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# 10. 路由 Route

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# 大綱



- React Navigation
- Stack Navigation
- Tab Navigation
- Drawer Navigation
- Modal

# React Navigation



- <https://reactnavigation.org/>
- React Navigation的誕生，源於React Native社區對基於JavaScript的可擴展且使用簡單的路由解決方案的需求。
- React Navigation是Facebook，Expo和React社區的開發者們合作的結果：它取代並改進了React Native生態系統中的多個路由函式庫，其中包括 Ex-Navigation ， React Native 的 Navigator 和 Navigation Experimental 元件。

# React Navigation



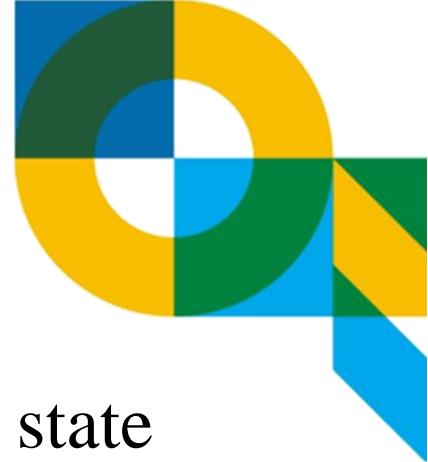
- 要開始使用React Navigation，必須先建立一個navigator，React Navigation帶有三種預設的navigator。
  - StackNavigator**: 為應用程式提供了一種頁面切換的方法，每次切換時，新的頁面會放置在堆疊的頂部
  - TabNavigator**: 用於設置具有多個Tab頁的頁面
  - DrawerNavigator**: 用於設置抽屜導航的頁面

# 安裝步驟



1. `npm install @react-navigation/native react-native-gesture-handler @react-navigation/native-stack @react-navigation/drawer @react-navigation/bottom-tabs`
2. `npx expo install expo-constants`

# NavigationContainer



- The **NavigationContainer** is responsible for managing your app state and linking your top-level navigator to the app environment.
- The container takes care of platform specific integration and provides various useful functionality:
  1. Deep link integration with the linking prop.
  2. Notify state changes for screen tracking, state persistence etc.
  3. Handle system back button on Android by using the BackHandler API from React Native.

# NavigationContainer



```
01: import * as React from 'react';
02: import { NavigationContainer } from '@react-navigation/native';
03:
04: export default function App() {
05:   return (
06:     <NavigationContainer>
07:       {/* Rest of your app code */}
08:     </NavigationContainer>
09:   );
10: }
```



App() 中 return **NavigationContainer**

# Stack

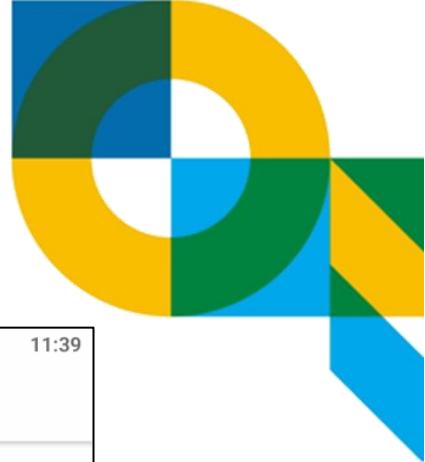
宣告一個 Stack navigator



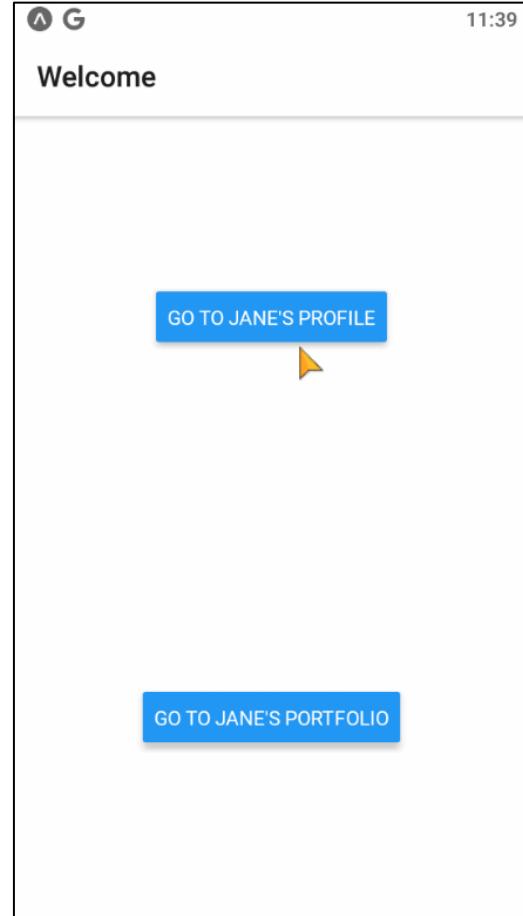
```
01: import * as React from 'react';
    import {Button, Text, View, StyleSheet, Constants, StatusBar }from 'react-native';
    import Constants from 'expo-constants';
02: import { NavigationContainer } from '@react-navigation/native';
03: import { createStackNavigator } from '@react-navigation/native-stack';
04:
05: const Stack = createStackNavigator();
06:
07: export default function App() {
08:   return (
09:     <NavigationContainer>
10:       <Stack.Navigator>{/* ... */}</Stack.Navigator>
11:     </NavigationContainer>
12:   );
13: }
```

