Final Touches

Let's make a few final improvements to the sign-up component.

Composing Higher-Order Components

There is one improvement that we can make for the higher-order components used for the SignUpForm. Nesting functions (higher-order components) into each other like we did before can become verbose. A better way is to compose the higher-order components instead. For this, we must install **recompose** for our application:

```
npm install recompose
```

We can use `recompose` to organize our higher-order components. Since the higher-order components don't depend on each other, the order doesn't matter. But it may be helpful to know that the `compose` function applies to the higher-order components from right to left.

```
import React, { Component } from 'react';
import { Link, withRouter } from 'react-router-dom';
import { compose } from 'recompose';

import { withFirebase } from '../Firebase';
import * as ROUTES from '../../constants/routes';


...

const SignUpForm = compose(
  withRouter,
  withFirebase,
)(SignUpFormBase);
```
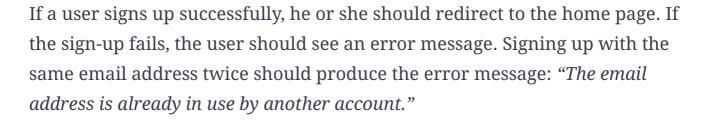
```
export default SignUpPage;

export { SignUpForm, SignUpLink };
```

SignUp/index.js

Final Checks

If a user signs up successfully, he or she should redirect to the home page. If the sign-up fails, the user should see an error message. Signing up with the same email address twice should produce the error message: *"The email address is already in use by another account."*

Congratulations, we've signed up our first user via Firebase authentication!

Next, we will run and verify our app to test if our sign-up component is working.