React Navigation 簡介(v4)

安裝

在你的 React Native 專案中安裝 react-navigation 這個包

```
yarn add react-navigation
# or with npm
# npm install --save react-navigation
```

AppContainer

管理你的應用程式狀態與連結最上層 navigator 到應用程式環境的容器。 使用 createAppContainer 方法來建立。

```
import { createAppContainer, createStackNavigator } from 'react-navigation';
// you can also import from @react-navigation/native

const AppNavigator = createStackNavigator(...);

const AppContainer = createAppContainer(AppNavigator);

// Now AppContainer is the main component for React to render

export default AppContainer;
```

SwitchNavigator

SwitchNavigator 的目的在於一次只顯示"切換"到的一個視窗(show one screen at a time)，因此並不會處理返回(back)的動作，而且當你進行切換時，會重置路由到預設的狀態。也就是在"切換"時，切到的視窗會進行 mount，而其它的視窗將會進行 unmount。

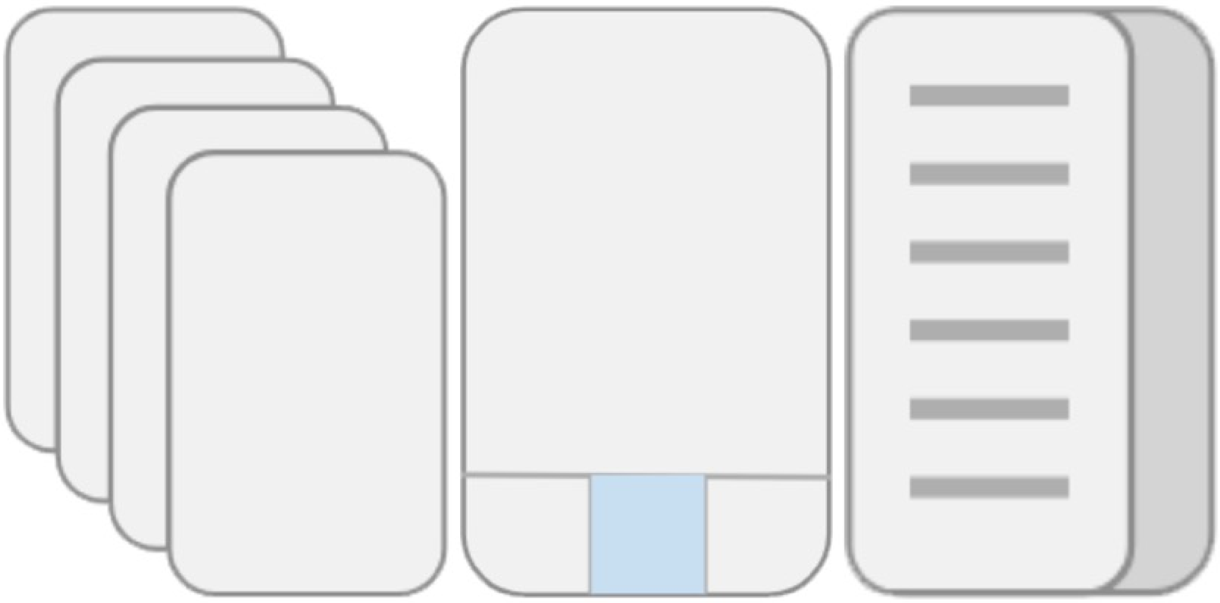
SwitchNavigator 用於認証用的(最上層的 Navigator，次於 AppContainer)的切換，程式碼如下:

```
import {
  createSwitchNavigator,
  createStackNavigator,
  createAppContainer,
} from 'react-navigation'

// Implementation of HomeScreen, OtherScreen, SignInScreen, AuthLoadingScreen
// goes here.

const AppStack = createStackNavigator({ Home: HomeScreen, Other: OtherScreen })
const AuthStack = createStackNavigator({ SignIn: SignInScreen })

export default createAppContainer(
  createSwitchNavigator(
    {
      AuthLoading: AuthLoadingScreen,
      App: AppStack,
      Auth: AuthStack,
    },
    {
      initialRouteName: 'AuthLoading',
    }
  )
)
```

完整的程式碼參考: https://reactnavigation.org/docs/en/auth-flow.html

Navigator 種類

除了上述用於特殊目的的 SwitchNavigator 外，共有三種經常使用的 Navigator


Stack, Tab, and Drawer Navigators

- StackNavigator: 當使用者觸碰一個連結，一個新的視窗會被移到舊的視窗上面。只有這個 Navigator 的動作可以加上切換的動畫。
- TabNavigator: 使用者使用畫面最上方或最下方的資訊標籤(tab)來移動到不同的視窗。
- DrawerNavigator: 用一個會滑出的區域(抽屜，drawer)，其中帶有可以移動到不同視窗的連結。

