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Styling a React App with Material UI

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Introduction

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Introduction

This guide will discuss the step-by-step process of creating and styling a React app with Material UI.

This app will use the character endpoint of the Final Space API, a free RESTful API that provides information about characters, episodes, and locations of the Final Space TV show.

This guide assumes you already know how to install and configure Material UI in a React app. You can read Installing and Using

Material UI with React to get started.

Setting Up React App

You can use a Create React App template to quickly initialize a React project without doing any manual configurations.

In your project's root directory, run the following command.

bash

```
npx create-react-app react-material-ui-example
cd react-material-ui-example
```

To install Material-UI, run the following command in your React project's root directory.

bash

```
npm install @material-ui/core
```

Add the following code to the `<head>` tag of your `public/index.html` file.

html

```
<link rel="stylesheet" href="https://fonts.googleapis.com/css?family=Robot
```

Delete `App.css`, `index.css`, `logo.svg` from the `src` directory.

Remove `index.css` import from the `src/index.js` file.

JSX

```jsx
// src/index.js
import React from 'react';
import ReactDOM from 'react-dom';
import App from './App';

ReactDOM.render(
  <React.StrictMode>
    <App />
  </React.StrictMode>,
  document.getElementById('root')
);
```

Modify your `src/App.js` file like this.

JSX

```jsx
// src/App.js
import React, { useEffect, useState } from "react";

function App() {
  return <div></div>;
}

export default App;
```

Start the development server by running the following command in the terminal.

bash

```
npm start
```

Navigate to http://localhost:3000; you will see a blank page since your app is currently empty.

Fetching Data from the API

First, you need to fetch data from the `/character` endpoint of the Final Space API. You can do this by using `fetch()` inside the `useEffect()` hook and storing the response data inside the state variable. You can also use `axios` to make API requests.

By providing an empty array as a second argument to `useEffect()`, you can ensure that the request is made only after the initial render.

JSX

```
function App() {
  const [data, setData] = useState([]);
  useEffect(() => {
    fetch("https://finalspaceapi.com/api/v0/character/?limit=12")
```

```
        .then((res) => res.json())
        .then((data) => setData(data));
    }, []);

    return <div></div>;
  }

  export default App;
```

In the above code, you have limited the response from the endpoint by passing the `/?limit=12` query in the URL.

Using a Container to Wrap a React App

Now, you will use the `Container` component to add some margins to the app.

Import `Container` from the Material-UI library.

JSX

```
import Container from "@material-ui/core/Container";
```

Now, use it inside the `App()` function.

JSX

```
return (
  <div>
```

```
      <Container> </Container>
    </div>
  );
```

You will not see any change on your app, but some margins have been added to it, which will be apparent after adding other components inside `Container`.

Adding Heading to React App

Your app needs a heading; for this, use the `Typography` component of the Material-UI library. Import this component in `App.js` file.

JSX

```
import Typography from "@material-ui/core/Typography";
```

Now, use it inside the `Container` component.

JSX

```
<Container>
  <Typography color="textPrimary" gutterBottom variant="h2" align="center'
    React Material UI Example
  </Typography>
</Container>
```

Here is how this will look.

React Material UI Example

These are the props that are used:

- `gutterBottom`: Adds margin to the bottom of the component.
- `color="textPrimary"`: Specifies the color of the text. You can use `textSeconadry`, `primary`, etc. also.
- `align="center"`: Center aligns the component.
- `variant="h2"`: Applies the theme typography styles.

There are even more props that you can pass to style the `Typography` component. You can read about them here.

Creating Character Cards

Next, you need to decide which data to show in your app; this project will display `name`, `image`, and `status` of the character. You can check out the Character Schema and add additional data to the app.

You will import and use `Card`, `CardMedia`, and `CardContent` components to create cards for each character.

JSX

```
import Card from "@material-ui/core/Card";
import CardContent from "@material-ui/core/CardContent";
import CardMedia from "@material-ui/core/CardMedia";

```

`CardContent` is used to show information, and `CardMedia` is used to display an image inside the `Card` component.

The source of the image goes in the `image` prop of the `CardMedia` component.

Use the `.map()` method on the `data` variable to create individual cards for characters. Add the following code after the `<Typography>` component.

JSX

```
{
  data.map((character) => (
    <Card
      style={{
        maxWidth: 345,
        boxShadow: "0 5px 8px 0 rgba(0, 0, 0, 0.3)",
        backgroundColor: "#fafafa",
      }}
    >
      <CardMedia style={{ height: "300px" }} image={character.img_url} />
    </Card>
  ))
}
```

Here is how your app will look.

React Material UI Example

In the above code, you have used inline styling to style the `Card` and `CardImage` components; it works but makes your code look messy.

Luckily, Material-UI provides a solution for this: `makeStyles`. Using `makeStyles`, you can add CSS in JS without making your code look messy.

First, you need to import `makeStyles` in your app.

