

App Inventor for Android



Getting started

CAVE Education

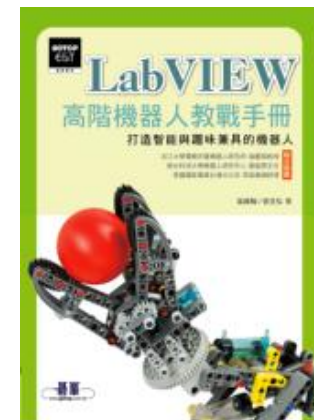


謝宗翰 hsnu1152@cavedu.com

CAVE 教育團隊講師

中華少年文教基金會講師

翰尼斯企業助理工程師





機器人王國

www.robotkingdom.com.tw



CAVE 教育團隊

www.cavedu.com

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時間	Day 1
主題	App Inventor基礎
8:10~9:00	報到
9:00~10:15	始業式 前言 什麼是Google App Inventor 安裝開發環境
10:30~12:00	畫面配置 第一個程式：HelloPurr Designer頁面 Block editor 媒體檔案配置
中餐午休	
13:00~14:20	PicCall 撥號功能 通訊錄 PaintPot 觸控繪畫 設定顏色 清除螢幕
14:30~16:00	MoleMash 打地鼠遊戲設計 隨機出現地鼠 計分榜 MapTour 預設名勝景點 Google map



Android 手機程式超簡單 !!

▶ App Inventor ◀

入門卷



CAVE 教育團隊

曾吉弘、蔡宜坦、黃凱群、賴偉民、盧玟攸、施力維 著

Make:
makezine.com.tw



Android 手機程式超簡單 !!

