

## ----- UNIT TESTS -----

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Product Name: Data Visualization

Team Name: Visualizing Climate Change

Date: June 13, 2019

Note: This document contains details provided by each team member about the module and the functional testing they have done.

-----Morgan Trotter-----

EC: Play button correctly plays the timeline of CO2 emissions

- Test Cases: clicking the play button
- Expected Outcome: The graph updates while the timeline is automatically going forward

EC: Inputting year with characters other than numbers

- Test Cases: {"abc", "!@#+,.>"}
- Expected Outcome: Does not allow inputs other than numbers

EC: Inputting year outside its range

- Test Cases: [1000, 999999]
- Expected Outcome: displays invalid inputs

EC: ToolTip correctly display data

- Test Cases: hovering over each bubble
- Expected Outcome: Tooltip is displayed correctly

-----Eric Rong-----

EC: Sunburst Tooltips displays correctly

- Test Cases: Hover over each section
- Expected Outcome: The tooltip is correctly displayed in the middle

EC: Dragging the slider changes the graph correctly

- Test Cases: Dragging and selecting the slider to a specific time
- Expected Outcome: The Sunburst correctly updates its data to show the visualizations

EC: Clicking on sunburst sections zooms in and correctly display visualization

- Test Cases: clicking in sections and subsections
- Expected Outcome: The graph zooms in and zooms out as expected as correctly displaying data

EC: Searching a country will zoom in the country

- Test Cases: typing “Asia” and “United States” and “asdfaf”
- Expected Outcome: The graph zooms in on click or enter. An error message will be displayed on wrong input

EC: Comparing two years by inputting two different years will display the two years on the Sunburst

- Test Cases: inputting “1990” to “2017” and “014” to “2000”
- Expected Outcome: The graph displays the two years on visual. An error message will be displayed on wrong inputs

EC: Selecting item from dropdown menu correctly transitions the visual to the correct one

- Test Cases: Select Natural Gas
- Expected Outcome: Data from natural is displayed

EC: Source Links link to correct page

- Test Cases: clicking on each link
- Expected Outcome: All links go to the correct page

-----Steve Chan-----

EC: Temperature Bars displaying correct temperatures on hover

- Test Case: Hovering over the bar using cursor
- Expected Outcome: Tooltip correctly shows temperature in spot where the mouse hovers

EC: Using arrow keys changes the years of the country and updates the data

- Test Cases: Using left and right arrow keys to go to a specific year
- Expected Outcome: The graph's years changes and the data updates with the year without showing the previous year's data

EC: Changing countries by using the dropdown menu

- Test Cases: Click on the dropdown menu and selecting another country to view
- Expected Outcome: Updates the graph to show the new country's data without showing old data from the previous country

EC: Keeping the titles of year and country updated with change

- Test Cases: Selecting a different country from the dropdown menu and changing years using the arrow keys
- Expected Outcome: Title for year changes with use of arrow keys and is reset to 2014 when changing to a different country. Country title changes when changing to a different country using the dropdown menu.

EC: Comparing two years shows graph for both years

- Tests Cases: Entering two years/numbers from 1901 to 2014 in search box
- Expected Outcome: Displays two different colored bar charts for the two years

EC: Comparing two years shows difference in temperatures

- Tests Cases: Entering two years/numbers from 1901 to 2014 in search box and viewing result
- Expected Outcome: Displays the difference of the two year's temperatures at the top

EC: Changing countries gets rid of data from previous country

- Tests Cases: Changing country and viewing result
- Expected Outcome: Changing countries gets rid of old previous data

EC: Compare results removed after changing years

- Tests Cases: Entering two years/numbers from 1901 to 2014 in search box and changing year
- Expected Outcome: Gets rid of old data/labels for that year

-----David Krieger-----

### Choropleth Unit Testing:

EC: Dragging the slider changes the data for year, temperate, co2, and energy consumption

- Test Cases: Use cursor to drag and slide so user can select the year
- Expected Outcome: Choropleth updates the data to the desired year

EC: Changing year changes the choropleths colors

- Test Cases: Drag and change the year using the slider
- Expected Outcome: The color of the choropleth changes depending on year and data

EC: Country's tooltip displays the data

- Test Cases: Hovering over the country using the cursor
- Expected Outcome: Displays the data for the country during that year

EC: Selecting a new filter updates the map

- Test Cases: Clicking either isolated or comparative buttons
- Expected Outcome: The legend should be rebuilt and map reloaded to match filter type

EC: Comparative filter and slider ball management

- Test Cases: Have compare filter set as active
- Expected Outcome: Two balls should appear on the slider. A black ball for primary year, a grey ball for secondary year

EC: Display year text properly

- Test Cases: Use either of the filters and select some years
- Expected Outcome: The year text should properly update based on filter

EC: Display cumulative text properly

- Test Cases: Use either of the filters and select some years

- Expected Outcome: The cumulative text should properly update based on filter

EC: Display top/bot 5 text

- Test Cases: Use either of the filters and select some years
- Expected Outcome: The top/bot 5 text should properly update based on filter

EC: Year select via text input from the textbox

- Test Cases: parses whitespaces, checks bounds for years, filters out non-numbers
- Expected Outcome: Only update visual if proper input is given

### Home Page Unit Testing:

EC: Home page “is climate change real” button highlights on hover and takes you to the debate

- Test Cases: Hover over button then click it
- Expected Outcome: Changes color and takes you to debate page

### Contact Unit Testing:

EC: Input testing for the HTML form boxes

- Test Cases: Entered text in all of the boxes and hit submit
- Expected Outcome: Should send message to [data.vizualsucsc@gmail.com](mailto:data.vizualsucsc@gmail.com)

### Menu Bar Unit Testing:

EC: Clicking a tab on the menubar should take you to the webpage

- Test Cases: Click a tab
- Expected Outcome: Take you to the webpage

EC: Clicking the logo on the menubar should take you to the home page

- Test Cases: Click the icon
- Expected Outcome: Take you to the homepage