定義頁面 route

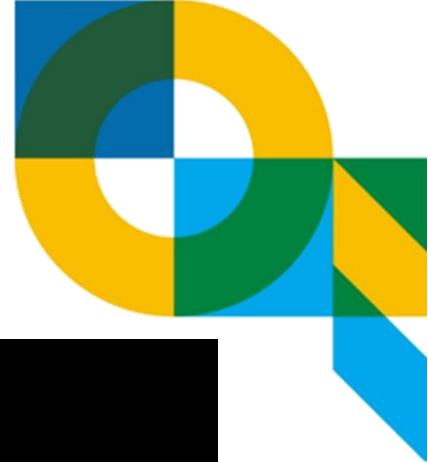
# App-stack.js



1. 三個頁面
  1. Home
  2. Profile
  3. Portfolio
2. 頁面之間有按鈕可以切換
3. 預設有 back key 可以回上一頁



# App-stack.js



```
46: export default function App() {  
47:   return (  
48:     <NavigationContainer>  
49:       <Stack.Navigator>  
50:         <Stack.Screen  
51:           name="Home"  
52:             1 component={HomeScreen}  
53:             options={{  
54:               title: 'Welcome',  
55:             }}  
56:           />  
57:         2 <Stack.Screen name="Profile" component={ProfileScreen}/>  
58:         3 <Stack.Screen name="Portfolio" component={PortfolioScreen} />  
59:       </Stack.Navigator>  
60:     </NavigationContainer>  
61:   );  
62: }
```

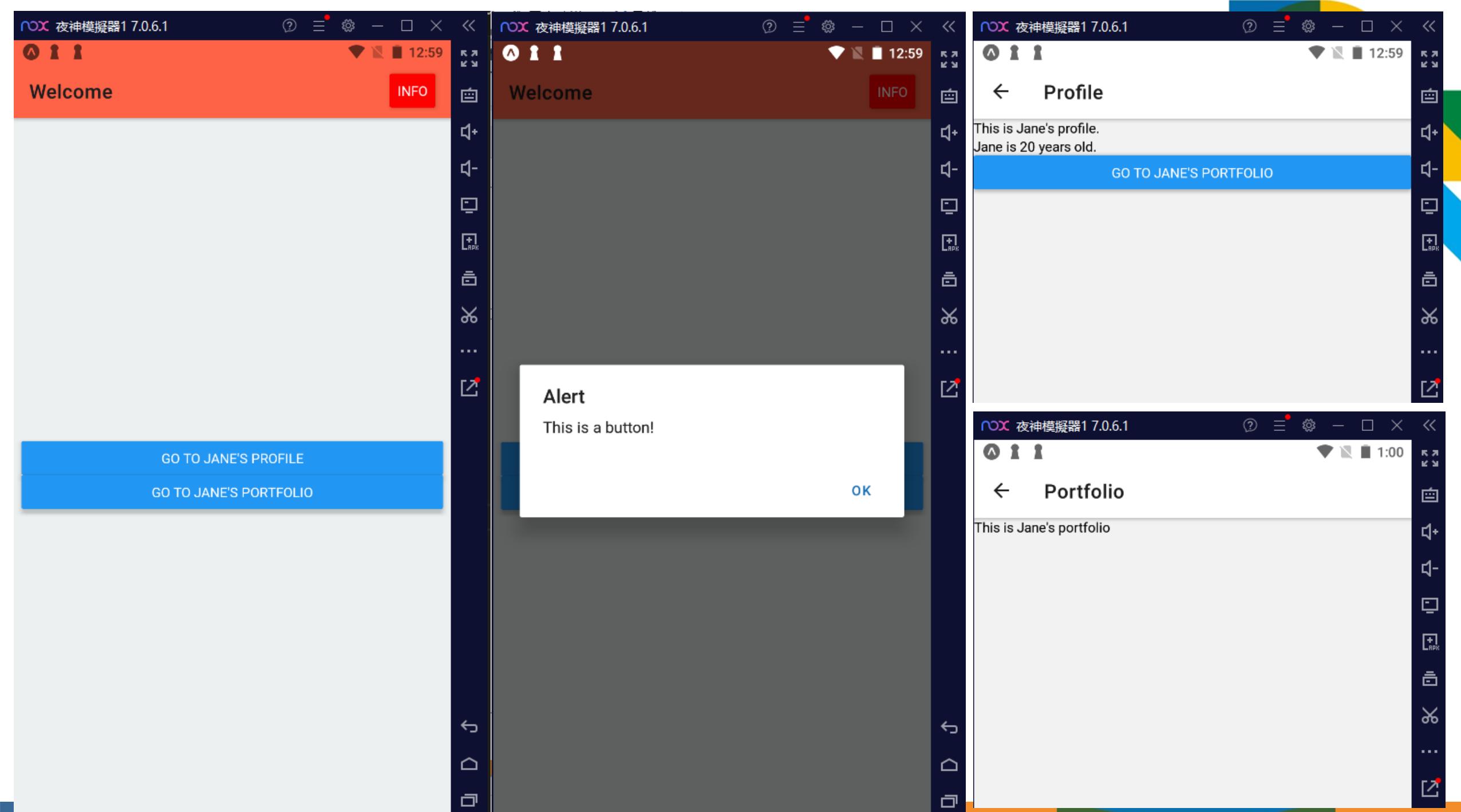
# App-stack.js

```
46: export default function App() {  
47:   return (  
48:     <NavigationContainer>  
49:       <Stack.Navigator>  
50:         <Stack.Screen  
51:           name="Home"  
52:           component={HomeScreen} ->  
53:           options={{  
54:             title: 'Welcome',  
55:           }}  
56:         />  
57:         <Stack.Screen name="Profile" component={ProfileScreen}/>  
58:         <Stack.Screen name="Portfolio" component={PortfolioScreen} />  
59:       </Stack.Navigator>  
60:     </NavigationContainer>  
61:   );  
62: }  
  
27: const ProfileScreen = ({ navigation, route }) => {  
28:   return (  
29:     <View style={styles.profile}>  
30:       <Text>This is {route.params.name}'s profile. </Text>  
31:       <Text>{route.params.name} is {route.params.age} years old.</Text>  
32:       <Button  
33:         title="Go to Jane's portfolio"  
34:         onPress={() =>  
35:           navigation.navigate('Portfolio', { name: 'Jane' })  
36:         }  
37:       />  
38:     </View>  
39:   );  
40: };  
  
42: const PortfolioScreen = ({ navigation, route }) => {  
43:   return (<Text>This is {route.params.name}'s portfolio</Text>)  
44: };  
  
08: const HomeScreen = ({ navigation }) => {  
09:   return (  
10:     <View style={styles.container}>  
11:       <Button  
12:         title="Go to Jane's profile"  
13:         onPress={() =>  
14:           navigation.navigate('Profile', { name: 'Jane', age: 20 })  
15:         }  
16:       />  
17:       <Button  
18:         title="Go to Jane's portfolio"  
19:         onPress={() =>  
20:           navigation.navigate('Portfolio', { name: 'Jane' })  
21:         }  
22:       />  
23:     </View>  
24:   );  
25: };  
  
import * as React from 'react';  
import Constants from 'expo-constants';  
import { Button, Text, View, StyleSheet, Constants, StatusBar } from 'react-native';  
import { NavigationContainer } from '@react-navigation/native';  
import { createNativeStackNavigator } from '@react-navigation/native-stack';  
  
const Stack = createNativeStackNavigator();
```

