Working Prototype Known Problems Report
Sort Visualizer
The Sorters
7/19/2020

Functions Not Working:

1. Toggling play/pause button before sorting causes the icon to not match up to the pause state. This can be fixed by disabling the play/pause button before sorting starts

2. We have not tested this website extensively on mobile, but certain screen sizes cannot display things correctly.

3. Unused pages such as about, contact, and NoMatch have black text on a black background.

4. The speed slider and array size sliders sometimes stop the user from dragging the slider, but can still be interacted with by clicking. We really have no idea why it happens, it is related to the styled-components library. The library is responsible for all buttons,sliders and input boxes.

5. Clicking "begin sort" faster than the current sorting speed causes multiple sorts to run and compete to render. Could be fixed by preventing the begin sort button to be spammed.

6. Resizing the browser does not rerender or recalculate the width of the bars. Refreshing currently is the way to have it recalculated, and an extra few lines calculating it on the backend for init arrays could potentially fix this.

7. Our quicksort implementation is inefficient and it swaps array values even when swapped indexes are the same, this inflates the swap count significantly when sorting already sorted arrays.

8. When clicking the next button on slow speeds, each step takes as long as it would if it were running with pauses, so the next button cannot be clicked as rapidly as desired. If a user wishes to click the next button faster, the speed should be set to max. Developers could fix this by checking if paused then setting the speed to max.

9. Rapidly clicking begin, reset, and pause buttons rapidly can cause numerical array and color representations of the array to become desynchronized, and although the numbers are being sorted, colors do not correspond. Additionally, multiple simultaneous sorting functions can be run on the same array at the same time, causing neither sort to ever finish. Cause is unknown, and could be fixed by putting a cooldown for begin and reset buttons.

10. Forward button also counts comparisons and swaps without animating anything after you click reset sort. This is because when resetting the sort, it doesn't reset the generator associated with the sort. So when the forward button is clicked it sorts an array that isn't displayed and the array swap and comparison count is incremented. This can be fixed by setting the generator to an empty function when resetting the sort.

11. Not every line of pseudocode will be highlighted, this is a stylistic choice and could cause confusion about how the sort is being executed. This could be fixed with more update statements while executing the sort or highlighting multiple statements at once to indicate cause/effect.