JSX

```jsx
import { makeStyles } from "@material-ui/core/styles";
```

Next, pass all the CSS you need in your app as an object to `makeStyles` and store it inside a variable, `useStyles`. This code comes before the `App()` function. You can create nested objects to style different components.

Here, `card` is for styling the `Card` component and `media` is for styling the `CardImage` component.

JSX

```jsx
const useStyles = makeStyles({
  card: {
    maxWidth: 345,
    boxShadow: "0 5px 8px 0 rgba(0, 0, 0, 0.3)",
    backgroundColor: "#fafafa",
  },
  media: {
    height: 300,
  },
});

function App() {
  ...
}
export default App;
```

To use this inside `App()` function, initialize a variable before the `return` statement.

JSX

```
const classes = useStyles();
```

And that's it. You can now pass this `classes` and the nested object inside it as the `className` to style the component.

JSX

```
{
  data.map((character) => (
    <Card className={classes.card}>
      <CardMedia className={classes.media} image={character.img_url} />
    </Card>
  ))
}
```

Navigate to http://localhost:3000; you will notice that your app looks just the same as before.

Adding Name and Status to Card

The next step is to add the `name` and `status` of the character using the `CardContent` and `Typography` component.

Add the following code inside the `Card` component.

JSX

```jsx
    <Card className={classes.card}>
      <CardMedia className={classes.media} image={character.img_url} />
      <CardContent>
        <Typography color="primary" variant="h5">
          {character.name}
        </Typography>
        <Typography color="textSecondary" variant="subtitle2">
          {character.status}
        </Typography>
      </CardContent>
    </Card>
```

Here is how this will look.

As you can see, here you have used the `Typography` component three times, and all of them look entirely different. So the output can change significantly based on what values are passed to a component's prop.

Using Grid Component

This column of cards doesn't look right. To fix this, you will use the `Grid` component to change the app's layout.

First, import the `Grid` component in your `App.js` file.

JSX

```jsx
import Grid from "@material-ui/core/Grid";
```

Next, wrap all the cards inside a `Grid` component. You can use two types of layout with `Grid,` i.e., `item` and `container`. Here you will use the `container` layout.

JSX

```jsx
<Grid container spacing={3}>
  {data.map((character) => (
    <Card className={classes.card}>
      <CardMedia className={classes.media} image={character.img_url} />
      <CardContent>
        <Typography color="primary" variant="h5">
          {character.name}
        </Typography>
        <Typography color="textSecondary" variant="subtitle2">
          {character.status}
        </Typography>
      </CardContent>
    </Card>
  ))}
</Grid>
```

Next, wrap each individual card inside the `Grid` component with the `item` layout.

JSX

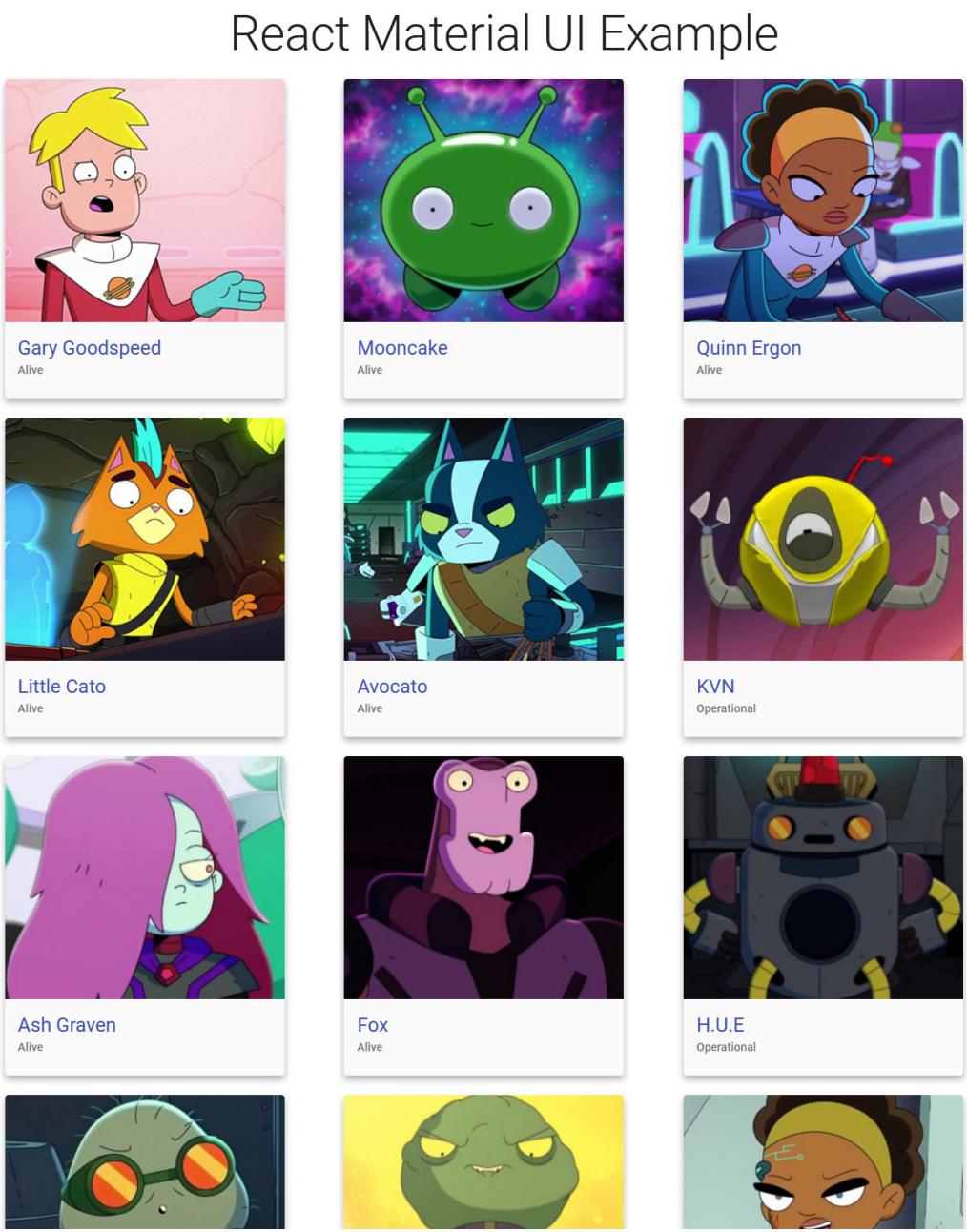
```jsx
{
  data.map((character) => (
    <Grid item xs={12} sm={4} key={character.id}>
      <Card className={classes.card}>
        <CardMedia className={classes.media} image={character.img_url} />
        <CardContent>
          <Typography color="primary" variant="h5">
            {character.name}
          </Typography>
          <Typography color="textSecondary" variant="subtitle2">
            {character.status}
          </Typography>
        </CardContent>
      </Card>
    </Grid>
  ));
}
```

