

SENG 4640 - Assignment 3

React Basic (10%)

due: **Tuesday, Feb 14, 2023 (11:59pm)**

In this assignment, you will develop a React component that allows the reader of a web page to change the appearance of a piece of text.

When the user clicks on the text, a small form will appear that contains:

- a checkbox that lets the user choose whether the text should be bold
- buttons for decreasing and increasing the text's font size, as well as a display of the current size

Then, when the user clicks on the text again, the form disappears. Further details of the specification are provided below. In completing this app, you will:

- Use the React framework to create a reusable, modular component
- Define callback functions that are invoked as the result of user actions in the HTML page
- Use those callback functions to modify the attributes of HTML elements

Getting Started

Start by downloading the one file you will need for this assignment: “chooser.html”. The **chooser.html** file is an HTML page that you can use for testing your React component. At the top, it includes the libraries required for React. It also defines the *FontChooser* React component that you will implement. Its render function uses JSX to return the following HTML elements within a *div* element:

- a checkbox with the ID “boldCheckbox”
- a button with the ID “decreaseButton” and value “—”
- a span with the ID “fontSizeSpan” and value set to the React component's *this.props.size* value
- a button with the ID “increaseButton” and value “+” a span with the ID “textSpan” and value set to the React component's *this.props.text* value

Notice that the checkbox, two buttons, and “fontSizeSpan” are all initially hidden.

Activity

The *FontChooser* component should allow the user to change the font weight (bold or normal) and font size of the text that it is displaying. Implement the React component in *FontChooser* as follows:

1. Initial rendering

- When the component is initially rendered, the checkbox, buttons, and “fontSizeSpan” element should be hidden, as in the default version that you have. (5% of total marks)

2. Displaying the form elements

- When the checkbox, buttons, and “fontSizeSpan” element are hidden and the user clicks on the text that the component is displaying in the HTML page, the checkbox, buttons, and “fontSizeSpan” element should appear to the left of the text. (10% of total marks)
- When the checkbox, buttons, and “fontSizeSpan” element are shown and the user clicks on the text that the component is displaying in the HTML page, the checkbox, buttons, and “fontSizeSpan” element should disappear, i.e. become hidden again. (10% of total marks)

3. Checkbox functionality

- If the checkbox is unchecked and then the user checks it, the text should immediately change to bold. (10% of total marks)
- If the checkbox is checked and then the user unchecks it, the text should immediately change to normal font weight. (10% of total marks)

4. Changing the font size

- When the checkbox, buttons, and “fontSizeSpan” element are first displayed, the value in the “fontSizeSpan” should equal the React component’s “size” property, as in the default version you have. (5% of total marks)
- When the user clicks the “decreaseButton” (the one with the “—” sign on it), the value in the “fontSizeSpan” should decrement and the font size of the text should immediately decrease by one as well. However, the value in the “fontSizeSpan” may not be smaller than the React component’s “min” property. If the value in the “fontSizeSpan” equals the “min” property and the user clicks the “decreaseButton”, there should be no change. (10% of total marks)
- Likewise, when the user clicks the “increaseButton” (the one with the “+” sign on it), the value in the “fontSizeSpan” should increment and the font size of the text should immediately increase by one as well. However, the value in the “fontSizeSpan” may not be larger than the React component’s “max” property. If the value in the “fontSizeSpan” equals the “max” property and the user clicks the “increaseButton,” there should be no change. (10% of total marks)
- If the value of the “fontSizeSpan” equals the component’s “min” or “max” property, then its color should be red. (15% of total marks)
- When the text in the “fontSizeSpan” is double-clicked, its value should become equal to the initial value set as the component’s initial “size” property, and the font size of the text that is displayed should immediately change to that value as well. (15% of total marks)

5. What about...?

- You may encounter other cases that are not addressed in this document, e.g. what to do when the initial value is less than min. You may handle those cases in any manner you choose or ignore them entirely!

Notes

- Review the past few lessons to see the syntax for registering callback functions for events using React.
- You can set whether an HTML element is displayed or not using its “hidden” attribute and setting it to “true” or “false” accordingly
- You can set whether the checkbox appears as selected/checked or unselected/unchecked using its “checked” attribute and setting it to “true” or “false” accordingly
- Your browser’s JavaScript console may show a warning about the checkbox having a “checked” attribute without an “onChange” handler. So be sure that when you modify the JSX for the component, the checkbox has a handler for “onChange” and not “onClick.”
- In React, use “onDoubleClick” as the event name to set up the callback handler for double-clicking on an element
- Please properly cite any sources that you used. This includes any code snippets or examples that you found online. But you don’t need to cite the tutorials or resources that you used for guidance.
- The instructor is available during office hours. Meetings (physical or virtual) at other times can also be arranged, by appointment.

Good Luck!