# 更換 Header 顏色

# 在 Header 加上 Button

```
46: export default function App() {  
47:   return (  
48:     <NavigationContainer>  
49:       <Stack.Navigator>  
50:         <Stack.Screen  
51:           name="Home"  
52:           component={HomeScreen}  
53:           options={{  
54:             title: 'Welcome',  
55:             headerStyle: { backgroundColor: 'tomato' },  
56:             headerRight: () => (  
57:               <Button  
58:                 onPress={() => alert('This is a button!')}  
59:                 title="Info"  
60:                 color="red"  
61:               />  
62:             ),  
63:           }  
64:         />  
65:         <Stack.Screen name="Profile" component={ProfileScreen}/>  
66:         <Stack.Screen name="Portfolio" component={PortfolioScreen} />  
67:       </Stack.Navigator>  
68:     </NavigationContainer>  
69:   );  
70: }
```

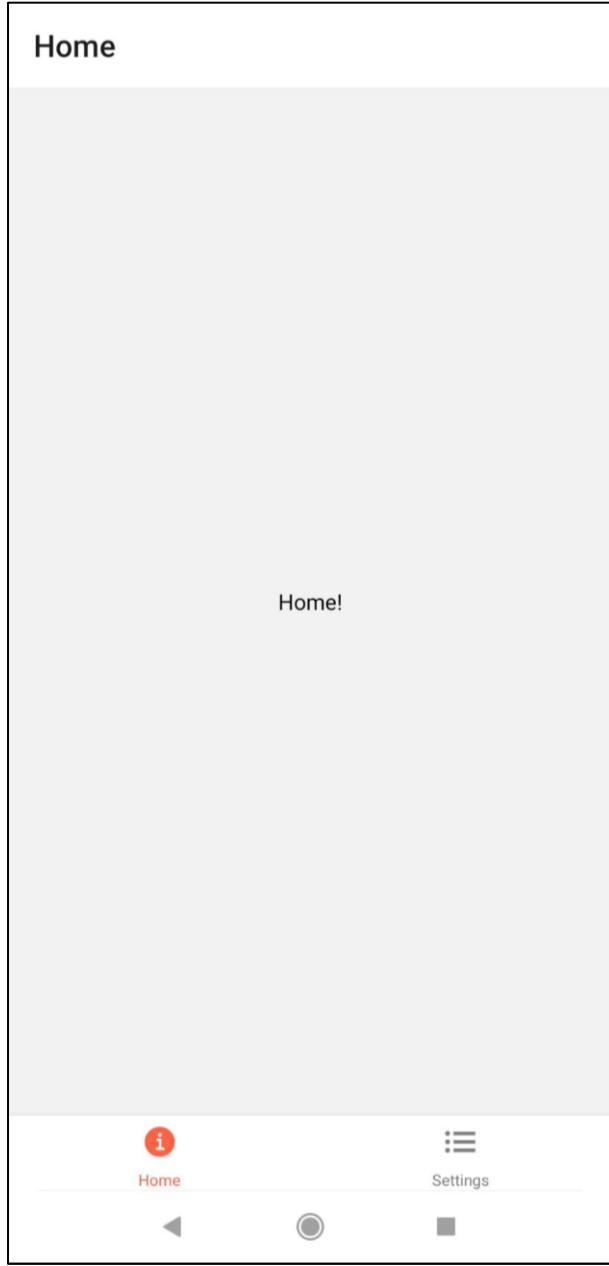


# 練習一下



1. 新增第四個頁面
2. 頁面之間都有按鈕可以切換
3. 更換 header 顏色

# Tab





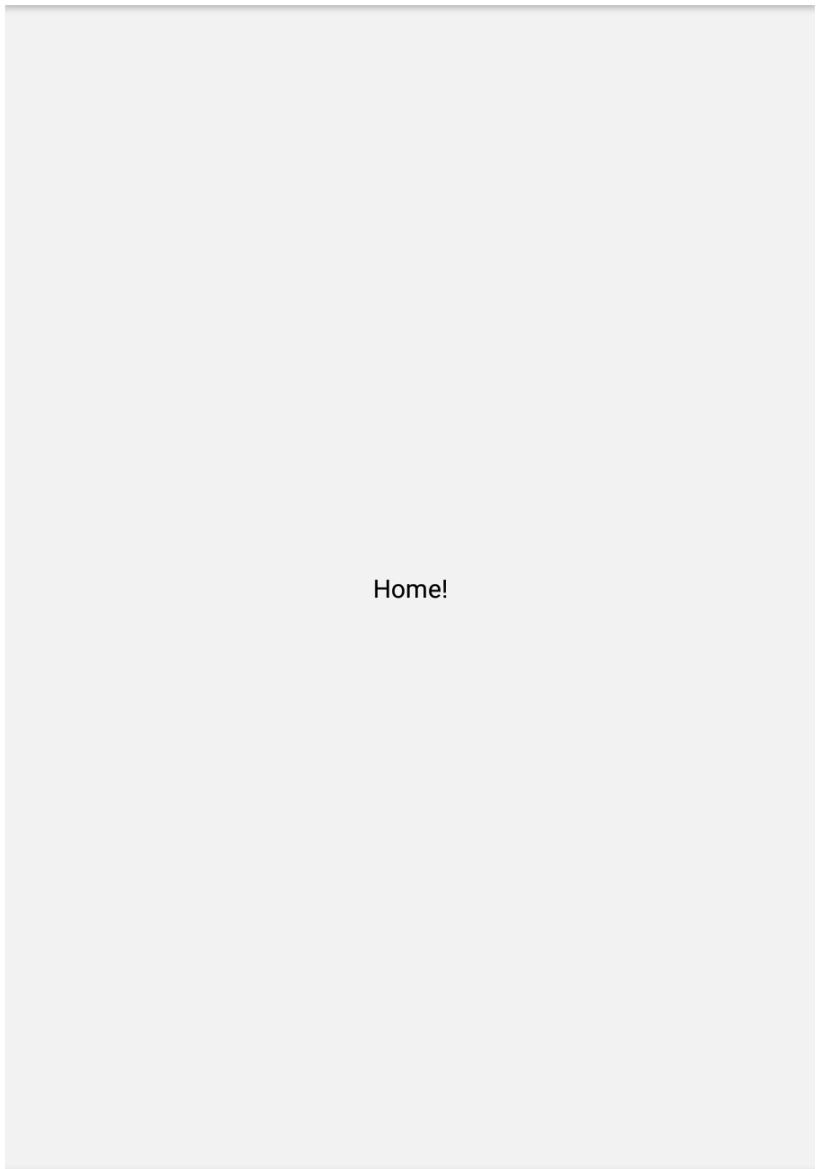
## App-tab.js

```
01: import * as React from 'react';
02: import { Text, View } from 'react-native';
03: import { NavigationContainer } from '@react-navigation/native';
04: import { createBottomTabNavigator } from '@react-navigation/bottom-tabs';
05:
06: function HomeScreen() {
07:   return (
08:     <View style={{ flex: 1, justifyContent: 'center', alignItems: 'center' }}>
09:       <Text>Home!</Text>
10:     </View>
11:   );
12: }
13:
14: function SettingsScreen() {
15:   return (
16:     <View style={{ flex: 1, justifyContent: 'center', alignItems: 'center' }}>
17:       <Text>Settings!</Text>
18:     </View>
19:   );
20: }
21:
22: const Tab = createBottomTabNavigator();
23:
24: export default function App() {
25:   return (
26:     <NavigationContainer>
27:       <Tab.Navigator>
28:         <Tab.Screen name="Home" component={HomeScreen} />
29:         <Tab.Screen name="Settings" component={SettingsScreen} />
30:       </Tab.Navigator>
31:     </NavigationContainer>
32:   );
}
```



