```
1  // INDEX.JS
2
3  //const color and value arrays
4  var loc
   =["State","Alabama","Alaska","Arizona","Arkansas","California","Colorado","Connecticut","
   Delaware","District Of
   Columbia","Florida","Georgia","Hawaii","Idaho","Illinois","Indiana","Iowa","Kansas","Kent
   ucky","Louisiana","Maine","Maryland","Massachusetts","Michigan","Minnesota","Mississippi"
   ,"Missouri","Montana","Nebraska","Nevada","New Hampshire","New Jersey","New
   Mexico","New York","North Carolina","North
   Dakota","Ohio","Oklahoma","Oregon","Pennsylvania","Rhode Island","South
   Carolina","South
   Dakota","Tennessee","Texas","Utah","Vermont","Virginia","Washington","West
   Virginia","Wisconsin","Wyoming","Alberta","British Columbia","Manitoba","New
   Brunswick","Newfoundland and Labrador","Northwest Territories","Nova
   Scotia","Nunavut","Ontario","Prince Edward Island","Saskatchewan","Yukon"];
5  var colorsTemp = ["#d0d0d0", "#321c67", "#452a84", "#53398b", "#373a8b", "#4246ad",
   "#3c75b9", "#4985c5", "#3799c1", "#12a4a2", "#189e66", "#279d3e", "#64b445", "#bad02c",
   "#efe62e", "#fed632", "#f6a730", "#ef7b23", "#e6491f", "#e52a2b", "#e20230", "#b60025",
   "#93001e", "#600014"];
6  var valuesTempWinter = [-1000, -998, -100, -32.501, -32.5, -30, -29.999, -27.501,
   -27.5, -25.001, -25, -22.501, -22.5, -20.001, -20, -17.501, -17.5, -15.001, -15,
   -12.501, -12.5, -10.001, -10, -7.501, -7.5, -5.001, -5, -2.501, -2.5, -0.001, 0, 2.449,
   2.5, 4.999, 5, 7.499, 7.5, 9.999, 10, 12.499, 12.5, 14.999, 15, 17.499, 17.5, 19.999,
   20, 1000];
7  var valuesTempSummer = [-1000, -998, -100, 8.999, 9, 9.999, 10, 10.999, 11, 11.999, 12,
   12.999, 13, 13.999, 14, 14.999, 15, 15.999, 16, 16.999, 17, 17.999, 18, 18.999, 19,
   19.999, 20, 20.999, 21, 21.999, 22, 22.999, 23, 23.999, 24, 24.999, 25, 25.999, 26,
   26.999, 27, 27.999, 28, 28.999, 29, 29.999, 30, 1000];
8  var colorsChange = ["#888888", "#3b4cc0", "#5978e3", "#7b9ff9", "#9fbeff", "#c0d4f5",
   "#ffffff", "#f2cbb7", "#f7ad8f", "#ee8568", "#d75344", "#b40426"];
9  var valuesChangeWinter = [-1000, -998, -100, -10.001, -10, -8.001, -8, -6.001, -6,
   -4.001, -4, -2.001, -2, 1.999, 2, 3.999, 4, 5.999, 6, 7.999, 8, 9.999, 10, 1000];
10 var valuesChangeSummer = [-1000, -998, -100, -5.001, -5, -4.001, -4, -3.001, -3,
   -2.001, -2, -1.001, -1, 0.999, 1, 1.999, 2, 2.999, 3, 3.999, 4, 4.999, 5, 1000];
11 var colorScheme;
12 var colorValues;
13 var yearData = [];
14 var previousYearData = [];
15 var baselineYearData = [];
16 var count = 0;
17
18 //global variables
19 var start, end, curYear;
20 var timeString;
21 var dlYear; //to remember which year is to be downloaded on range START-END that user
   supplies
22 var LOOP_INTERVAL = 600; //default at 600
23 var dataID; //determines which data set is grabbed
24 var PAUSE = false; //to know to break out of the d1Next function in the loop
25 var STOP = false; //allows the functions to know to reset the coloring to gray
26 var BAD = false; //if bad entry data
27 var PLAY = false; //if the animation has ever run
28 var REWIND = false; //allows the coloring to change when rewind is pressed
29 var INFO = false; //tells if the info div is currently showing
30 var KEY = false; //tells if the animation has run and if the key should be reshown when
   the info box is hidden
31 var baselineYear, previousYear, temp; //lets the program know which option was selected
   for updating values
32
33 var req = new XMLHttpRequest();
34 var reqCode; //Signifies what to do with data received
35             // 0 : store into Acur
36             // 1 : store into Anext
37
38 //externals
```

```
39  var map; //google maps object
40
41
42  window.onload = function() {
43      var elem = document.getElementById("curTime");
44      elem.style.display = "none";
45  }
46
47  //called on page load
48  function initMap() {
49      map = new google.maps.Map(document.getElementById("map"), {
50          center: { lat: 51.0902, lng: -132.7129 },
51          zoom: 3.25,
52          streetViewControl: false,
53          mapTypeId: 'satellite',
54      });
55
56
        map.data.loadGeoJson("https://compsci04.snc.edu/cs460/2022/nooycr/map/data/USA_States