▶ App Inventor ◀

機器人卷



CAVE 教育團隊

曾吉弘、賴偉民、謝宗翰、林毓祥、薛皓云 著



App Inventor中文教學網



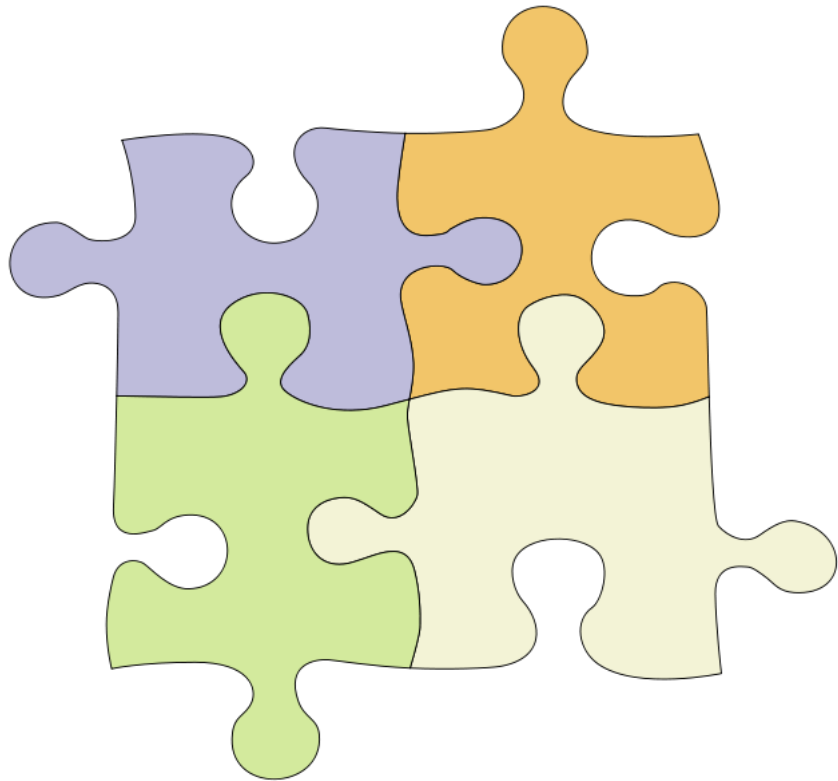
App Inventor TW
中文學習網

www.appinventor.tw



<http://www.appinventor.tw/>





```
when ContactPicker.AfterPicking
do
  set ContactName.Text to ContactPicker.ContactName
  set ContactEmail.Text to ContactPicker.EmailAddress
  set Image1.Picture to ContactPicker.Picture
```



```

#include <sstream>
#include <windows.h>
#include <map>

#include "EmoStateDLL.h"
#include "edk.h"
#include "edkErrorCode.h"
#include "NXT++.h"

#pragma comment(lib, "../lib/edk.lib")
#pragma comment(lib, "../lib/NXT++d.lib")

EE_DataChannel_t targetChannellist[] =
{
    ED_COUNTER,
    ED_AF3, ED_F7, ED_F3, ED_FC5, ED_T7,
    ED_P7, ED_O1, ED_O2, ED_P8, ED_T8,
    ED_FC6, ED_F4, ED_F8, ED_AF4, ED_GYROX, ED_GYROY, ED_TIMESTAMP,
    ED_FUNC_ID, ED_FUNC_VALUE, ED_MARKER, ED_SYNC_SIGNAL
};

const char header[] = "COUNTER,AF3,F7,F3, FC5, T7, P7, O1, O2,P8"
                    ", T8, FC6, F4,F8, AF4,GYROX, GYROY, TIMESTAMP, "
                    "FUNC_ID, FUNC_VALUE, MARKER, SYNC_SIGNAL, TOUCH_SENSOR";

int main(int argc, char** argv)
{
    EmoEngineEventHandle eEvent          = EE_EmoEngineEventCreate();
    EmoStateHandle eState                 = EE_EmoStateCreate();
    unsigned int userID                    = 0;
    const unsigned short composerPort     = 1726;
    float secs                             = 1;
    unsigned int datarate                  = 0;
    bool readytocollect                   = false;
    int option                             = 0;
    int state                              = 0;
    int T_Sensor                          = 0;

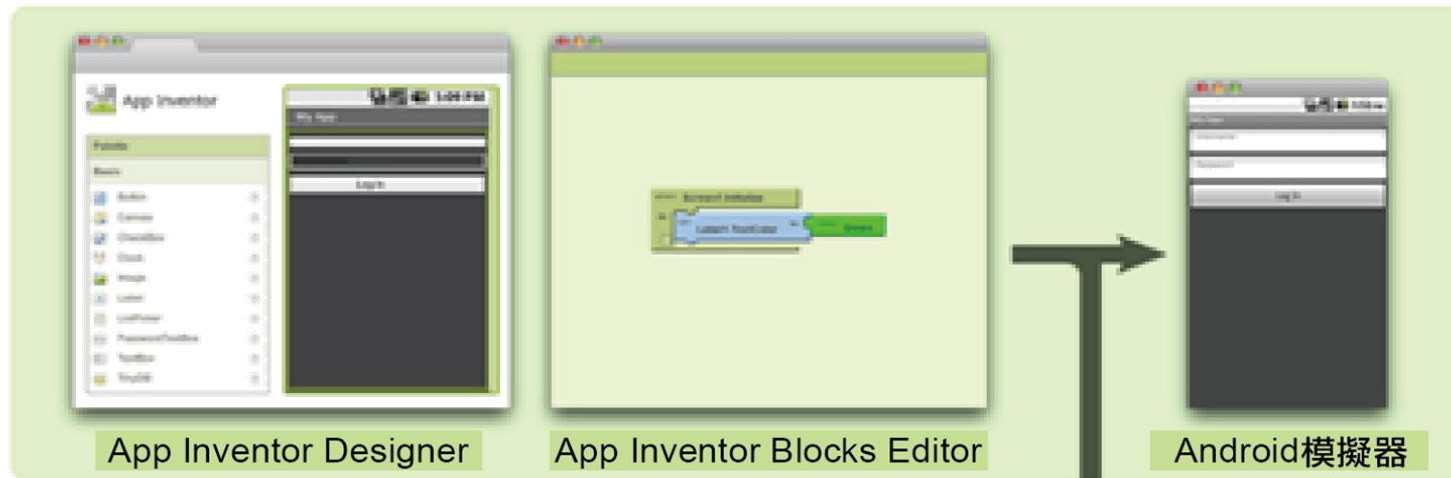
    //Making BT connection with NXT
    std::cout<< "Making bluetooth connection with NXT.....";
    Comm::NXTComm comm;