1:20

## Home



Home

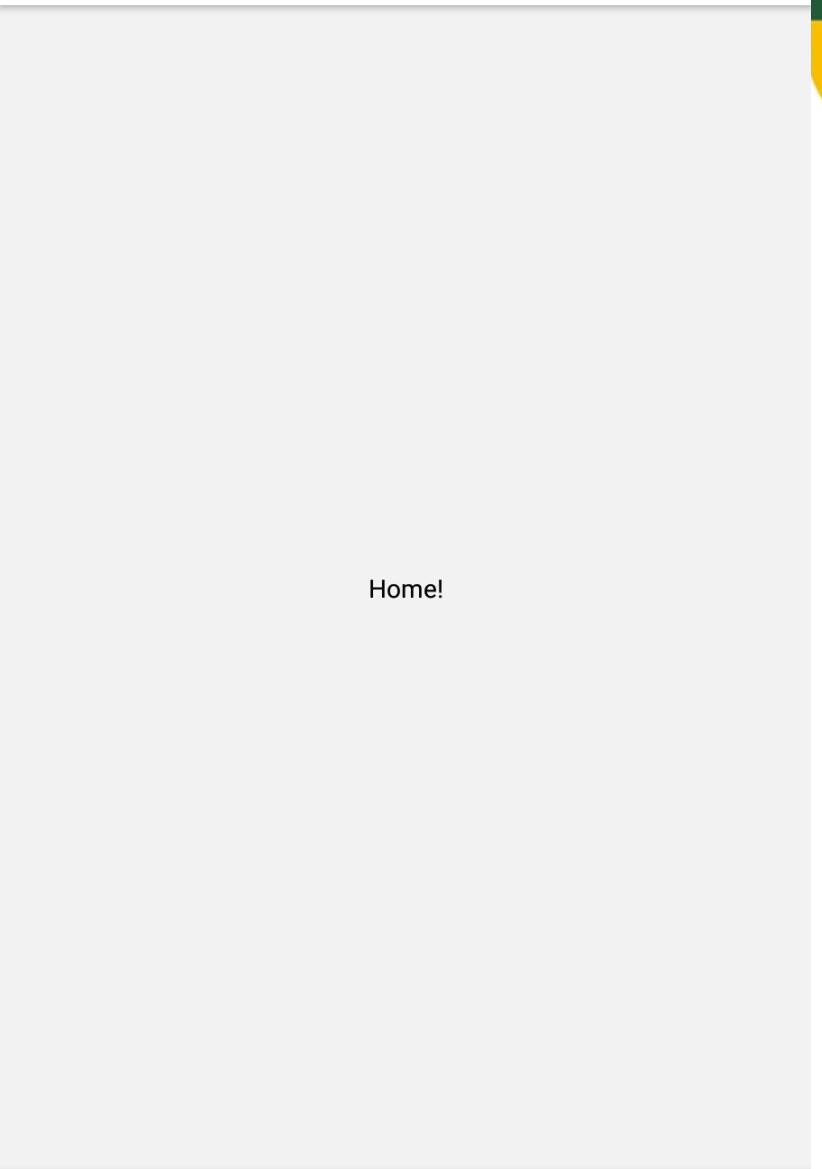


Settings



1:23

## Home



Home



Settings



App-tab.js

```
25  export default function App() {
26    return (
27      <NavigationContainer>
28        <Tab.Navigator
29          >
30            <Tab.Screen
31              name="Home"
32              component={HomeScreen}
33              options={{
34                tabBarIcon: ({ color, size }) => (
35                  <MaterialCommunityIcons name="home" color={color} size={size} />
36                )}}/>
37            <Tab.Screen
38              name="Settings"
39              component={SettingsScreen}
40              options={{
41                tabBarIcon: ({ color, size }) => (
42                  <MaterialCommunityIcons name="information" color={color} size={size} />
43                )}}/>
44          </Tab.Navigator>
45        </NavigationContainer>
46    );
47 }
```

# react-native-vector-icons



- <https://github.com/oblador/react-native-vector-icons>
- 圖庫
  - <https://pictogrammers.com/library mdi/>
- 安裝套件
  - **npm install --save react-native-vector-icons**
  - **npm install react-native-paper**

JS App.js > App

```
1 import React from 'react';
2 import { View } from 'react-native';
3 import { Appbar } from 'react-native-paper';
