Q1

A state in react is an object which is used to stores information about a component. The state of a component can change and when it does the component is re-rendered

class App extends Component {

  state = {

    idCounter:3,

    students: [

      {

        id : 1,

        name: "Timmy",

        subject: "Biology"

      },

      {

        id : 2,

        name: "Joe",

        subject: "Biology"

      },

      {

        id : 3,

        name: "billy",

        subject: "Maths"

      },

    ]

  }

The code above has an App class that has an array of objects for its state

 DeleteStudent = (id) => {

    this.setState({students : [...this.state.students.filter(students =>

      students.id !== id)]});

  }

This function above deletes the student using the setState function. This shows how the state can change, a student can be deleted by setting the student array to contain all the current students except the student which has a matching ID picked.

Props are data which are passed from one react component to another component. These props can only be read and cannot be modified. If change is to be done using props you need to change the state of the components passing the props.

<Student students={this.state.students} edit={this.EditStudent}

         delete={this.DeleteStudent} name={this.changeName}/>

this is the state of the App class being passed into the Student component as props.

<StudentItem key={students.id} students={students} edit= {this.props.edit} delete={this.props.delete}  name={this.props.name}/>

This is the props of the student component, being passed into the StudentItem component. To prop is accessed through “this.props.object”.

q2

A functor is a data structure which can be mapped over by a function. A functor can contain elements of any mappable data types. It takes in a parameter and a function, it then calls the function for every element from the parameter passed into it.

function subtractOne(num){

    return num -1;

}

let arr = [7,2,8];

arr.map((num) => subtractOne(num));

// would be [6,1,7]

The above code has a map function which operates on the arr array, it iterates through the array and subtracts one from each element

Q3

An advantage of callback functions is that it lets you wait for the result of a function call then execute another function call after it directly

A disadvantage of callback functions is that it does not scale well with asynchronous functions. It makes the code less efficient, less readable and harder to debug.

An advantage of promises is that they can handle asynchronous operations well while keeping the code readable and easy to debug

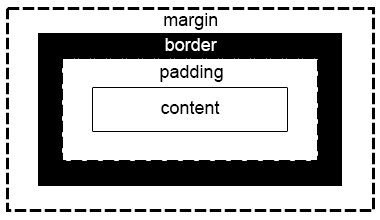
A disadvantage of promises is that it can only return one object and it also kills the purpose of asynchronous non-blocking input output

Streams advantages are when handling and processing data that are continuous, data whose size is unknown and when the data’s arrival time is also unknown such as videos.

An advantage of streams is that they let you transfer large amounts of data efficiently

A disadvantage of streams is that when dealing with single requests or other simple scenarios using streams is an overcomplicated solution and instead you could use promises and be more efficient

q4



The box model talks about the design and layout in a website. The box model is a box which encapsulates every HTML element. The box model of 4 parts the margin, border, padding and content.

The margin is an empty section right outside the border. The code for the margin looks like the following,

div {  
  margin: 20px;  
}

The border is a border which surrounds the padding. The code for the border looks like the following,

div {  
  border: 15px solid green;  
}

The padding is an empty area which surrounds the content. The code for the padding looks like the following,

div {  
  padding: 50px;  
}

The content is a box which contains the content whether that be text or images.

q5

When searches for a website’s domain in the browser the browser makes a tcp connection between your computer and the website’s server. Once this connection is made the browser will request data which the server responds by sending data to.

The website’s first request is to load in the website’s HTML, CSS and JavaScript files into the browser. The browser will then pare each of these and execute all the commands in them such as rendering the DOM elements from the HTML files. Certain commands will make the browser connect to the either the website’s server or another server to request more data.