```





Google App Inventor伺服器



App Inventor Designer

App Inventor Blocks Editor

Android 模擬器



Android裝置



您需要：

1. Gmail帳號→登入[MIT App Inventor](#)網站
2. [Java執行環境\(JRE\)](#)
3. 下載[AppInventor_Setup_Installer_v_1_2.exe](#)
4. 設定手機



環境需求

系統要求

電腦和作業系統

Macintosh (英特爾處理器) : Mac OS X的10.5 , 10.6

Windows:Windows XP和Windows Vista , Windows 7

GNU / Linux的 : Ubuntu的8 + , Debian 5+

瀏覽器

Mozilla **Firefox** 3.6 or higher或更高

Google瀏覽器4.0或更高

Apple Safari 5.0或更高

Microsoft Internet Explorer 7或更高





[Java in Action](#) [Downloads](#) [Help Center](#)

HELP RESOURCES

- [Installing Java](#)
- [Remove Older Versions](#)
- [Using Java](#)
- [FAQ: General Questions](#)
- [FAQ: Mobile Java](#)
- [Support Options](#)

How do I test whether Java is working on my computer?



Java 正在執行中
✓ 已安裝最新的 Java

您的 Java 配置如下所示：

供應商：[Sun Microsystems Inc.](#)

版本：Java SE 6 Update 24

作業系統：Windows 7 6.1

架構：x86

If you cannot see your machine info listed above, please check these additional configurations:

1. [Enable Java through your Web browser](#)
2. [Enable Java through the "Java Plug-in Control Panel"](#)
3. [Clearing your Web Browser Cache](#)
4. [Firefox 3.6 and above requires Java 6 Update 10 or above](#)
5. [Java and Google Chrome Browser](#)
6. [Supported System Configurations](#)

<http://www.java.com/en/download/testjava.jsp>



App Inventor指令中譯下載



App Inventor TW
中文學習網

www.appinventor.tw



搜尋這個協作平台

 +1 { 36

App Inventor中文學習網

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[條碼掃描](#)
[Activity Starter](#)

App Inventor中文學習網

歡迎光臨App Inventor中文學習網。App Inventor 原是Google實驗室 (Google Lab) 的一個子計畫，由一群Google工程師與勇於挑戰的Google使用者共同參與(更多介紹)。App Inventor於 2012年1月1日移交給**麻省理工學院行動學習中心**，並已於3月4日以MIT App Inventor名稱公佈使用。

本站為CAVE教育團隊與翰尼斯企業有限公司合作架設的App Inventor教學網站，目的在於提供有興趣進行手機程式開發的學習者們一個優質的學習環境，所有內容歡迎註明出處後轉載。任何問題請聯絡：service@appinventor.tw

[MIT App Inventor 官方網站](#)

[四月份挑戰題](#)