4 import Icon from 'react-native-vector-icons/Ionicons';
5 import { SafeAreaProvider } from 'react-native-safe-area-context'; // 引入 SafeAreaProvider
6
7 function ToolbarView({ navigation }) {
8   return (
9     <Appbar.Header>
10       <Appbar.BackAction onPress={() => navigation.goBack()} />
11       <Appbar.Content title="Home" />
12       <Appbar.Action
13         icon={({ color, size }) => (
14           <Icon name="settings" color={color} size={size} />
15         )}
16         onPress={() => console.log('Settings pressed')}
17       />
18       <Appbar.Action
19         icon={({ color, size }) => (
20           <Icon name="logo-twitter" color="#4099FF" size={25} />
21         )}
22         onPress={() => console.log('Follow on Twitter')}
23       />
24       <Appbar.Action
25         icon={({ color, size }) => (
26           <Icon name="ellipsis-horizontal" color={color} size={size} />
27         )}
28         onPress={() => console.log('Overflow menu')}
29       />
30     </Appbar.Header>
31   );
32 }
```



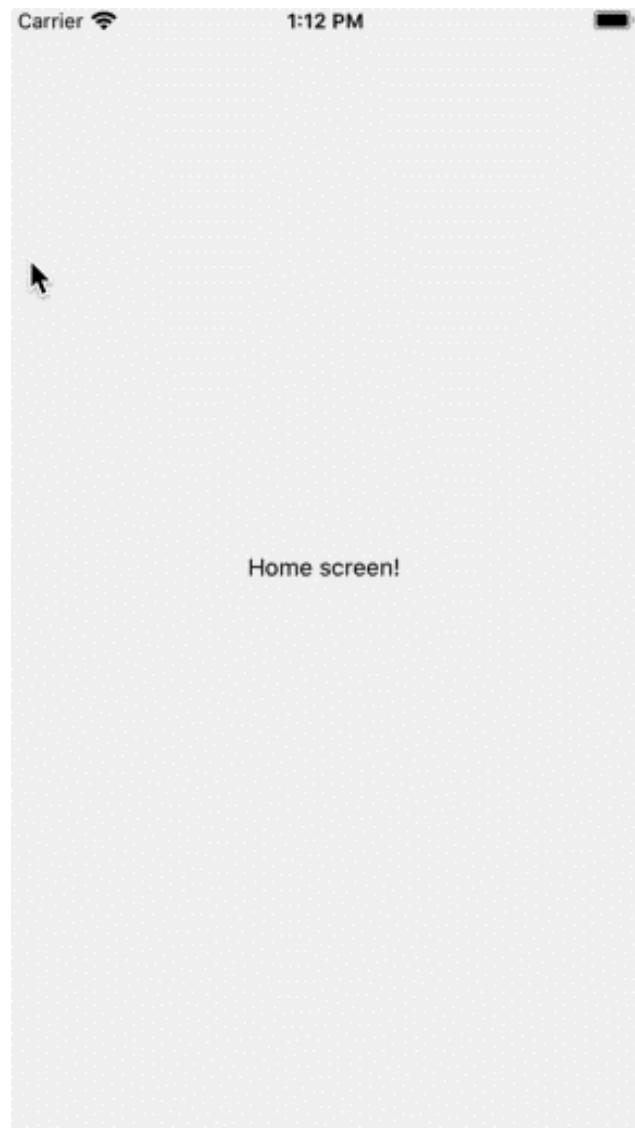
## App-icon.js

```
34 export default function App() {
35   return (
36     <SafeAreaProvider /* 包裹 SafeAreaProvider */>
37       <View style={{ flex: 1 }}>
38         <ToolbarView />
39       </View>
40     </SafeAreaProvider>
41   );
42 }
```





