



Web Programming Spring 2021

#21

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Topics

- The concepts of Web Services
- Web data protocols
 - HTTP, WebSocket, WebRTC
 - HTML, CSS
- Web JavaScript programming
- Cookies and sessions
- **Web Frontend frameworks**
- Web Backend frameworks
- RESTful API design



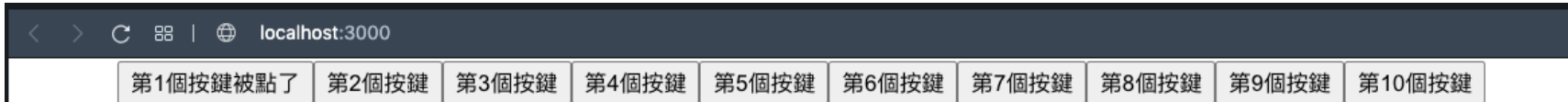


React / ReactJS

- React Ecosystem
- 開發環境
- 核心概念 — 元件(Components)
- 單向資料流 (Unidirectional data flow)
- Virtual DOM
- Declarative UI / JSX
- React Router

真 程式碼模組化

- 例如我們要让每一個按鈕計算自己被按了幾次
 - 1. 元件自己計算 ！！
- 模組化後 每個元件應該要可以保持自己的**狀態**
 - **自己管自己的狀態 ！！**



很好

我們來真的模組化吧！！





先讓外表漂亮一點 (UI)
再增加內涵 (State)
比較“西華”一點



React UI Component lib

Basic Elements

Buttons

Pick your style



Pick your size



Pick your color



Material Kit React



Material Kit React 小姐姐

Checkboxes

- ☐ Unchecked
- ☒ Checked
- ☐ Disabled Unchecked
- ☒ Disabled Checked

Radio Buttons

- ☐ First Radio
- ☒ Second Radio
- ☐ Disabled Unchecked Radio
- ☒ Disabled Checked Radio

Toggle Buttons

- ☒ Toggle is on
- ☐ Toggle is off

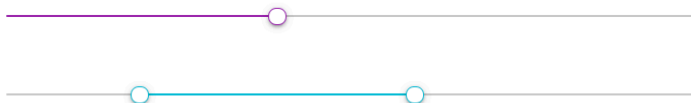
Progress Bars



Pagination

- 1 ... 5 6 7 8 9 ... 12
- PREV 1 2 3 4 5 NEXT

Sliders



Badges

- DEFAULT
- PRIMARY
- INFO
- SUCCESS
- WARNING
- DANGER
- ROSE



Material Kit React 引入開發環境

- npm install @material-ui/core
- npm install @material-ui/icons
- npx install @material-ui/core (MS WIN)

```
$ npm install @material-ui/core
added 33 packages, changed 7 packages, and audited 1733 packages in 15s

133 packages are looking for funding
  run `npm fund` for details

1 moderate severity vulnerability

To address all issues, run:
  npm audit fix

Run `npm audit` for details.
```



增加 Material Kit

<script>

```
import Button from '@material-ui/core/Button';
```

```
const MultiButton=(num)=>{  
  var output=[];  
  for(let i=1;i<num+1;++i) {  
    output.push(<Button variant="contained" color="primary"  
      onClick={changeText}>第{i}個按鍵</Button>)  
  }  
  return output;  
}  
</script>
```



Material Kit 效果

hello CGU!!

第1個按鍵

第2個按鍵

第3個按鍵

第4個按鍵

第5個按鍵

第6個按鍵

第7個按鍵

第8個按鍵

第9個按鍵

第10個按鍵



<script>

```
import IconButton from '@material-ui/core/IconButton';  
import DeleteIcon from '@material-ui/icons/Delete';  
import AlarmIcon from '@material-ui/icons/Alarm';  
import AddShoppingCartIcon from '@material-ui/icons/AddShoppingCart';
```

```
const MultiButton=(num)=>{
```

```
  var output=[];
```

```
  output.push(
```

```
    <IconButton color="primary" aria-label="add to shopping cart">
```

```
    <AddShoppingCartIcon /></IconButton>)
```

```
  output.push(<IconButton color="primary" aria-label="delete">
```

```
    <DeleteIcon /></IconButton>)
```

```
  output.push(<IconButton color="primary" aria-label="add an alarm">
```

```
    <AlarmIcon /></IconButton>)
```

```
  return output;
```

```
}
```

</script>



Material Kit 效果 可愛的按鈕

hello CGU!!