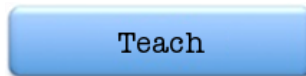




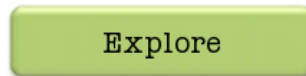




MIT App Inventor 首頁



Educator Resources



Information & Tutorials



Create Mobile Apps

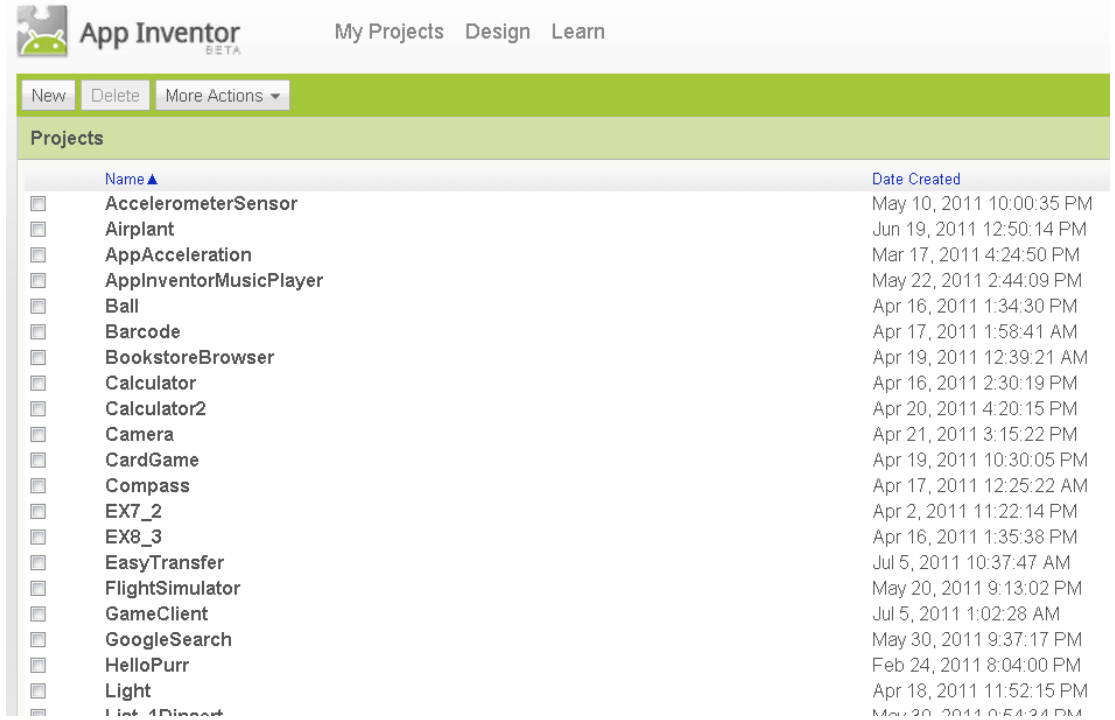
© 2012 [Massachusetts Institute of Technology](#)

[Contact Us](#)



