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const express = require('express');
const axios = require('axios');
const app = express();
const port = 3000;
const key = 'ba8c466e3b9549c044e27d3cbe3f04b2';

app.use(express.json());
app.use(express.static('public'))

function formatingData(dateDict) {
  let dataToReturn = [], averageTemps = [];
  let umbrella = "No", mask = "No";

  for(date in dateDict) {
    let data = [date];
    let mainWeather = dateDict[date].shift();
    let pollution = dateDict[date].shift();

    if(mainWeather.includes('Rain')) { umbrella = "Yes"; }

    let temps = dateDict[date].map( (v) => v.slice(0, 1) );
    temps = [].concat.apply([], temps);
    let windSpeed = dateDict[date].map( (v) => v.slice(1, -1) );
    windSpeed = [].concat.apply([], windSpeed);
    let rainfall = dateDict[date].map( (v) => v.splice(2, 1) );
    rainfall = [].concat.apply([], rainfall);

    let avgTemp = temps.reduce((a, b) => a + b, 0) / temps.length;
    averageTemps.push(avgTemp);

    if( Math.max(pollution) >= 10.0 ) { mask = "Yes" }

    data.push(Math.min(...temps));
    data.push(Math.max(...temps));
    data.push(Math.max(...windSpeed));
    data.push(rainfall.reduce((a, b) => {
      if(b != undefined) { return a + b } else {return a }
    }, 0));

    dataToReturn.push(data);
  }
  dataToReturn.unshift(mask);
  let avgTemps = averageTemps.reduce((a, b) => a + b, 0) / averageTemps.length;
  if(avgTemps < 10.0) { dataToReturn.unshift("Cold") }
  else if(avgTemps >= 10.0 && avgTemps <= 20.0) { dataToReturn.unshift("Warm") }
  else dataToReturn.unshift("Hot");
  dataToReturn.unshift(umbrella);

  return dataToReturn;
}

app.get('/', function(req, res) {
  res.sendFile(__dirname + "/" + "index.html");
})

app.put('/city', function(req, res) {
  let city = req.body.city, data, lat, long;

  axios({

```

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    method: 'get',
    url: 'https://api.openweathermap.org/data/2.5/forecast',
    params: {
      q: city,
      appid: key,
      units: 'metric',
    }
  }).then(function(response) {
    data = response.data;

    // just going to group the data into a dict, where the key is the date
    // that some forecast belongs too, the value will be a list containing all data we
    // are concerned with for that date
    dataPoints = data.list;
    let dateDict = {};

    for(d in dataPoints) {
      let dta = dataPoints[d];
      let date = dta.dt_txt.substr(5, 5).split('');
      [date[0], date[1], date[2], date[3], date[4]] = [date[3], date[4],
date[2], date[0], date[1]];
      date = date.join('');
      if( !(date in dateDict) ) {
        dateDict[date] = [];
        // adding two empty lists that will contain the main weather and
        // the pollution data
        dateDict[date].push([]);
        dateDict[date].push([]);
      }

      dateDict[date][0].push(dta.weather[0].main);

      let rain = dta.rain;
      // if there is no rain during the 3 hour period, there will be no
      // rain field, otherwise there will be a rain field and a 3h key within it that will
      // contain the data
      if(rain != undefined) {
        dateDict[date].push([dta.main.temp, dta.wind.speed, rain['3h']])
      } else {
        dateDict[date].push([dta.main.temp, dta.wind.speed, rain])
      }
    }
    lat = data.city.coord.lat, long = data.city.coord.lon
    axios({
      method: 'get',
      url: `https://api.openweathermap.org/data/2.5/air_pollution/forecast?
lat=${lat}&lon=${long}&appid=${key}`,
    }).then(function(response) {
      dataPoints = response.data.list;
      // put the pollution data into the correct date in the dateDict
      for(d in dataPoints) {
        let dta = dataPoints[d];
        let date = new Date(null);
        date.setSeconds(dta.dt);
        date = date.toISOString().substr(5,5).split('');
        [date[0], date[1], date[2], date[3], date[4]] = [date[3],
date[4], date[2], date[0], date[1]];
        date = date.join('');
        if(dateDict[date] != undefined) {
          dateDict[date][1].push(dta.components.pm2_5);

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    }  
  }  
  data = formattingData(dateDict);  
  res.send(data);  
}).catch(function(error) {  
  console.log(error);  
  res.send(data);  
})  
}).catch(function(error) {  
  console.log(error)  
  res.end()  
})  
})  
  
app.listen(port, () => console.log(`Example app listening on port ${port}!`));
```