CH11 練習題

練習 11-1

建立一個畫面如右的 Android App，並須符合下列要求：

1. 建立一個 TextView，並顯示 x、y 軸受重力的情形。
2. TextView 元件會隨著重力方向移動，而且傾斜角度愈大，移動的速度愈快。例如：將手機直立起來，TextView 元件會快速向下移動。
3. TextView 元件移動到畫面邊界便無法繼續移動，以避免移出畫面。例如：將手機直立起來，TextView 元件會快速向下移動，當 TextView 元件碰到畫面下邊界就無法繼續向下移動。

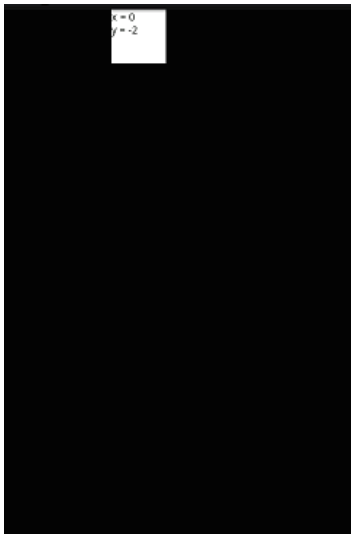

圖 11-1

- 提示：會使用下列功能－
  - 加速度感應器（Sensor.TYPE_ACCELEROMETER）。
  - View 的 getLeft()、getRight()、getTop()、getBottom()與 offsetLeftAndRight()、offsetTopAndBottom()等方法。
  - 避免螢幕旋轉，manifest 檔案的 Activity 加上 android:screenOrientation="portrait"

練習 11-2

建立一個畫面如下的 Android App，並須符合下列要求：

1. 載入一篇文章，如圖 11-2-1。
2. 當手機接近物體時，視窗會變暗，如圖 11-2-2；遠離物體時視窗亮度恢復正常。

- 提示：會使用下列功能－
  - 接近感應器（Sensor.TYPE_PROXIMITY）。
  - WindowManager.LayoutParams 的 screenBrightness、BRIGHTNESS_OVERRIDE_OFF、BRIGHTNESS_OVERRIDE_NONE。
  - Window.getAttributes()、setAttributes()。

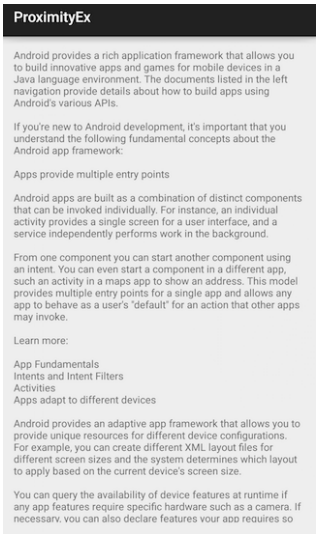
ProximityEx
Android provides a rich application framework that allows you to build innovative apps and games for mobile devices in a Java language environment. The documents listed in the left navigation provide details about how to build apps using Android's various APIs.
If you're new to Android development, it's important that you understand the following fundamental concepts about the Android app framework:
Apps provide multiple entry points
Android apps are built as a combination of distinct components that can be invoked individually. For instance, an individual activity provides a single screen for a user interface, and a service independently performs work in the background.
From one component you can start another component using an intent. You can even start a component in a different app, such an activity in a maps app to show an address. This model provides multiple entry points for a single app and allows any app to behave as a user's "default" for an action that other apps may invoke.
Learn more:
App Fundamentals
Intents and Intent Filters
Activities
Apps adapt to different devices
Android provides an adaptive app framework that allows you to provide unique resources for different device configurations. For example, you can create different XML layout files for different screen sizes and the system determines which layout to apply based on the current device's screen size.
You can query the availability of device features at runtime if any app features require specific hardware such as a camera. If

圖 11-2-1

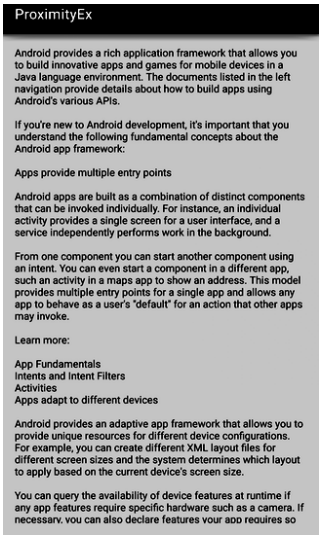
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圖 11-2-2