# Drawer



# 設定



1. 安裝套件: npx expo install **react-native-reanimated**
2. npm install @react-navigation/drawer

3. 修改 babel.config.js

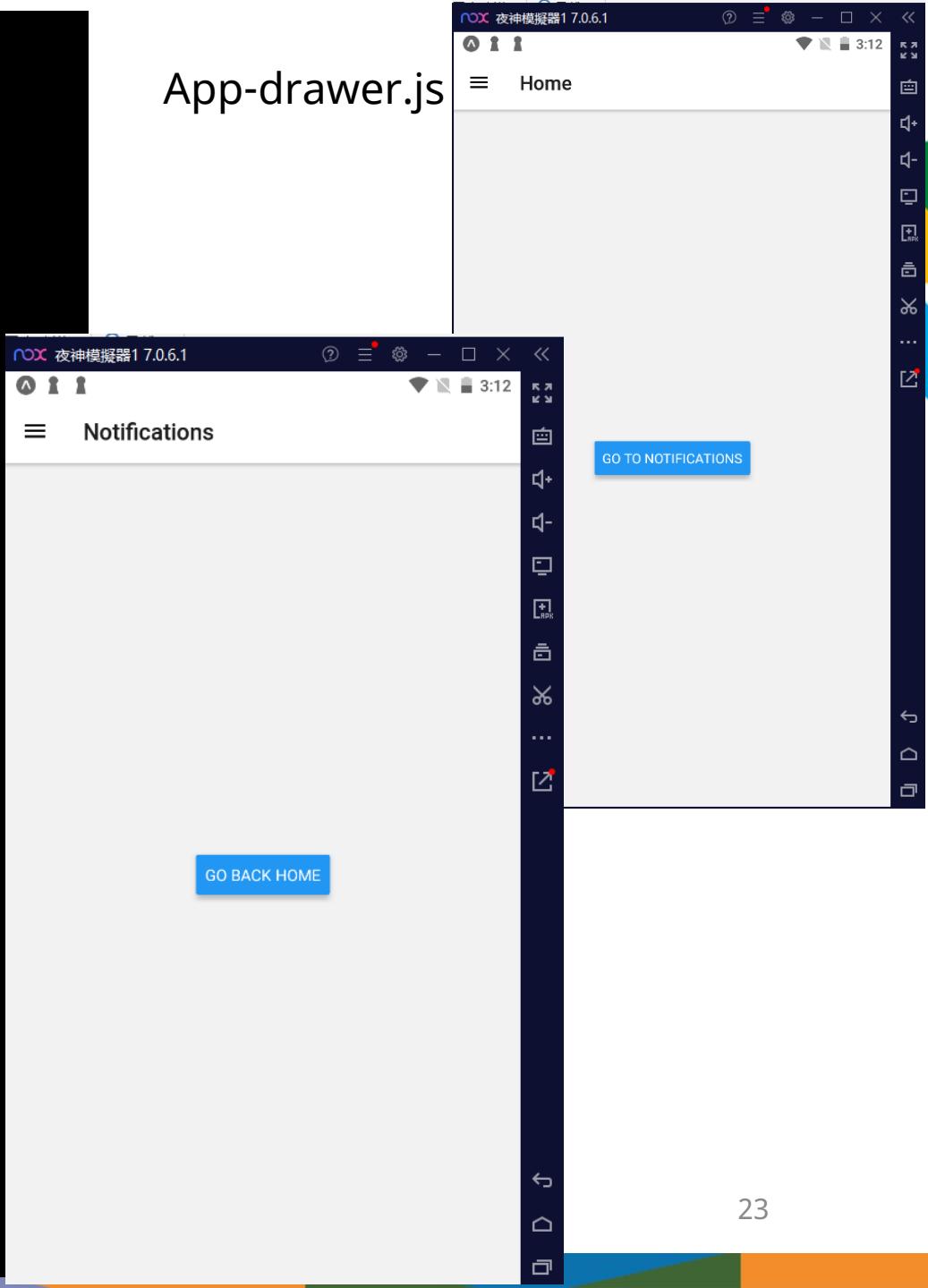
```
File: babel.config.js
1: module.exports = function(api) {
2:   api.cache(true);
3:   return {
4:     presets: ['babel-preset-expo'],
5:     plugins: ['react-native-reanimated/plugin'],
6:   };
7: };
8:
```

加這行

4. 更新環境: npx expo start --clear

```
01: import * as React from 'react';
02: import { Button, View } from 'react-native';
03: import { createDrawerNavigator } from '@react-navigation/drawer';
04: import { NavigationContainer } from '@react-navigation/native';
05:
06: function HomeScreen({ navigation }) {
07:   return (
08:     <View style={{ flex: 1, alignItems: 'center', justifyContent: 'center' }}>
09:       <Button
10:         onPress={() => navigation.navigate('Notifications')}
11:         title="Go to notifications"
12:       />
13:     </View>
14:   );
15: }
16:
17: function NotificationsScreen({ navigation }) {
18:   return (
19:     <View style={{ flex: 1, alignItems: 'center', justifyContent: 'center' }}>
20:       <Button onPress={() => navigation.goBack()} title="Go back home" />
21:     </View>
22:   );
23: }
24:
25: const Drawer = createDrawerNavigator();
26:
27: export default function App() {
28:   return (
29:     <NavigationContainer>
30:       <Drawer.Navigator initialRouteName="Home">
31:         <Drawer.Screen name="Home" component={HomeScreen} />
32:         <Drawer.Screen name="Notifications" component={NotificationsScreen} />
33:       </Drawer.Navigator>
34:     </NavigationContainer>
35:   );
36: }
```