        .geojson");
57      map.data.setStyle({
58          fillColor: "#111111",
59          strokeWeight: .25
60      });
61
62      //grab all objects from the PHP file
63      var inputBox = document.getElementById("inputbox");
64
65      var play = document.getElementById("playbtn");
66      var pause = document.getElementById("pausebtn");
67      var stop = document.getElementById("stopbtn");
68      var hidesidebar = document.getElementById("hidesidebar");
69      var showsidebar = document.getElementById("showsidebar");
70      showsidebar.style.display="none";
71
72      var infodiv = document.getElementById("infodiv");
73      infodiv.style.display="none";
74
75      var keysmall = document.getElementById("keysmall");
76      keysmall.style.display="none";
77      var keylarge = document.getElementById("keylarge");
78      keylarge.style.display="none";
79
80      var rewind = document.getElementById("rewind");
81      rewind.style.display="none";
82
83      var learnmore = document.getElementById("learnmore");
84
85      //add the objects onto the map in a specified location
86      map.controls[google.maps.ControlPosition.BOTTOM_RIGHT].push(keysmall);
87      map.controls[google.maps.ControlPosition.BOTTOM_RIGHT].push(keylarge);
88
89      map.controls[google.maps.ControlPosition.TOP_CENTER].push(curTime);
90      map.controls[google.maps.ControlPosition.LEFT_TOP].push(inputbox);
91
92      map.controls[google.maps.ControlPosition.LEFT_BOTTOM].push(hidesidebar);
93      map.controls[google.maps.ControlPosition.LEFT_BOTTOM].push(showsidebar);
94      map.controls[google.maps.ControlPosition.LEFT_BOTTOM].push(stop);
95      map.controls[google.maps.ControlPosition.LEFT_BOTTOM].push(pause);
96      map.controls[google.maps.ControlPosition.LEFT_BOTTOM].push(play);
97      map.controls[google.maps.ControlPosition.LEFT_BOTTOM].push(rewind);
98      map.controls[google.maps.ControlPosition.LEFT_BOTTOM].push(learnmore);
99
100     map.controls[google.maps.ControlPosition.RIGHT_TOP].push(infodiv);
101
102     stop.disabled = true;
```

```
    pause.disabled = true;
}

// called when play button is pressed
function playbtn() {
    console.log("In Play");
    console.log("Pause: " + PAUSE);

    if(PAUSE) { //reset screen when animation is resumed
        PAUSE = false;
        console.log("Pause: " + PAUSE);
        var play = document.getElementById("playbtn");
        var pause = document.getElementById("pausebtn");
        var stop = document.getElementById("stopbtn");
        play.textContent = 'Play';
        play.disabled = true;
        pause.disabled = false;
        stop.disabled = false;

        var rewind = document.getElementById("rewind");
        rewind.style.display="none";

        setTimeout(() => {  dlNext(1, dataID) }, LOOP_INTERVAL); //start loop

        return;
    }

    else {
        var play = document.getElementById("playbtn");
        var pause = document.getElementById("pausebtn");
        var stop = document.getElementById("stopbtn");
        var seasonSelect = document.getElementById("seasonSelect");
        var dataSelect = document.getElementById("dataSelect");
        var speedSelect = document.getElementById("speedSelect");
        play.disabled = true;
        stop.disabled = false;
        stop.textContent = 'Stop';
        pause.disabled = false;
        seasonSelect.disabled = true;
        dataSelect.disabled = true;
        speedSelect.disabled = true;

        var learnmore = document.getElementById("learnmore");
        learnmore.style.display="none";

        //grab selected dataset and set the variables (needed before start date)
        elem = document.getElementById("dataSelect");
        temp = Boolean(elem.options[elem.selectedIndex].value == "temp");
        console.log("Temp: " + temp);
        previousYear = Boolean(elem.options[elem.selectedIndex].value ==
        "previouschange");
        console.log("PreviousYear: " + previousYear);
        baselineYear = Boolean(elem.options[elem.selectedIndex].value ==
        "baselinechange");
        console.log("BaselineYear: " + baselineYear);
        elem = document.getElementById("seasonSelect");