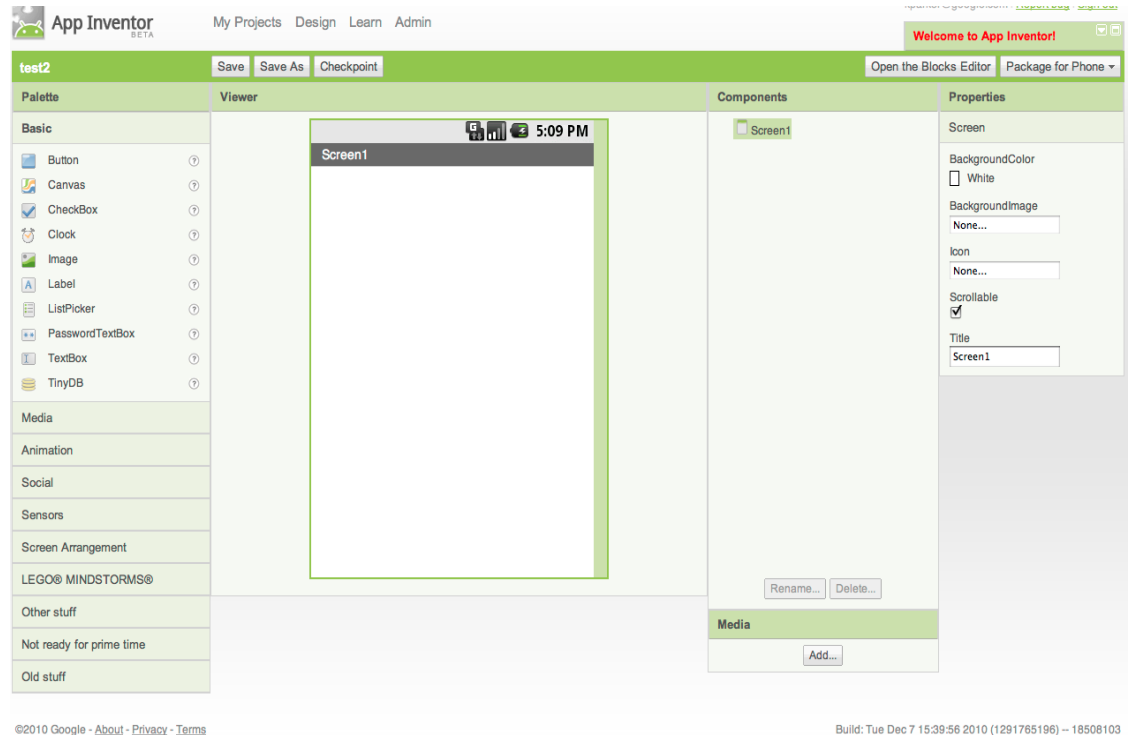
My Projects 頁面

- 下載原始碼 (.zip)
- 上傳原始碼
- 無法多人共用



Designer 頁面

- 決定程式畫面
 - 新增元件
 - 決定元件屬性
- 下載安裝檔(.apk)
- 上傳多媒體檔案



Block Editor 頁面

- 圖形化程式設計
- 啟動模擬器
- 將程式與實體機器或模擬器連接，可同步修改。



HelloPurr



- 媒體檔案配置
- Button



Designer



MEOW Save Save As Checkpoint

Palette Viewer

Basic

- Button
- Canvas
- CheckBox
- Clock
- Image
- Label
- ListPicker
- PasswordTextBox
- TextBox
- TinyDB

Media

Animation

Social

Sensors

Screen Arrangement

LEGO® MINDSTORMS®

Display Invisible Components in Viewer

Screen1

Text for Button1

5:09 PM



Image

kitty.png...

Text

Text for Button1

TextAlignment

center ▾

TextColor

■ Default

Visible

Width

Fill parent...

Height

300 pixels...



MEOW Save Save As Checkpoint Open the Blocks Editor Pack

Palette Viewer Components Properties

Basic

Media

- Camera
- ImagePicker
- Player
- Sound
- VideoPlayer

Animation

Social

Sensors

Screen Arrangement

LEGO® MINDSTORMS®

Other stuff

Not ready for prime time

Old stuff

Display Invisible Components in Viewer

Screen1

5:09 PM

Text for Button1

Non-visible components

Sound1

Screen1

- Button1
- Sound1

Source

meow.mp3...

Rename... Delete...

Media

- kitty.png
- meow.mp3

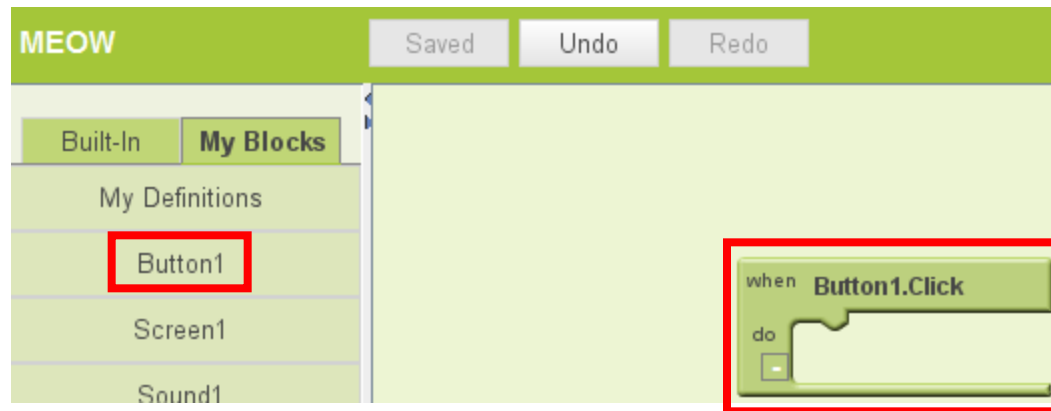
Add...