## App-drawer.js



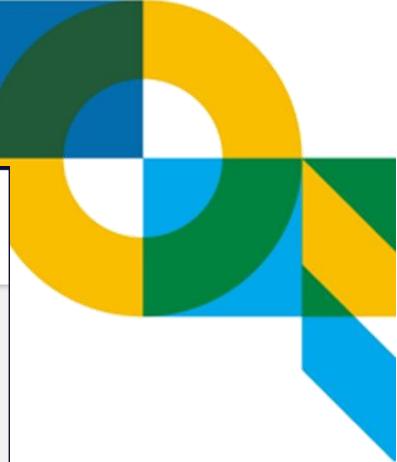
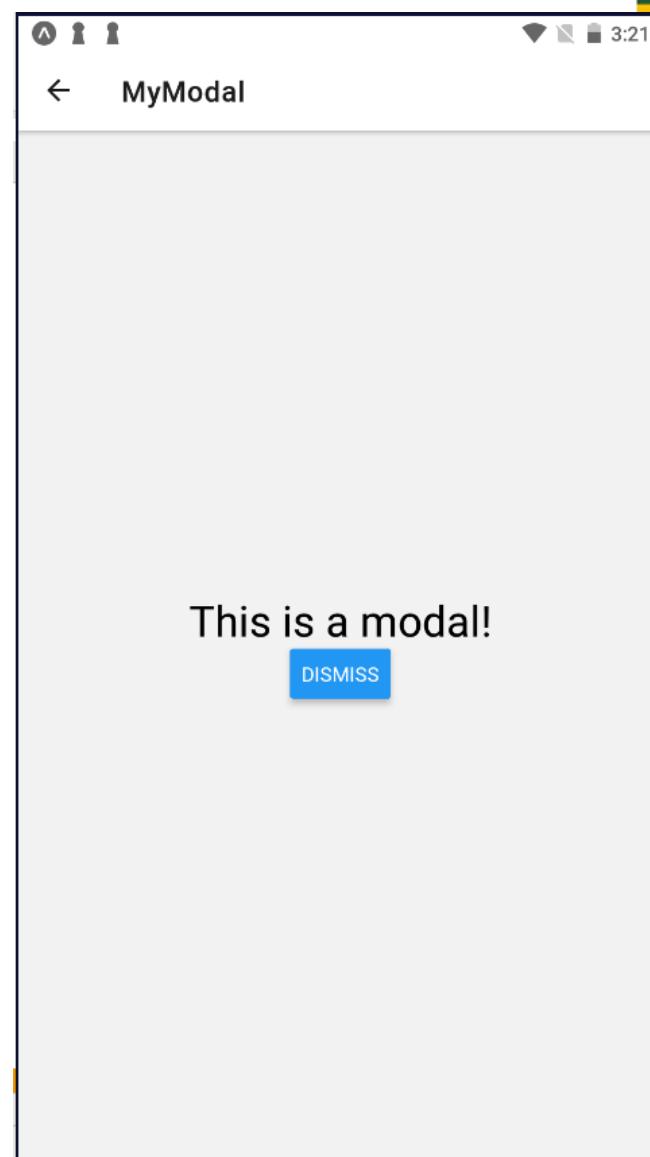
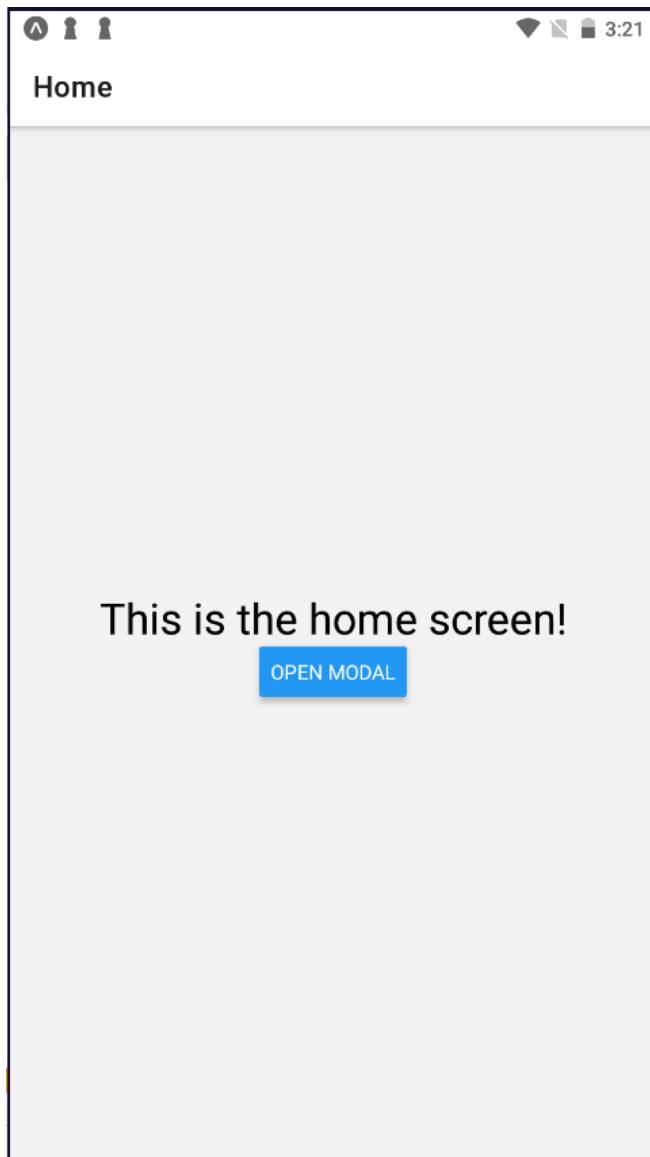
# Drawer