StackNavigator

StackNavigator 依靠 createStackNavigator 方法建立，一個最簡單的範例如下:

```
import React from 'react'
import { Button, View, Text } from 'react-native'
import { createStackNavigator, createAppContainer } from 'react-navigation'

class HomeScreen extends React.Component {
  render() {
    return (
      <View style={{ flex: 1, alignItems: 'center', justifyContent: 'center' }}>
        <Text>Home Screen</Text>
        <Button
          title="Go to Details"
          onPress={() => this.props.navigation.navigate('Details')}
        />
      </View>
    )
  }
}

class DetailsScreen extends React.Component {
  render() {
    return (
      <View style={{ flex: 1, alignItems: 'center', justifyContent: 'center' }}>
        <Text>Details Screen</Text>
      </View>
    )
  }
}

const RootStack = createStackNavigator(
  {
    Home: HomeScreen,
    Details: DetailsScreen,
  },
  {
    initialRouteName: 'Home',
  }
)

const AppContainer = createAppContainer(RootStack)

export default class App extends React.Component {
  render() {
    return <AppContainer />
  }
}
```

StackNavigator 可以產生標頭(Header)，標頭的定義是在每個視窗(screen)的元件定義中，例如以下的例子:

```
  class HomeScreen extends React.Component {
    static navigationOptions = ({ navigation }) => {
      return {
        headerTitle: <LogoTitle />,
        headerRight: (
          <Button
            onPress={navigation.getParam('increaseCount')}
            title="+1"
            color="#fff"
          />
        ),
      }
    }

    componentDidMount() {
      this.props.navigation.setParams({ increaseCount: this._increaseCount })
    }

    state = {
      count: 0,
    }

    _increaseCount = () => {
      this.setState({ count: this.state.count + 1 })
    }

    /* later in the render function we display the count */
  }
```

上面的 `navigationOptions` ，可以在 createStackNavigator 方法中進行覆蓋，例如:

```
  createStackNavigator({
    A: {
      screen: AScreen,
      navigationOptions: () => ({
        title: `A`,
        headerBackTitle: null,
      }),
    },
    B: {
      screen: BScreen,
      navigationOptions: () => ({
        title: `B`,
      }),
    },
  })
```

返回(back)按鈕(或連結)，createStackNavigator 會自動產生，唯一能自行定義的是返回(back)按鈕(或連結)的字詞，使用的是 headerBackTitle 與 headerTruncatedBackTitle 兩個屬性值。如下的範例:

```
  createStackNavigator({
    A: {
      screen: AScreen,
      navigationOptions: () => ({
        title: `A`,
        headerBackTitle: 'A much too long text for back button from B to A',
        headerTruncatedBackTitle: `to A`,
      }),
    },
    B: {
      screen: BScreen,
      navigationOptions: () => ({
        title: `B`,
      }),
    },
  })
```

> 註: iOS 與 Android 的返回樣式會不太一樣這是正常的，React Navigation 使用的是各平台原本的返回功能。

defaultNavigationOptions 可以讓所有的視窗共享同樣的設定，通常用於定義統一的樣式風格使用。範例如下:

```
const RootStack = createStackNavigator(
  {
    Home: HomeScreen,
    Details: DetailsScreen,
  },
  {
    initialRouteName: 'Home',
    /* The header config from HomeScreen is now here */
    defaultNavigationOptions: {
      headerStyle: {
        backgroundColor: '#f4511e',
      },
      headerTintColor: '#fff',
      headerTitleStyle: {
        fontWeight: 'bold',
      },
    },
  }
)
```

navigationOptions 的覆蓋方式

以下依次序覆蓋，最上面的是預設的設定值，下面覆蓋上面的。

- defaultNavigationOptions
- 每個視窗中定義的 navigationOptions
- 在 createStackNavigator 方法中針對每個視窗定義的 navigationOptions

在不同的視窗傳遞參數

傳遞參數主要要使用以下兩個部份:

- 傳送方 - this.props.navigation.navigate('要傳遞過去的視窗名稱', {參數物件值})
- 接受方 - this.props.navigation.getParam('參數名稱', '預設值')