        //set color arrays (summer vs winter and temperature vs change)
        switch(elem.options[elem.selectedIndex].value) {
            case "summer":
                dataID = "summer";
                if(temp) {
                    colorScheme = colorsTemp;
                    colorValues = valuesTempSummer;
                }
                else {
```

```
                colorScheme = colorsChange;
                colorValues = valuesChangeSummer;
            }

            break;
        case "winter":
            dataID = "winter";
            if(temp) {
                colorScheme = colorsTemp;
                colorValues = valuesTempWinter;
            }
            else {
                colorScheme = colorsChange;
                colorValues = valuesChangeWinter;
            }
            break;
        default:
            dataID = "invalid";
    }

    //grab start and end from input fields
    start = document.getElementById("startDate").value;
    startbox = document.getElementById("startDate");
    end = document.getElementById("endDate").value;
    endbox = document.getElementById("endDate");

    //set default values
    if (start == "Start (YYYY)" || start == "") {
        start = 1900;
    }
    if (end == "End (YYYY)" || end == "") {
        end = 2000;
    }

    //make sure the dates are in range
    //if not, clear out the data (badData function)
    if(temp) {
        if (start < 1743) {
            alert("Start Value must be greater than or equal to 1743");
            BAD = true;
            badData(BAD);
            return;
        }
    }
    else {
        if (start < 1850) {
            alert("Start Value must be greater than or equal to 1850");
            BAD = true;
            badData(BAD);
            return;
        }
    }

    if (end > 2013) {
        alert("End value must be less than or equal to 2013");
        BAD = true;
        badData(BAD);
        return;
    }

    if (start > end) { //they can be the same (will only display that year)
        alert("Start must be less than end!");
        BAD = true;
        badData(BAD);
        return;
    }
```

```
233
234             startbox.disabled = true;
235             startbox.value = "";
236             startbox.value = start;
237             console.log("Start: " + start);
238
239             endbox.disabled = true;
240             endbox.value = "";
241             endbox.value = end;
242             console.log("End: " + end);
243
244             STOP = false;
245             PLAY = true;
246
247             //show the current year text box
248             var elem = document.getElementById("curTime");
249             elem.style.display = "inline";
250
251             //grab selected speed
252             elem = document.getElementById("speedSelect");
253             switch(elem.options[elem.selectedIndex].value) {
254                 case "veryslow":
255                     LOOP_INTERVAL = 1200;
256                     break;
257                 case "slow":
258                     LOOP_INTERVAL = 800;
259                     break;
260                 case "moderate":
261                     LOOP_INTERVAL = 400;
262                     break;
263                 case "fast":
264                     LOOP_INTERVAL = 200;
265                     break;
266                 case "veryfast":
267                     LOOP_INTERVAL = 100;
268                     break;
269                 default:
270                     LOOP_INTERVAL = 800;
271             }
272
273             //show the key and load the correct image
274             keysmall = document.getElementById("keysmall");
275             keylarge = document.getElementById("keylarge");
276             keysmall.style.display = "inline";
277             KEY = true;
278             if (dataID == "summer"){
279                 if(temp) {
280                     keysmall.src = "keys/summertempkey.png";
281                     keylarge.src = "keys/summertempkey.png";
282                 }
283                 else {
284                     keysmall.src = "keys/summerchangekey.png";
285                     keylarge.src = "keys/summerchangekey.png";
