Lab 2: **React Quick Start**

SED2115 – Web Application Software Design

Faculty of Engineering – University of Ottawa

Objective:

Learna and practice how to create and nest components, add markup and styles and display data. Rendering conditions and lists and responding to events to update the screen. Sharing data between components.

Instructions:

1. Follow the instructions at: https://react.dev/learn, capturing the updates to `App.js` and viewing the results in a "live" browser like Chrome or Firefox. See also: https://www.w3schools.com/react/default.asp or https://fullstackopen.com/en/part1 for more detailed explanations and exercises. For a brief introduction into how to think about building React components and applications, see https://react.dev/learn/thinking-in-react.
2. *If* you have time, complete the Tic-Tac-Toe tutorial too at: https://react.dev/learn/tutorial-tic-tac-toe
3. After working through the "Quick Start" material, answer the following questions, based on your **own** understanding and in your **own** words. If you decide to use GenAI to help you, then please type in **all** of the prompts that you've used to get your answer. Note that, if you provide what seems to be a "*canned*" answer, without (seemingly) demonstrating believably-personal understanding, then you will be given zero to 25% of the mark, but allowed to answer directly related skill-testing question**s** "live" with the TA to challenge the mark and earn back up to the other 75%, depending on your (unaided) answers to the challenge questions. In other words, translate whatever answers you find into *both* your own understanding and your own words.

Explain the difference between a hook and a prop, in your own words.

_____

_____

_____

_____

Explain the concept of a React component and the value of components and any specific requirements for naming your own React components.

_____

_____

What does conditional rendering mean?

_____

_____

_____

How do `for` loops and the `map()` function help when rendering large lists?

_____

_____

_____

What is a React event and what is an event handler function and how do they relate to each other?

_____

_____

_____

What does 'state' mean and when would you use it in a React component

_____

_____

_____

What does the useState React hook do? Explain what is happening in the following code and at least two other lines of code that you would expect to see inside a component that contained this specific line:

```
const [speed, setSpeed] = useState(50);
```

_____

_____

_____

What does "*lifting state up*" mean, practically speaking, for React components. When is it needed and when is it optional or required?

_____

_____

_____

In the `MyFile.jsx` file, what would curly braces, like { and }, indicate? Give two different *types* of things that can be put inside such curly braces in a javascript XML file.

_____

_____

_____

_____

What does the conditional '?' operator do, inside a javascript XML file? Give an example snippet of code that uses the conditional '?' operator.

_____

_____

_____

_____

Submission:

Submit the github link to your functional (and properly commented, to demonstrate your understanding of the code!) `App.js` file(s) as well as the filled-in tutorial file.

Due Date:

See BrightSpace.