```
//IMPORTANT INFORMATION:
//The JavaScript component is the main component of the code.
//The variable data is the dataset containing the information to build the map and is already defined
based on the Python code.
//This is based on HTML and SVG. It only runs with the right HTML and SVG already existing.

//A choropleth map is a map where shapes are filled in, such as countries in the map in this program.


loadMap();
function loadMap(){

        //Opens where the map should go in the SVG
        var svg = document.getElementById("polygroup");
        var svgMetadata = data["map"]["metadata"];
        var entireSVG = document.getElementById("svgmap");

        //Adjust height and width
        entireSVG.setAttribute("height",svgMetadata["height"]);
        entireSVG.setAttribute("width",svgMetadata["width"]);

        //Map points
        var svgPoints = data["map"]["data"];

        //Choropleth map data
        var choropleth = data["data"]["data"][data["choropleth"]["source"]];
        var choropleth_min = Math.min.apply(null,choropleth);
        var choropleth_max = Math.max.apply(null,choropleth);
        var choropleth_range = choropleth_max - choropleth_min;

        //Choropleth map colors
        var choropleth_colors = data["choropleth"]["colors"];
        var choropleth_red_min = choropleth_colors["r"][0];
        var choropleth_red_max = choropleth_colors["r"][1];
        var choropleth_green_min = choropleth_colors["g"][0];
        var choropleth_green_max = choropleth_colors["g"][1];
        var choropleth_blue_min = choropleth_colors["b"][0];
        var choropleth_blue_max = choropleth_colors["b"][1];
        var choropleth_red_range = choropleth_red_max - choropleth_red_min;
        var choropleth_green_range = choropleth_green_max - choropleth_green_min;
        var choropleth_blue_range = choropleth_blue_max - choropleth_blue_min;

        //Ordered list of territories
        var territory_list = data["data"]["territory_list"];

        //Infobox
        var infobox_styles = data["infobox"]["style"];
        var infobox_styles_text = infobox_styles["text"];
        var infobox_text = data["infobox"]["text"];

        //Draw map
        var polyPoints;
        var jsonPoint;
        var country;
        var poly;

        var rescaleY = svgMetadata["height"] / 180;
        var rescaleX = svgMetadata["width"] / 360;
        var translateY = svgMetadata["translate"][1];
        var translateX = svgMetadata["translate"][0];
        var zoom = svgMetadata["scale"];
        var pointX;
        var pointY;
        for (var countryData in svgPoints){
                polyPoints = ""
                for (jsonPoint in svgPoints[countryData]["Points"]){
                        pointX = (svgPoints[countryData]["Points"][jsonPoint][0] - translateX) * 
rescaleX * zoom;
                        pointY = (180 / zoom - svgPoints[countryData]["Points"][jsonPoint][1] + 
translateY) * rescaleY * zoom;
                        polyPoints = polyPoints + pointX + "," + pointY + " ";
                }
                polyPoints = polyPoints.substring(0,polyPoints.length-1);
                poly = document.createElementNS("http://www.w3.org/2000/svg","polygon");
                poly.setAttributeNS(null,"points",polyPoints);
                poly.setAttributeNS(null,"class",svgPoints[countryData]["Country"]);
                poly.setAttributeNS(null,"style","fill:lime;stroke:purple;stroke-width:0.5");
                svg.appendChild(poly);

        }
        colorMap();
}
function colorMap(){

        //Choropleth map data
        var choropleth = data["data"]["data"][data["choropleth"]["source"]];
        var choropleth_min = Math.min.apply(null,choropleth);
        var choropleth_max = Math.max.apply(null,choropleth);
        var choropleth_range = choropleth_max - choropleth_min;

        //Choropleth map colors
        var choropleth_colors = data["choropleth"]["colors"];
        var choropleth_red_min = choropleth_colors["r"][0];
        var choropleth_red_max = choropleth_colors["r"][1];
        var choropleth_green_min = choropleth_colors["g"][0];
        var choropleth_green_max = choropleth_colors["g"][1];
        var choropleth_blue_min = choropleth_colors["b"][0];
        var choropleth_blue_max = choropleth_colors["b"][1];
        var choropleth_red_range = choropleth_red_max - choropleth_red_min;
        var choropleth_green_range = choropleth_green_max - choropleth_green_min;
        var choropleth_blue_range = choropleth_blue_max - choropleth_blue_min;

        //Ordered list of territories
        var territory_list = data["data"]["territory_list"];

        //Color map
        for (var j in territory_list){

                //Get country on map
                country = document.getElementsByClassName(territory_list[j]);

                //Scale data
                var data_proportional = (choropleth[j] - choropleth_min) / choropleth_range;

                //Calculate colors
                var red = data_proportional * choropleth_red_range + choropleth_red_min;
                var green = data_proportional * choropleth_green_range + choropleth_green_min;
                var blue = data_proportional * choropleth_blue_range + choropleth_blue_min;

                var color = "rgb(" + red + "," + green + "," + blue + ")";

                for (var i = 0; i < country.length; i++){
                        country[i].style.fill = color;