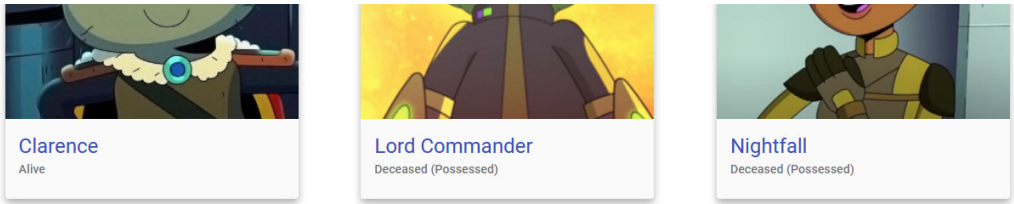
When mapping over an array in React, you need to pass a key prop to distinguish each child element. Here, the `id` of the character is passed to the `key` prop.

In the above code, `xs` and `sm` grid breakpoints are set as `12` and `4`, respectively. If you are not familiar with grid breakpoints, you

can read more about them here.

Here is how your app will look.





Complete Code

Here is the complete code for this app.

JSX

```jsx
import React, { useEffect, useState } from "react";
import Container from "@material-ui/core/Container";
import Card from "@material-ui/core/Card";
import Typography from "@material-ui/core/Typography";
import CardContent from "@material-ui/core/CardContent";
import CardMedia from "@material-ui/core/CardMedia";
import { makeStyles } from "@material-ui/core/styles";
import Grid from "@material-ui/core/Grid";

const useStyles = makeStyles({
  card: {
    maxWidth: 345,
    boxShadow: "0 5px 8px 0 rgba(0, 0, 0, 0.3)",
    backgroundColor: "#fafafa",
  },
  media: {
    height: 300,
  },
});

```

```
function App() {

  const [data, setData] = useState([]);

  useEffect(() => {
    fetch("https://finalspaceapi.com/api/v0/character/?limit=12")
      .then((res) => res.json())
      .then((data) => setData(data));
  }, []);

  const classes = useStyles();

  return (
    <div>
      <Container>
        <Typography
          color="textPrimary"
          gutterBottom
          variant="h2"
          align="center"
        >
          React Material UI Example{" "}
        </Typography>
        <Grid container spacing={3}>
          {data.map((character) => (
            <Grid item xs={12} sm={4} key={character.id}>
              <Card className={classes.card}>
                <CardMedia
                  className={classes.media}
                  image={character.img_url}
                />
                <CardContent>
                  <Typography color="primary" variant="h5">
                    {character.name}
                  </Typography>
```

```
                    <Typography color="textSecondary" variant="subtitle2">
                      {character.status}
                    </Typography>
                  </CardContent>
                </Card>
              </Grid>
            ))}
          </Grid>
        </Container>
      </div>
    );
  }

  export default App;
```

You can explore this React app here.

Conclusion

This guide demonstrated the step-by-step process of creating and styling a React app with Material UI. You should try to customize this app further with different Material UI components and layouts.

Here are some additional resources that can be helpful.

- Material UI Docs
- Material Design

- Final Space API docs

Happy coding!