286                 }
287             }
288             else if (dataID == "winter") {
289                 if(temp) {
290                     keysmall.src = "keys/wintertempkey.png";
291                     keylarge.src = "keys/wintertempkey.png";
292                 }
293                 else {
294                     keysmall.src = "keys/winterchangekey.png";
295                     keylarge.src = "keys/winterchangekey.png";
296                 }
297             }
298
```

```
        //grab the data from the retrieve file (the request comes back here)
        req.onreadystatechange = function() {
            if (this.readyState == 4 && this.status == 200) {
                // alert(this.responseText);
                previousYearData = yearData;
                yearData = this.responseText.split(" ");
                if (count == 1) {
                    previousYearData = yearData;
                    baselineYearData = yearData;
                }
                // once the new data returns, go to update the values
                updateValues(yearData);
            }
        }

        dlYear = curYear = start;

        dlNext(0, dataID);
    }
}

// called when the pause button is pressed
function pause() {
    PAUSE = true;

    // disables and renables buttons
    var play = document.getElementById("playbtn");
    var pause = document.getElementById("pausebtn");
    var stop = document.getElementById("stopbtn");
    play.textContent = 'Resume';
    play.disabled = false;
    stop.disabled = false;
    pause.disabled = true;

    // displays rewind button
    var rewind = document.getElementById("rewind");
    rewind.style.display="inline";

    return;
}

// called when stop button is pressed
function stop() {
    console.log("In Stop");
    STOP = true;

    // disable and renable buttons and change text
    var play = document.getElementById("playbtn");
    var pause = document.getElementById("pausebtn");
    var stop = document.getElementById("stopbtn");
    var seasonSelect = document.getElementById("seasonSelect");
    var dataSelect = document.getElementById("dataSelect");
    var speedSelect = document.getElementById("speedSelect");
    var startbox = document.getElementById("startDate");
    var endbox = document.getElementById("endDate");
    play.textContent = 'Play';
    play.disabled = false;
    stop.disabled = true;
    stop.textContent = 'Stop';
    pause.disabled = true;
    seasonSelect.disabled = false;
    dataSelect.disabled = false;
    speedSelect.disabled = false;
    startbox.disabled = false;
    endbox.disabled = false;

```

```
365         // hide the rewind button (if shown)
366         var rewind = document.getElementById("rewind");
367         rewind.style.display="none";
368 
369         // resets values of bools and input box values
370         startbox.value = "Start (YYYY)";
371         endbox.value = "End (YYYY)";
372         PAUSE = false;
373         KEY = false;
374         count = 0;
375 
376         // hide the current year text box
377         var currentTime = document.getElementById("curTime");
378         currentTime.style.display="none";
379 
380         // hide the key image
381         var key = document.getElementById("keysmall");
382         key.style.display="none";
383         KEY = false;
384 
385         // show the info button
386         var learnmore = document.getElementById("learnmore");
387         learnmore.style.display="inline";
388 
389         // color each state to gray
390         map.data.forEach(function(feature) {
391             map.data.overrideStyle(feature, {fillColor: "#111111"});
392         });
393     }
394 
395     // called when the hide sidebar button is pressed
396     function hidesidebar() {
397         // flips the button shown
398         var hidesidebar = document.getElementById("hidesidebar");
399         hidesidebar.style.display="none";
400         var showsidebar = document.getElementById("showsidebar");
401         showsidebar.style.display = "inline";
402 
403         // hides the input boxes and buttons
404         var inputBox = document.getElementById("inputbox");
405         inputBox.style.display="none";