                        country[i].setAttribute("onmousemove",data["inputs"]["onHover"].replaceAll("
[COUNTRY]",j));
                        country[i].setAttribute("onmouseout",data["inputs"]
["onMouseOut"].replaceAll("[COUNTRY]",j));
                        country[i].setAttribute("onclick",data["inputs"]["onClick"].replaceAll("
[COUNTRY]",j));
                }
        }
}

function showInfobox(c){

        //Infobox
        var infobox_styles = data["infobox"]["style"];
        var infobox_styles_text = infobox_styles["text"];
        var infobox_text = data["infobox"]["text"];


        //Text
        var textPopUpParent = document.getElementById("dataInfo");
        var textPopUpList = [];
        var textPopUpText;

        //Sort text containers into lines
        for(var i in infobox_text){
                while(textPopUpList.length <= infobox_text[i]["line"]){
                        textPopUpList.push([]);
                }
                textPopUpText = {};
                textPopUpText["text"] = infobox_text[i]["text"];
                textPopUpText["type"] = infobox_text[i]["type"];
                textPopUpText["style"] = infobox_styles_text[i];
                textPopUpList[infobox_text[i]["line"]].push(textPopUpText);
        }

        //Create text
        var textX;
        var textY;
        var numberLines = textPopUpList.length;
        var lineWidth;
        var ttlHeight = 0;
        var maxWidth = 0;
        var maxHeight;
        var bbox;
        var textColorHTML;
        var textColorDict;
        var font_size;
        var font;
        var iReverse;
        var textPopUpGroup = document.getElementById("dataInfo");
        var textPopUpDelete = document.getElementsByClassName("infoboxText")

        //Delete old text
        while(textPopUpDelete.length > 0){
                textPopUpDelete[0].parentNode.removeChild(textPopUpDelete[0]);
        }
        for(i in textPopUpList){
                lineWidth = 0;
                maxHeight = 0;
                iReverse = numberLines - 1 - i;
                for(var j in textPopUpList[iReverse]){
                        textPopUp = document.createElementNS("http://www.w3.org/2000/svg","text");
                        if(textPopUpList[iReverse][j]["type"] == "text"){
                                textPopUp.innerHTML = textPopUpList[iReverse][j]["text"].replaceAll("
","&nbsp;");
                        } else {
                                textPopUp.innerHTML = eval(textPopUpList[iReverse][j]["text"]);
                        }

                        //Calculate x and y of text
                        textX = event.pageX - 72 + lineWidth;
                        textY = event.pageY - 65 - ttlHeight;

                        //Style
                        textColorDict = textPopUpList[iReverse][j]["style"];
                        textColorHTML = "rgb(" + textColorDict["r"] + "," + textColorDict["g"] + ","
+ textColorDict["b"] + ");"
                        font_size = textColorDict["size"];
                        font_family = textColorDict["font"];

                        //Set property and style
                        textPopUp.setAttributeNS(null,"x",textX);
                        textPopUp.setAttributeNS(null,"y",textY);
                        textPopUp.setAttributeNS(null,"font-family",font_family);
                        textPopUp.setAttributeNS(null,"font-size",font_size);
                        textPopUp.setAttributeNS(null,"fill",textColorHTML);
                        textPopUp.setAttributeNS(null,"class","infoboxText");
                        textPopUpGroup.appendChild(textPopUp);

                        //Adjust future elements by accounting for element width
                        bbox = textPopUp.getBBox();
                        lineWidth = lineWidth + bbox.width;
                        if(bbox.height > maxHeight){
                                maxHeight = bbox.height;
                        }
                }
                if(lineWidth > maxWidth){
                        maxWidth = lineWidth;
                }
                ttlHeight = ttlHeight + maxHeight;
        }

        //Box
        var boxPopUp = document.getElementById("dataInfoBox");
        boxPopUp.setAttribute("x",event.pageX-82);
        boxPopUp.setAttribute("y",event.pageY-65-ttlHeight);
        boxPopUp.setAttribute("height",ttlHeight+10);
        boxPopUp.setAttribute("width",maxWidth+20);

        //Set stroke width
        boxPopUp["style"]["stroke-width"] = infobox_styles["border"]["stroke-width"];

        //Fill colors
        var red = infobox_styles["color"]["r"];
        var green = infobox_styles["color"]["g"];
        var blue = infobox_styles["color"]["b"];

        var color = "rgb(" + red + "," + green + "," + blue + ")";
        boxPopUp.setAttribute("fill",color);

        //Border colors

        red = infobox_styles["border"]["color"]["r"];
        green = infobox_styles["border"]["color"]["g"];
        blue = infobox_styles["border"]["color"]["b"];

        color = "rgb(" + red + "," + green + "," + blue + ")";
        boxPopUp.style.stroke = color;

        //Make visible
        boxPopUp.style.visibility = "visible";
}

function hideInfobox(c){
        var textPopUp = document.getElementsByClassName("infoboxText");
        while(textPopUp.length > 0){
                textPopUp[0].parentNode.removeChild(textPopUp[0]);
        }
        var boxPopUp = document.getElementById("dataInfoBox");
        boxPopUp.style.visibility = "hidden";
}
```