Material Kit React 引入開發環境

- `npm install @material-ui/data-grid`

<input type="checkbox"/>	ID	First name	Last name	Age	Full name
<input type="checkbox"/>	1	Jon	Snow	35	Jon Snow
<input type="checkbox"/>	2	Cersei	Lannister	42	Cersei Lannist...
<input type="checkbox"/>	3	Jaime	Lannister	45	Jaime Lannister
<input type="checkbox"/>	4	Arya	Stark	16	Arya Stark
<input type="checkbox"/>	5	Daenerys	Targaryen		Daenerys Targ...
Total Rows: 9					1-5 的 9 < >



```
<script>
import { DataGrid } from '@material-ui/data-grid';

const columns = [...];
const rows = [
  { id: 1, lastName: 'Snow', firstName: 'Jon', age: 35 },
  { id: 2, lastName: 'Lannister', firstName: 'Cersei', age: 42 },
  { id: 3, lastName: 'Lannister', firstName: 'Jaime', age: 45 },
  { id: 4, lastName: 'Stark', firstName: 'Arya', age: 16 },
  { id: 5, lastName: 'Targaryen', firstName: 'Daenerys', age: null },
  { id: 6, lastName: 'Melisandre', firstName: null, age: 150 },
  { id: 7, lastName: 'Clifford', firstName: 'Ferrara', age: 44 },
  { id: 8, lastName: 'Frances', firstName: 'Rossini', age: 36 },
  { id: 9, lastName: 'Roxie', firstName: 'Harvey', age: 65 },
];

const MultiButton=(num)=>{
  return (<div style={{ height: 400, width: '50%' }}>
    <DataGrid rows={rows} columns={columns} pageSize={5} checkboxSelection />
  </div>);
}</script>
```




material-ui/data-grid

<input type="checkbox"/>	ID	First name	Last name	Age	Full name
<input checked="" type="checkbox"/>	1	Jon	Snow	35	Jon Snow
<input checked="" type="checkbox"/>	2	Cersei	Lannister	42	Cersei Lannis...
<input type="checkbox"/>	3	Jaime	Lannister	45	Jaime Lannister
<input type="checkbox"/>	4	Arya	Stark	16	Arya Stark
<input type="checkbox"/>	5	Daenerys	Targaryen		Daenerys Tar...

2 rows selected

1-5 of 9 < >



```
<script>
import { makeStyles } from '@material-ui/core/styles';
import Card from '@material-ui/core/Card';
import CardActionArea from '@material-ui/core/CardActionArea';
import CardActions from '@material-ui/core/CardActions';
import CardContent from '@material-ui/core/CardContent';
import CardMedia from '@material-ui/core/CardMedia';
import Button from '@material-ui/core/Button';
import Typography from '@material-ui/core/Typography';

const useStyles = makeStyles({
  root: {
    maxWidth: 345,
  },
  media: {
    height: 140,
  },
});
</script>
```



```
<script>
const MultiButton=(num)=>{
  const classes = useStyles();
  return (<Card className={classes.root}>
    <CardActionArea>
      <CardMedia
        className={classes.media}
        image="https://material-ui.com/static/images/cards/contemplative-reptile.jpg"
        title="Contemplative Reptile"
      />
      <CardContent>
        <Typography gutterBottom variant="h5" component="h2">
          Lizard
        </Typography>
        <Typography variant="body2" color="textSecondary" component="p">
          Lizards are a widespread group of squamate reptiles, with over 6,000 species, ranging
          across all continents except Antarctica
        </Typography>
      </CardContent>
    </CardActionArea>
    <CardActions>
      <Button size="small" color="primary">
        Share
      </Button>
      <Button size="small" color="primary">
        Learn More
      </Button>
    </CardActions>
  </Card>);
</script>
```



Lizard

Lizards are a widespread group of squamate reptiles, with over 6,000 species, ranging across all continents except Antarctica

[SHARE](#) [LEARN MORE](#)

Basic

Disabled

M Clickable



Deletable



Clickable deletable



Custom delete icon ✓

Clickable Link



Primary clickable ✓



Primary clickable ✓

Deletable primary



Deletable secondary



Date picker inline

08/18/2014



Date picker dialog

08/18/2014



Time picker

09:11 PM



99



99+



999+



先讓外表漂亮一點 (UI)