406         var play = document.getElementById("playbtn");
407         play.style.display="none";
408         var pause = document.getElementById("pausebtn");
409         pause.style.display="none";
410         var stop = document.getElementById("stopbtn");
411         stop.style.display="none";
412         var learnmore = document.getElementById("learnmore");
413         learnmore.style.display="none";
414         var rewind = document.getElementById("rewind");
415         rewind.style.display="none";
416 
417         // hide the small key and show the larger key if animation is playing (or has played)
418         var keysmall = document.getElementById("keysmall");
419         keysmall.style.display="none";
420         console.log("PLAY: " + PLAY + " STOP: " + STOP);
421         if(PLAY && !STOP) {
422             var keylarge = document.getElementById("keylarge");
423             keylarge.style.display="inline";
424         }
425     }
426 
427     // called when the show sidebar button is pressed
428     function showsidebar() {
429         // flip buttons shown
430         var hidesidebar = document.getElementById("hidesidebar");
```

```
        hidesidebar.style.display="inline";
        var showsidebar = document.getElementById("showsidebar");
        showsidebar.style.display = "none";

        // shows the buttons and input boxes
        var inputBox = document.getElementById("inputbox");
        inputBox.style.display="inline";
        var play = document.getElementById("playbtn");
        play.style.display="inline";
        var pause = document.getElementById("pausebtn");
        pause.style.display="inline";
        var stop = document.getElementById("stopbtn");
        stop.style.display="inline";
        console.log("Pause: " + PAUSE);
        console.log("Stop: " + STOP);
        console.log("Play: " + PLAY);
        if(!PAUSE && (STOP || !PLAY)) {
            var learnmore = document.getElementById("learnmore");
            learnmore.style.display="inline";
        }
        if(PAUSE) {
            var rewind = document.getElementById("rewind");
            rewind.style.display="inline";
        }

        // reshows the key if needed
        if(PLAY && !STOP) {
            var keysmall = document.getElementById("keysmall");
            keysmall.style.display="inline";
        }
        var keylarge = document.getElementById("keylarge");
        keylarge.style.display="none";
    }

    // called when rewind button is pressed
    function rewind() {
        REWIND = true;

        //update the count
        count = count - 5;
        if (count < 0) {
            count = 0;
        }
        dlYear = dlYear - 5;
        if (dlYear < start) {
            dlYear = start;
        }

        //update the current year and call the function for the coloring to update
        curYear = dlYear;
        dlNext(1, dataID);
    }

    // called when the info button is pressed
    function learnmore() {
        // if the info div is closed currently
        if(!INFO) {
            INFO = true;

            // grab current start and end dates
            startinput = document.getElementById("startDate").value;
            endinput = document.getElementById("endDate").value;

            // reset to defaults if empty
            if (startinput == "Start (YYYY)" || startinput == "") {
                startinput = 1900;
```

```
497             }
498             if (endinput == "End (YYYY)" || endinput == "") {
499                 endinput = 2000;
500             }
501 
502             starttext = document.getElementById("starttext");
503             endtext = document.getElementById("endtext");
504             changeprevtext = document.getElementById("startDate");
505 
506             // update text with the current years entered in the start and end boxes
507             starttext.textContent = "Start Year - The year the animation starts. If
                Temperature Change Over Time is selected, also the baseline year. Default is
                1900. Currently set to " + startinput + ".";
508             endtext.textContent = "End Year - The year the animation ends. Default is 2000.
