from flask import Flask, redirect, render\_template, request  
import string  
import random  
import sqlite3  
  
app = Flask(\_\_name\_\_)  
conn = sqlite3.connect('urls.db')  
cursor = conn.cursor()  
  
def initialize\_database():  
 cursor.execute('''  
 CREATE TABLE IF NOT EXISTS urls (  
 id INTEGER PRIMARY KEY AUTOINCREMENT,  
 long\_url TEXT NOT NULL,  
 short\_url TEXT NOT NULL  
 );  
 ''')  
 conn.commit()  
  
def generate\_short\_url():  
 characters = string.ascii\_letters + string.digits  
 short\_url = ''.join(random.choice(characters) for \_ in range(6))  
 return short\_url  
  
@app.route('/')  
def index():  
 return render\_template('index.html')  
  
@app.route('/shorten', methods=['POST'])  
def shorten\_url():  
 long\_url = request.form.get('url')  
 if long\_url:  
 cursor.execute("SELECT short\_url FROM urls WHERE long\_url=?", (long\_url,))  
 existing\_short\_url = cursor.fetchone()  
 if existing\_short\_url:  
 return existing\_short\_url[0]  
 else:  
 short\_url = generate\_short\_url()  
 cursor.execute("INSERT INTO urls (long\_url, short\_url) VALUES (?, ?)", (long\_url, short\_url))  
 conn.commit()  
 return short\_url  
 return "Invalid URL"  
  
@app.route('/<short\_url>')  
def redirect\_url(short\_url):  
 cursor.execute("SELECT long\_url FROM urls WHERE short\_url=?", (short\_url,))  
 long\_url = cursor.fetchone()  
 if long\_url:  
 return redirect(long\_url[0])  
 return "Invalid short URL"  
  
if \_\_name\_\_ == '\_\_main\_\_':  
 initialize\_database()  
 app.run()