範例如下:

```
class HomeScreen extends React.Component {
  render() {
    return (
      <View style={{ flex: 1, alignItems: 'center', justifyContent: 'center' }}>
        <Text>Home Screen</Text>
        <Button
          title="Go to Details"
          onPress={() => {
            /* 1. Navigate to the Details route with params */
            this.props.navigation.navigate('Details', {
              itemId: 86,
              otherParam: 'anything you want here',
            })
          }}
        />
      </View>
    )
  }
}

class DetailsScreen extends React.Component {
  render() {
    /* 2. Get the param, provide a fallback value if not available */
    const { navigation } = this.props
    const itemId = navigation.getParam('itemId', 'NO-ID')
    const otherParam = navigation.getParam('otherParam', 'some default value')

    return (
      <View style={{ flex: 1, alignItems: 'center', justifyContent: 'center' }}>
        <Text>Details Screen</Text>
        <Text>itemId: {JSON.stringify(itemId)}</Text>
        <Text>otherParam: {JSON.stringify(otherParam)}</Text>
        <Button
          title="Go to Details... again"
          onPress={() =>
            this.props.navigation.push('Details', {
              itemId: Math.floor(Math.random() * 100),
            })
          }
        />
        <Button
          title="Go to Home"
          onPress={() => this.props.navigation.navigate('Home')}
        />
        <Button
          title="Go back"
          onPress={() => this.props.navigation.goBack()}
        />
      </View>
    )
  }
}
```

> 註: navigation.navigate 方法有很多細部的用法，可以參考API 頁面中的更多說明

TabNavigator

react-navigation 提供了 createBottomTabNavigator 與 createMaterialTopTabNavigator 可以建立 TabNavigator。

另外 createMaterialBottomTabNavigator 需要額外安裝以下的模組套件:

```
npm install react-navigation-material-bottom-tabs react-native-paper
```

一個最簡單的範例如下:

```
import React from 'react'
import { Text, View } from 'react-native'
import { createBottomTabNavigator, createAppContainer } from 'react-navigation'

class HomeScreen extends React.Component {
  render() {
    return (
      <View style={{ flex: 1, justifyContent: 'center', alignItems: 'center' }}>
        <Text>Home!</Text>
      </View>
    )
  }
}

class SettingsScreen extends React.Component {
  render() {
    return (
      <View style={{ flex: 1, justifyContent: 'center', alignItems: 'center' }}>
        <Text>Settings!</Text>
      </View>
    )
  }
}

const TabNavigator = createBottomTabNavigator({
  Home: HomeScreen,
  Settings: SettingsScreen,
})

export default createAppContainer(TabNavigator)
```

每個 Tab 的圖示(Icon)、標記文字(label)、顏色，設置的方式與 StackNavigator 類似(也是可以覆蓋，不過通常會設定在一處)，顏色等樣式則會統一設定一處而已。如下面的範例:

```
const TabNavigator = createMaterialBottomTabNavigator(
  {
    Home: {
      screen: HomeStack,
      navigationOptions: {
        tabBarLabel: '首頁',
        tabBarIcon: ({ tintColor, focused }) => (
          <Icon size={24} name="md-home" style={{ color: tintColor }} />
        ),
        gesturesEnabled: false,
      },
    },
    Map: {
      screen: Map,
      navigationOptions: {
        tabBarLabel: '地圖',
        tabBarIcon: ({ tintColor, focused }) => (
          <Icon size={24} name="md-pin" style={{ color: tintColor }} />
        ),
        gesturesEnabled: false,
      },
    },
  },
  {
    shifting: true, //控制圖示文字特效(點到時要不要出現文字)
    initialRouteName: 'Home',
    activeColor: customColor.activeColor,
    inactiveColor: customColor.inactiveColor,
    barStyle: { backgroundColor: customColor.backgroundColor },
  }
)
```

在不同的 Tab 視窗中切換，則是使用 `this.props.navigation.navigate` 方法，如下範例:

```
import { Button, Text, View } from 'react-native'

class HomeScreen extends React.Component {
  render() {
    return (
      <View style={{ flex: 1, justifyContent: 'center', alignItems: 'center' }}>
        <Text>Home!</Text>
        <Button
          title="Go to Settings"
          onPress={() => this.props.navigation.navigate('Settings')}
        />
      </View>
    )
  }
}

class SettingsScreen extends React.Component {
  render() {
    return (
      <View style={{ flex: 1, justifyContent: 'center', alignItems: 'center' }}>
        <Text>Settings!</Text>
        <Button
```

```
          title="Go to Home"
          onPress={() => this.props.navigation.navigate('Home')}
        />
      </View>
    )
  }
}
```