- App-drawer.js

```
JS App.js > NotificationsScreen
  1 import * as React from 'react';
  2 import { Button, View } from 'react-native';
  3 import { createDrawerNavigator } from '@react-navigation/drawer';
  4 import { NavigationContainer } from '@react-navigation/native';
  5
  6 function HomeScreen({ navigation }) {
  7   return (
  8     <View style={{ flex: 1, alignItems: 'center', justifyContent: 'center' }}>
  9       <Button
 10         onPress={() => navigation.navigate('Notifications')}
 11         title="Go to notifications"
 12       />
 13     </View>
 14   );
 15 }
 16
 17 function NotificationsScreen({ navigation }) {
 18   return (
 19     <View style={{ flex: 1, alignItems: 'center', justifyContent: 'center' }}>
 20       <Button onPress={() => navigation.goBack()} title="Go back home" />
 21     </View>
 22   );
 23 }
 24
 25 const Drawer = createDrawerNavigator();
 26
 27 export default function App() {
 28   return (
 29     <NavigationContainer>
 30       <Drawer.Navigator initialRouteName="Home">
 31         <Drawer.Screen name="Home" component={HomeScreen} />
 32         <Drawer.Screen name="Notifications" component={NotificationsScreen} />
 33       </Drawer.Navigator>
 34     </NavigationContainer>
 35   );
 36 }
```

# Modal

用一個 Modal 覆蓋畫面



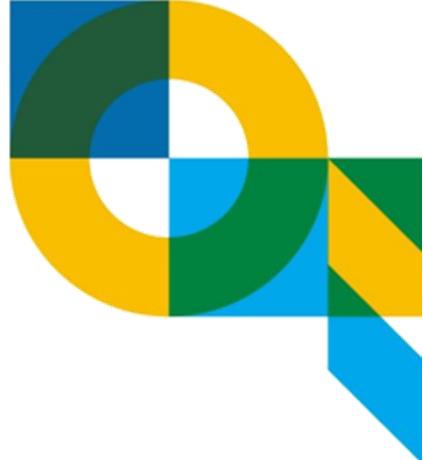
File: App-modal.js

```
01: import * as React from 'react';
02: import { View, Text, Button } from 'react-native';
03: import { NavigationContainer } from '@react-navigation/native';
04: import { createNativeStackNavigator } from '@react-navigation/native-stack';
05:
06: function HomeScreen({ navigation }) {
07:   return (
08:     <View style={{ flex: 1, alignItems: 'center', justifyContent: 'center' }}>
09:       <Text style={{ fontSize: 30 }}>This is the home screen!</Text>
10:       <Button
11:         onPress={() => navigation.navigate('myModal')}
12:         title="Open Modal"
13:       />
14:     </View>
15:   );
16: }
17:
18: function DetailsScreen() {
19:   return (
20:     <View>
21:       <Text>Details</Text>
22:     </View>
23:   );
24: }
```

```
File: App-modal.js
26: function ModalScreen({ navigation }) {
27:   return (
28:     <View style={{ flex: 1, alignItems: 'center', justifyContent: 'center' }}>
29:       <Text style={{ fontSize: 30 }}>This is a modal!</Text>
30:       <Button onPress={() => navigation.goBack()} title="Dismiss" />
31:     </View>
32:   );
33: }
34:
35: // const RootStack = createStackNavigator();
36: const RootStack = createNativeStackNavigator();
37:
38: function App() {
39:   return (
40:     <NavigationContainer>
41:       <RootStack.Navigator>
42:         <RootStack.Group>
43:           <RootStack.Screen name="Home" component={HomeScreen} />
44:           <RootStack.Screen name="Details" component={DetailsScreen} />
45:         </RootStack.Group>
46:         <RootStack.Group screenOptions={{ presentation: 'modal' }}>
47:           <RootStack.Screen name="MyModal" component={ModalScreen} />
48:         </RootStack.Group>
49:       </RootStack.Navigator>
50:     </NavigationContainer>
51:   );
52: }
53:
54: export default App;
```

```
26:  
27: function DetailsScreen() {  
28:   return (  
29:     <View>  
30:       <Text>Details</Text>  
31:     </View>  
32:   );  
33: }  
34:  
35: const RootStack = createStackNavigator();  
36:  
37: function App() {  
38:   return (  
39:     <NavigationContainer>  
40:       <RootStack.Navigator>  
41:         <RootStack.Group>  
42:           <RootStack.Screen name="Home" component={HomeScreen} />  
43:           <RootStack.Screen name="Details" component={DetailsScreen} />  
44:         </RootStack.Group>  
45:         <RootStack.Group screenOptions={{ presentation: 'modal' }}>  
46:           <RootStack.Screen name="MyModal" component={ModalScreen} />  
47:         </RootStack.Group>  
48:       </RootStack.Navigator>  
49:     </NavigationContainer>  
50:   );  
51: }  
52:  
53: export default App;
```

# 練習一下



- 嘗試新增一個頁面到 Tab Navigation 中
- 嘗試新增一個頁面到 Drawer Navigation 中



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# Q&A