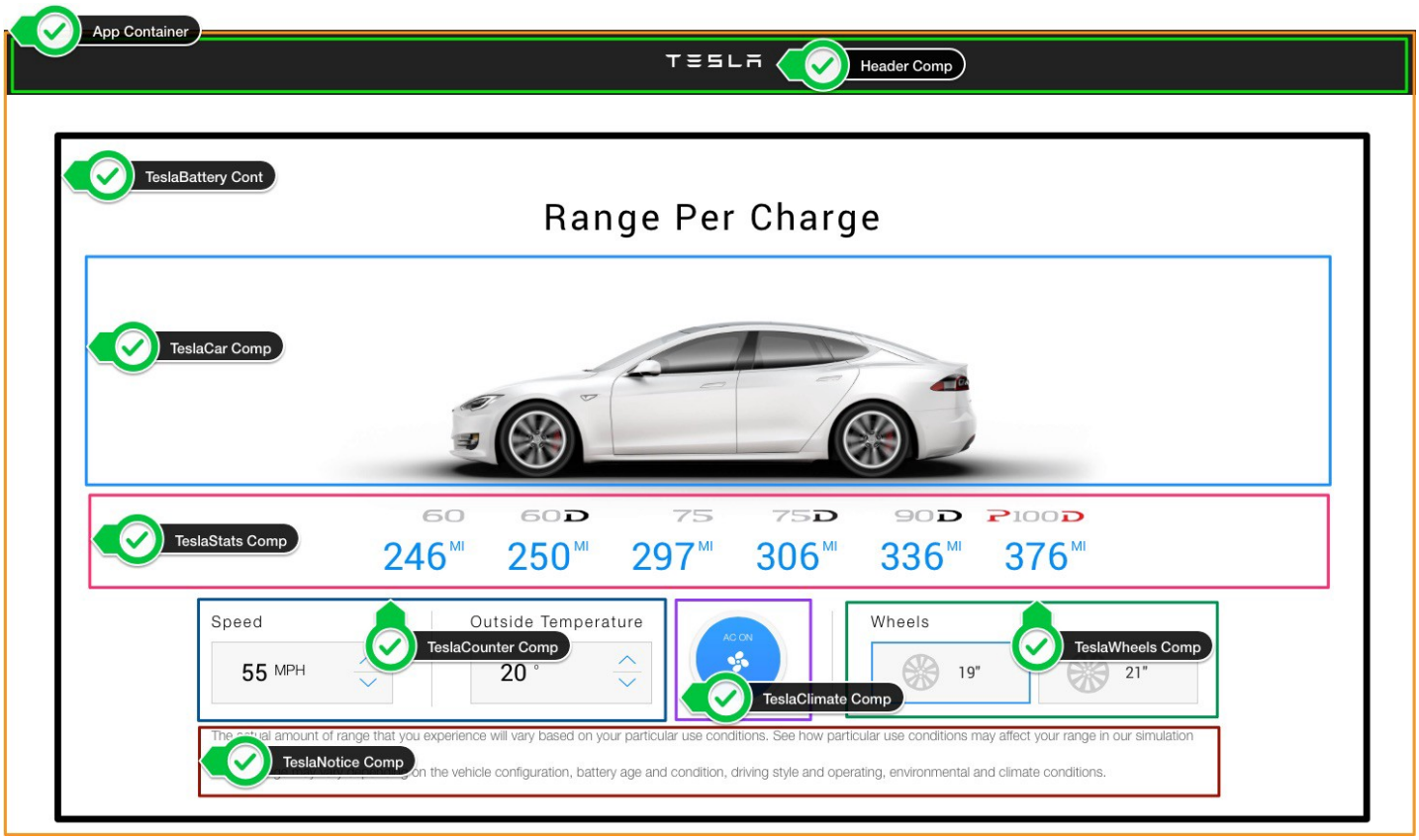
1.3 Breaking Down the UI

Almost all React application UIs consist of a composition of components. For example, a weather app consists of a component that displays a local name, a component that displays the current temperature, and a graph component that represents a five-day forecast. For this reason, it is a good idea to decompose the UI into component units before developing the React app.

> See *Thinking in React* for an approach to looking at an application as a combination of components.

The layout of this application is shown below



The UI is represented by a component tree as follows.

```
<App> -- Application entry point
 <Header></Header>
  <TeslaBattery> -- Container
        <TeslaCar />     -- Presentational Component
        <TeslaStats />   -- Presentational Component
```

```
        <TeslaCounter /> -- Presentational Component
        <TeslaClimate /> -- Presentational Component
        <TeslaWheels />  -- Presentational Component

        <TeslaNotice />  -- Presentational Component
  </TeslaBattery>
</App>
```

1.3.1 Container and Presentational Components

In the above mentioned component tree, we can see that it is classified as `Container Component` and `Presentational Component`.

This is a useful pattern that can be used when developing an application with React. It is easier to reuse by dividing components into two categories.

```
* Container Component (stateful component):
 - Are concerned with how things work.
 - In general, except for some wrapping divs, they do not have their   own DOM
 markup and have no style.
 - Provide data and actions to presentational or other container components.
 - Are often stateful, as they tend to serve as data sources.

* Presentational Component (stateless component):
 - Are concerned with how things look.
 - Usually have some DOM markup and styles of their own.
 - Receive data and callbacks exclusively via props.
 - Rarely have their own state (when they do, it's UI state rather than data).
```

What are the benefits of using these patterns?

- Better separation of concerns
- Better reusability
- Extract layout components to prevent duplication

> *For more details, see Presentational and Container Components*