MHxwaG90by1wYWdlfHx8fGVufDB8fHx8&ixlib=rb-1.2.1&auto=format&fit=crop&w=3900&q=80");

      background-size: cover;

      min-height:100%;

      background-position: center center;

      background-repeat: no-repeat;

      background-attachment: fixed;

      backdrop-filter: blur(8px);

    }

    h1{

        margin-bottom: 2rem;

        font-family:Arial, Helvetica, sans-serif;

        font-style: italic;

        font-weight: bold;

    }

    legend{

      font-weight: 600;

    }

    form{

        margin : 1rem 20rem 1rem 20rem;

    }

    button{

        width: 100%;

    }

    fieldset{

        background-color: white;

        margin-top : 1rem;

        margin-bottom : 1rem;

        padding: 1rem 2rem 1rem 2rem;

        border-radius: 8px;

    }

    label[for]{

        font-weight: bold;

    }

    #output{

        font-weight: bold;

        margin-top: 2rem;

        font-size:150%;

    }

</style>

<body>

    <p><br></p>

    <h1><center>Sign board translator</center></h1>

    <form method="POST" action="/image\_data" enctype="multipart/form-data" onsubmit="loadDoc(event)">

        <fieldset>

            <div class="form-row">

               <div class="col">

                  <div class="form-group">

                     <label for="from">From</label>

                     <select name="from" class="form-control">

                        <option value="hi">Hindi</option>

                        <option value="ta">Tamil</option>

                        <option value="as">Assamese</option>

                        <option value="en">English</option>

                        <option value="bn">Bengali</option>

                        <option value="ka">Kannada</option>

                        <option value="mr">Marathi</option>

                        <option value="te">Telugu</option>

                        <option value="ur">Urdu</option>

                    </select>

                  </div>

               </div>

            </div>

            <div class="form-row">

                <div class="col">

                   <div class="form-group">

                      <label for="to">To</label>

                      <select name="to" class="form-control">

                         <option value="hi">Hindi</option>

                         <option value="ta">Tamil</option>

                         <option value="as">Assamese</option>

                         <option value="en">English</option>

                         <option value="bn">Bengali</option>

                         <option value="ka">Kannada</option>

                         <option value="mr">Marathi</option>

                         <option value="te">Telugu</option>

                         <option value="ur">Urdu</option>

                     </select>

                   </div>

                </div>

            </div>

            <div class="form-row">

                <div class="col">

                   <div class="form-group">

                      <label for="file-id">Select image</label>

                      <input type="file" onchange="captureFile()" id="file-id" name="img1" class="form-control-file">

                   </div>

                </div>

            </div>

            <div class="form-row">

                <div class="col">

                   <div class="form-group">

                     <center><img id="image" height="300" width="550"></center>

                   </div>

                </div>

            </div>

        </fieldset>

        <!--<input type="file" onchange="captureFile()" id="file-id" name="img1"><br>-->

        <!--<a href="/store\_file"><button onclick="display\_image()">Choose file</button></a><br>-->

        <button type="submit" class="btn btn-info">Translate</button><br>

        <div id="output"><center>Translated text:Your output will be displayed here</center></div><br><br>

    </form>

</body>

</html>

Code: Flask Server

from flask import Flask, json, render\_template, request,jsonify

from flask import send\_from\_directory

from PIL import Image

from tkinter import filedialog

from werkzeug.utils import secure\_filename

from text\_detector import detect\_recognise

import easyocr

import pyttsx3

from google\_trans\_new import google\_translator

import cv2

import numpy as np

import os

app=Flask(\_\_name\_\_)

app.config['UPLOAD\_FOLDER']="./Uploads"

@app.route("/")

def initial():

    return render\_template("initial.html")

@app.route("/image\_data",methods=["GET","POST"])

def translate():

    f = request.files['img1']

    f.save(os.path.join(app.config['UPLOAD\_FOLDER'], secure\_filename(f.filename)))

    path="Uploads/"+f.filename

    string=detect\_recognise(request.form['from'],request.form['to'],path)

    engine = pyttsx3.init()

    engine.setProperty('rate', 125)

    engine.say(string)

    engine.runAndWait()

    text={}

    text['text']=string

    return jsonify(text)

if \_\_name\_\_ == '\_\_main\_\_':

   app.run(debug = True)

Code: Text detector

import easyocr

import pyttsx3

from google\_trans\_new import google\_translator

def detect\_recognise(l\_from,l\_to,path):

    reader1=easyocr.Reader([l\_from])

    output=reader1.readtext(path)

    translator = google\_translator()

    translate\_text=""

    for i in range(len(output)):

        try:

            if(output[i][2]>0.4):

                translate\_text += translator.translate(output[i][1],lang\_tgt=l\_to)

        except:

            print()

    return translate\_text