                Currently set to " + endinput + ".";
509             changetimetext.textContent = "Temperature Change Over Time - Uses the starting
                year (currently " + startinput + ") as a baseline and displays the temperature
                difference each year based on the starting year.";
510 
511             // display the info div
512             var infodiv = document.getElementById("infodiv");
513             infodiv.style.display="inline";
514 
515             // disable the play button so the user doesn't accidently start it
516             var play = document.getElementById("playbtn");
517             play.disabled = true;
518 
519             // hide the key so it does not go over the info div
520             if(KEY) {
521                 var keysmall = document.getElementById("keysmall");
522                 keysmall.style.display="none";
523             }
524         }
525         // if the info div is currently open (close it)
526         else {
527             INFO = false;
528             var infodiv = document.getElementById("infodiv");
529             infodiv.style.display="none";
530             var play = document.getElementById("playbtn");
531             play.disabled = false;
532             // if there was a key, reshow it
533             if(KEY) {
534                 var keysmall = document.getElementById("keysmall");
535                 keysmall.style.display="inline";
536             }
537         }
538     }
539 
540     //listener for the start and end boxes to update the info div
541     function inputchange() {
542         //grab current start and end dates
543         startinput = document.getElementById("startDate").value;
544         endinput = document.getElementById("endDate").value;
545 
546         if (startinput == "Start (YYYY)" || startinput == "") { // use the default
547             startinput = 1900;
548         }
549         else if(startinput < 1743 || startinput > 2013) { // let user know date is invalid
            (if play is pressed it won't run)
550             startinput = "INVALID";
551         }
552 
553         if (endinput == "End (YYYY)" || endinput == "") { // use the default
554             endinput = 2000;
555         }
556         else if(endinput < 1743 || endinput > 2013) { // let user know date is invalid (if
```

```
        play is pressed it won't run)
557         endinput = "INVALID";
558     }
559
560     starttext = document.getElementById("starttext");
561     endtext = document.getElementById("endtext");
562     changeprevtext = document.getElementById("startDate");
563
564     // update the three text boxes that use the current data
565     starttext.textContent = "Start Year - The year the animation starts. If Temperature
        Change Over Time is selected, also the baseline year. Default is 1900. Currently
        set to " + startinput + ".";
566     endtext.textContent = "End Year - The year the animation ends. Default is 2000.
        Currently set to " + endinput + ".";
567     changetimetext.textContent = "Temperature Change Over Time - Uses the starting year
        (currently " + startinput + ") as a baseline and displays the temperature
        difference each year based on the starting year.";
568
569 }
570
571 // called when the hide button on the info div is pressed
572 function hidelearnmore() {
573     INFO = false;
574     var infodiv = document.getElementById("infodiv");
575     infodiv.style.display="none";
576     var play = document.getElementById("playbtn");
577     play.disabled = false;
578     //show the key if there was one before the info div was opened
579     if(KEY) {
580         var keysmall = document.getElementById("keysmall");
581         keysmall.style.display="inline";
582     }
583 }
584
585 // function that is looped on to grab data and then call the function to update the
    colors
586 function dlNext(code, id) {
587     // break out of the function if pause or stop were pressed
588     if ((PAUSE && !REWIND)) {
589         console.log("in pause");
590         return;
591     }
592     else if(STOP) {
593         BAD = true;
594         badData(BAD);
595         return;
596     }
597     // send the request for data to retrieve along with the year and month selected
598     req.open("POST", "retrieve.php", true);
599     reqCode = code;
600     req.setRequestHeader("Content-Type", "application/x-www-form-urlencoded");
601     req.send("year="+dlYear+"&datasetid="+dataID);
602     console.log("dlYear: " + dlYear + ", curYear: " + curYear + ", count: " + count);
603     //if in the loop, update the year and count
604     if(!REWIND) {
605         console.log("!REWIND");
606         dlYear++;
607         curYear++;
608         count++;
609     }
610     REWIND = false;
611 }
612
613 function updateValues(A) {
614     // console.log("In updateValues(A)");
615     var sName;
```

```
616         var k; //index
617         var index;
618         var data;
619 
620         //updates map with data from array A
621         map.data.forEach(function(feature) {
622             sName = feature.getProperty("STATE_NAME"); // grab the name of the current
                active state
623             // find the index of the particular state
624             for (let i = 0; i < loc.length; i++) {
625                 if(sName == loc[i])
626                     k = i;
627             }
628             if (k == -1) {
629                 console.log(sName + ": ERROR");
630             }
