

# IMY 220

## Assignment 7: React.js

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*Due: Wednesday 14 October @ 13:00*

*The submission instructions are available on ClickUP. Your assignment will not be marked if you do not follow these instructions.*

### Instructions

- The aim of this assignment is to create a UI for displaying an interactive matrix of input boxes. The matrix does not have to be capable of calculating anything.
- There are no files to download for this assignment. You must create all of them yourself.
- You must use the CDN versions of the React library and Babel for this assignment.

### Section 1 – Matrix Row

Create two files called *index.html* and *script.js*. All your code for this assignment needs to be written inside these two files. Include all the necessary libraries to be able to use react.js as well as the Bootstrap CSS inside *index.html* and use *script.js* for all the necessary JavaScript coding. Also create a div with a class of “react-container” inside *index.html* and use this element as the target for rendering react.js components.

Define a react.js component called `MatrixRow` which renders a row of input boxes (the type doesn't matter). The component must be able to receive a prop which sets the amount of input boxes, for example if this prop is set to a value of 3, the following must be returned by the render function:

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### Section 2 – Matrix

Define a react.js component called `Matrix` which renders a number of `MatrixRow` components. The `MatrixRow` component must take two props (called *rows* and *cols*) which define the number of rows and columns of input boxes to be rendered using `MatrixRow` components. For example, if a `Matrix` component is rendered as follows:

```
<Matrix rows="4" cols="3" />
```

...the result must look as follows:


If a Matrix component is rendered without either of these props, i.e. rows and cols, it must use a default value of 2 for either prop. For example, if a Matrix component is rendered as follows:

```
<Matrix cols="3" />
```

...the result must look as follows:


### Section 3 – MatrixSizeForm

Define a react.js component called MatrixSizeForm which renders two Bootstrap range inputs, one for the height of the Matrix and one for the width, as well as accompanying labels. The height-range-input should have a maximum value of 10 and the width-range-input a maximum of 6. This should look as follows when rendered:

Height




Width




The MatrixSizeForm should be included inside the Matrix component's render function and should be rendered above the input boxes. When a user changes the values on the range inputs, the size of the Matrix should reflect these changes, for example, if the user sets a height of 5 and a width of 3 using the range inputs:

Height



Width




To do this, you will need to save the width and height of the Matrix in the Matrix component's *state* and use this *state* to alter the width of the MatrixRow components and the amount of MatrixRow components being displayed. You may only make use of React's built-in functionality for handling events, catching input values, and passing data between components to accomplish this interactivity.

In order to clarify the required functionality for this assignment, an example file called *A7\_memo.html* has been included for you to download, which demonstrates what you are required to implement using react.js. (Don't worry about the code contained inside this file, just use the file to understand the required functionality. If your code looks anything like the code inside this file, it will not be marked.)

## **Additional Information**

- Refer to the slides and react.js website for help

*Submit only the following file(s) according to the submission instructions.*

- *index.html*
- *script.js*