在一個 Tab 中還有許多 Stack 視窗

原理就是先用 createStackNavigator 組合好，然後再放到 createBottomTabNavigator(或其它 Tab 建立方法)建立而已，範例如下:

```
import {
  createBottomTabNavigator,
  createStackNavigator,
  createAppContainer,
} from 'react-navigation'

class DetailsScreen extends React.Component {
  render() {
    return (
      <View style={{ flex: 1, justifyContent: 'center', alignItems: 'center' }}>
        <Text>Details!</Text>
      </View>
    )
  }
}

class HomeScreen extends React.Component {
  render() {
    return (
      <View style={{ flex: 1, justifyContent: 'center', alignItems: 'center' }}>
        {/* other code from before here */}
        <Button
          title="Go to Details"
          onPress={() => this.props.navigation.navigate('Details')}
        />
      </View>
    )
  }
}

class SettingsScreen extends React.Component {
  render() {
    return (
      <View style={{ flex: 1, justifyContent: 'center', alignItems: 'center' }}>
        {/* other code from before here */}
        <Button
          title="Go to Details"
          onPress={() => this.props.navigation.navigate('Details')}
        />
      </View>
    )
  }
}

const HomeStack = createStackNavigator({
  Home: HomeScreen,
  Details: DetailsScreen,
})

const SettingsStack = createStackNavigator({
  Settings: SettingsScreen,
  Details: DetailsScreen,
})

export default createAppContainer(
  createBottomTabNavigator(
    {
      Home: HomeStack,
      Settings: SettingsStack,
    },
    {
      /* Other configuration remains unchanged */
    }
  )
)
```

如果需要在某個 Tab 視窗中的子 Stack 視窗隱藏 Tabbar 的話，可以用以下的程式碼範例:

```
const FeedStack = createStackNavigator({
  FeedHome: FeedScreen,
  Details: DetailsScreen,
})

const TabNavigator = createBottomTabNavigator({
  Feed: FeedStack,
  Profile: ProfileScreen,
})

const AppNavigator = createSwitchNavigator({
  Auth: AuthScreen,
  Home: TabNavigator,
})

FeedStack.navigationOptions = ({ navigation }) => {
  let tabBarVisible = true
  if (navigation.state.index > 0) {
    tabBarVisible = false
  }

  return {
    tabBarVisible,
  }
}
```

另一種作法是把 Tab 視窗組合到某個上層的 Stack 視窗中:

```
const FeedStack = createStackNavigator({
  FeedHome: FeedScreen,
  /* any other route you want to render under the tab bar */
});

const TabNavigator = createBottomTabNavigator({
  Feed: FeedStack,
  Profile: ProfileScreen,
});

const HomeStack = createStackNavigator({
  Tabs: TabNavigator,
  Details: DetailsScreen,
  /* any other route you want to render above the tab bar */
});

const AppNavigator = createSwitchNavigator({
  Auth: AuthScreen,
  Home: HomeStack,
});)
```

DrawerNavigator

使用 createDrawerNavigator 來建立 DrawerNavigator，範例如下:

```
class MyHomeScreen extends React.Component {
  static navigationOptions = {
    drawerLabel: 'Home',
    drawerIcon: ({ tintColor }) => (
      <Image
        source={require('./chats-icon.png')}
        style={[styles.icon, { tintColor: tintColor }]}
      />
    ),
  }

  render() {
    return (
      <Button
        onPress={() => this.props.navigation.navigate('Notifications')}
        title="Go to notifications"
      />
    )
  }
}

class MyNotificationsScreen extends React.Component {
  static navigationOptions = {
    drawerLabel: 'Notifications',
    drawerIcon: ({ tintColor }) => (
      <Image
        source={require('./notif-icon.png')}
        style={[styles.icon, { tintColor: tintColor }]}
      />
    ),
  }

  render() {
    return (
      <Button
        onPress={() => this.props.navigation.goBack()}
        title="Go back home"
      />
    )
  }
}

const styles = StyleSheet.create({
  icon: {
    width: 24,
    height: 24,
  },
})

const MyDrawerNavigator = createDrawerNavigator({
  Home: {
    screen: MyHomeScreen,
  },
  Notifications: {
    screen: MyNotificationsScreen,
  },
})

const MyApp = createAppContainer(MyDrawerNavigator)
```

開啟或關閉 drawer 的語法:

```
this.props.navigation.openDrawer()
this.props.navigation.closeDrawer()
```

切換(開變關、關變開)drawer 的語法:

```
this.props.navigation.toggleDrawer()
```

取得目前的 drawer 是開或關的狀態:

```
const parent = this.props.navigation.dangerouslyGetParent()
const isDrawerOpen = parent && parent.state && parent.state.isDrawerOpen
```

Drawer 的樣式、動畫均可以自訂，請參考這裡的API 頁面說明。