Google material-ui

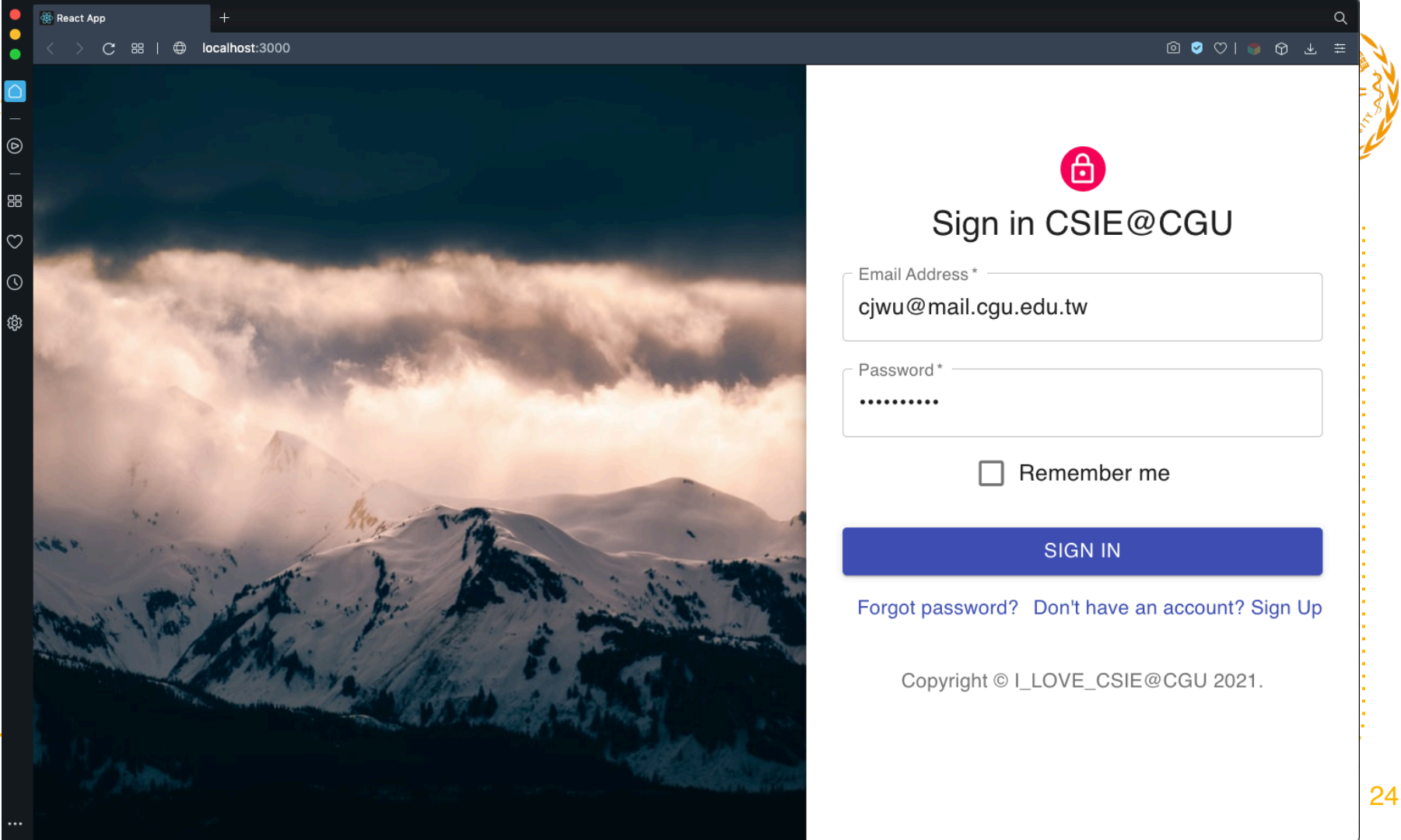
Get more info ...

<https://material-ui.com/store/previews/material-kit/>



Homework #3 or 4

- 用 material-ui 整一個 登入元件
- 至少要可以輸入
 - Email
 - Password
 - 一個sign in 按鈕
 - 一個都不行少





Homework #3 or 4

- 用 material-ui 整一個 登入元件
- **0. npm run build**
- **1. Commit all file to react_homework**
- **2. push to react_homework repository**

然後 我們要 真 程式碼模組化 完全體

- 例如我們要讓每一個按鈕計算自己被按了幾次
 - 1. 元件自己計算 ！！
- 模組化後 每個元件應該要可以保持自己的**狀態**
 - **自己管自己的狀態 ！！**





Thanks!

Open for any questions

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