631             else { // value is stored in A[].. print appropriate color on feature based on
                data
632 
633                 if(baselineYear) { // subtract baseline year from the current year
634                     data = A[k] - baselineYearData[k];
635                     if(data == 0) { // means there was no data
636                         data = -999;
637                     }
638                 }
639                 else if(previousYear) { // subtract previous year from the current year
640                     data = A[k] - previousYearData[k];
641                     if(data == 0) { // means there was no data
642                         data = -999;
643                     }
644                 }
645                 else if(temp) { // if average temperature, then no subtraction needed
646                     data = A[k];
647                 }
648 
649                 index = findColorOfValue(colorValues, data); //sending values array and the
                    value
650                 if(!STOP) {
651                     map.data.overrideStyle(feature, {fillColor: colorScheme[index]}); //
                        fill the state based on the data
652                 }
653                 else {
654                     map.data.overrideStyle(feature, {fillColor: "#111111"}); // reset the
                        color if stop was pressed (covers for some delay in updating)
655                 }
656             }
657         });
658 
659         curTime = curYear.toString();
660         if(curTime != start) { // makes sure the current year does not predate the start
661             curTime--;
662         }
663         timeString = "Current Year: " + curTime;
664         elem = document.getElementById("curTime");
665         elem.textContent = timeString; // update the current year string
666         var years = end - start;
667         years++; // needs to be one more than the subtraction
668         if(count >= years) {
669             count = 0;
670 
671             // reset the buttons and input boxes for new input
672             var play = document.getElementById("playbtn");
673             var pause = document.getElementById("pausebtn");
674             var stop = document.getElementById("stopbtn");
675             var seasonSelect = document.getElementById("seasonSelect");
676             var dataSelect = document.getElementById("dataSelect");
```

```
677             var speedSelect = document.getElementById("speedSelect");
678             var startbox = document.getElementById("startDate");
679             var endbox = document.getElementById("endDate");
680             play.textContent = 'Play';
681             play.disabled = false;
682             stop.disabled = false;
683             stop.textContent = 'Clear';
684             pause.disabled = true;
685             seasonSelect.disabled = false;
686             dataSelect.disabled = false;
687             speedSelect.disabled = false;
688             startbox.disabled = false;
689             endbox.disabled = false;
690 
691             startbox.value = "Start (YYYY)";
692             endbox.value = "End (YYYY)";
693 
694             var learnmore = document.getElementById("learnmore");
695             learnmore.style.display="inline";
696 
697             return;
698         }
699         // set the loop on the dlNext function
700         setTimeout(() => {  dlNext(1, dataID) }, LOOP_INTERVAL);
701     }
702 
703     // find what color the state should be updated to
704     function findColorOfValue(valArray, val) {
705         var size = valArray.length;
706         var i;
707         var index;
708         for (i = 0; i < size; i++) {
709             if (val >= valArray[i] && val <= valArray[i+1]) {
710                 index = Math.floor(i/2); // there are twice as many values as colors, so it
                    needs to be divided by two
711                 return index;
712             }
713         }
714         return -1;
715     }
716 
717     // called when incorrect year data is entered on start (very similar to stop function)
718     function badData(BAD) {
719         console.log("In badData");
720         if(BAD) {
721             // reset the buttons and input boxes to their starting names and functions
722             var play = document.getElementById("playbtn");
723             var pause = document.getElementById("pausebtn");
724             var stop = document.getElementById("stopbtn");
725             var seasonSelect = document.getElementById("seasonSelect");
726             var dataSelect = document.getElementById("dataSelect");
727             var speedSelect = document.getElementById("speedSelect");
728             var startbox = document.getElementById("startDate");
729             var endbox = document.getElementById("endDate");
730             play.textContent = 'Play';
731             play.disabled = false;
732             stop.disabled = true;
733             stop.textContent = 'Stop';
734             pause.disabled = true;
735             seasonSelect.disabled = false;
736             dataSelect.disabled = false;
737             speedSelect.disabled = false;
738             startbox.disabled = false;
739             endbox.disabled = false;
740 
741             startbox.value = "Start (YYYY)";
```

```
742             endbox.value = "End (YYYY)";
743 
744             var learnmore = document.getElementById("learnmore");
745             learnmore.style.display="inline";
746 
747             PAUSE = false;
748             count = 0;
749         }
750     }
```