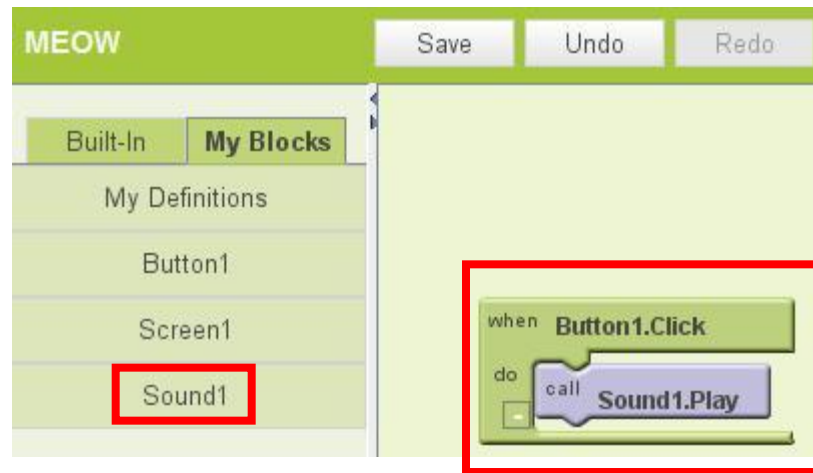
Block Editor



My Blocks\Button1\Button1.Click



My Blocks\Sound1\Sound1.Play



MEOW Saved Undo Redo **New emulator** Connect to Device... ? Zoom

Built-In My Blocks

My Definitions

Button1

Screen1

Sound1

when Button1.Click

do call Sound1.Play

5554:<build>

Starting the emulator. Please be patient.

Please wait. It can take 2 or 3 minutes for the emulator to become ready — even longer the first time.

The emulator will be ready when the phone screen has a picture background as shown in the right image here. If it has a lock screen, as shown in the left, slide the bar with the green lock icon to the right to unlock it.

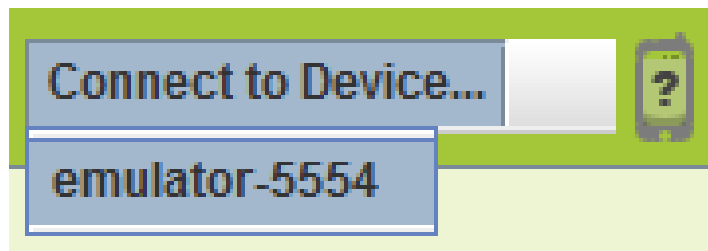
Even after the picture appears, continue to wait for the emulator to finish preparing the SD card: watch the notification area at the top of the emulator screen.

When the emulator is ready, choose it from the Connect to Device menu to connect

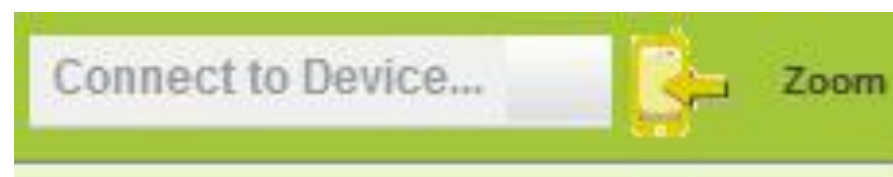
The Troubleshooting Guide at <http://appinventor.googlelabs.com/learn/troubleshooting.html> may provide further help.

OK



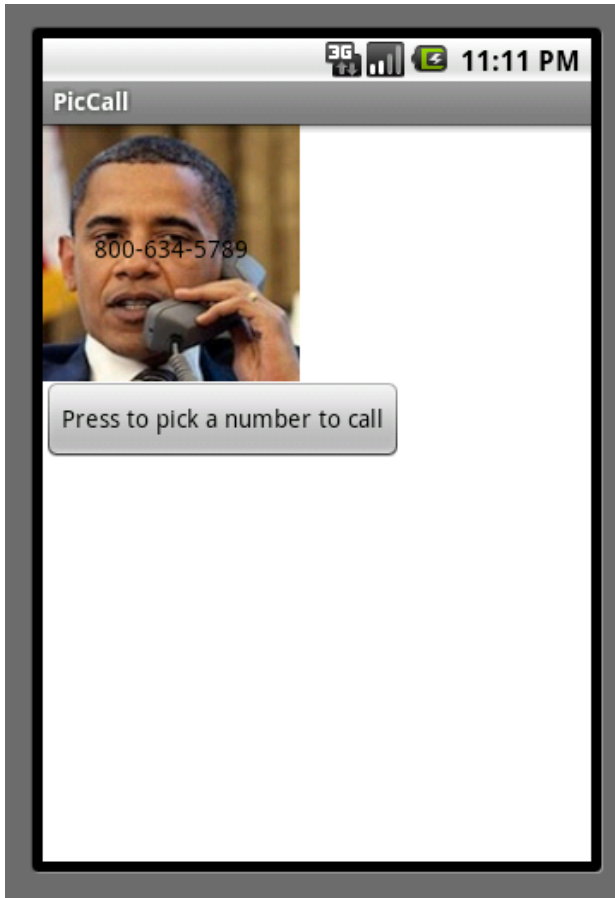


=>





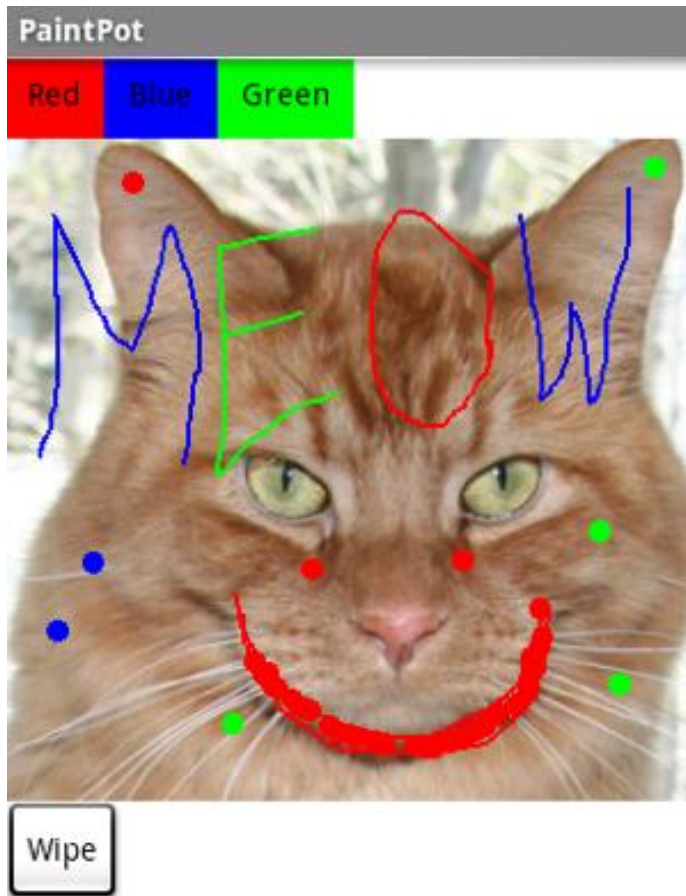
PicCall



- Button
- PhoneCall
- PhoneNumberPicker
- Image
- Label



PaintPot



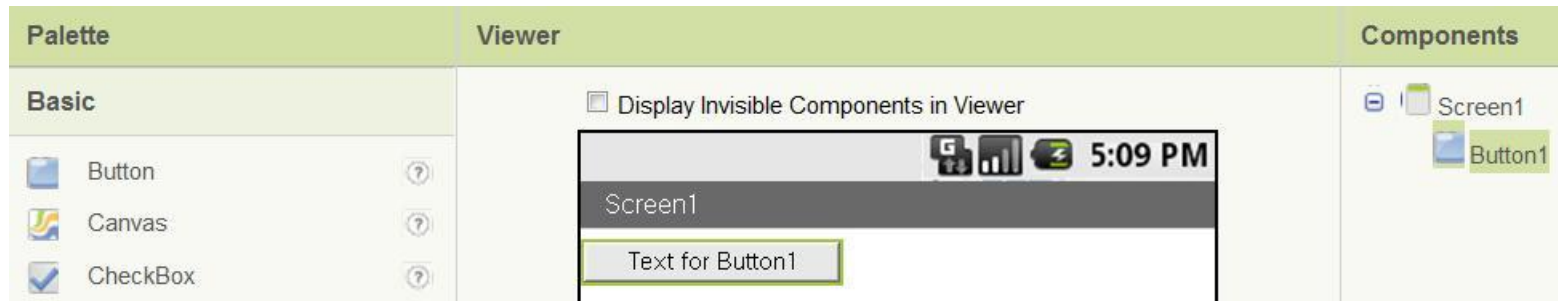
- Button
- Canvas
- Screen Arrangement
- Variables



Designer



建立按鈕



☐ Display Invisible Components in Viewer

Screen1

Green

Screen1

Green

BackgroundColor

Green

Enabled

FontBold

FontItalic

FontSize

14.0

FontTypeface

default

Image

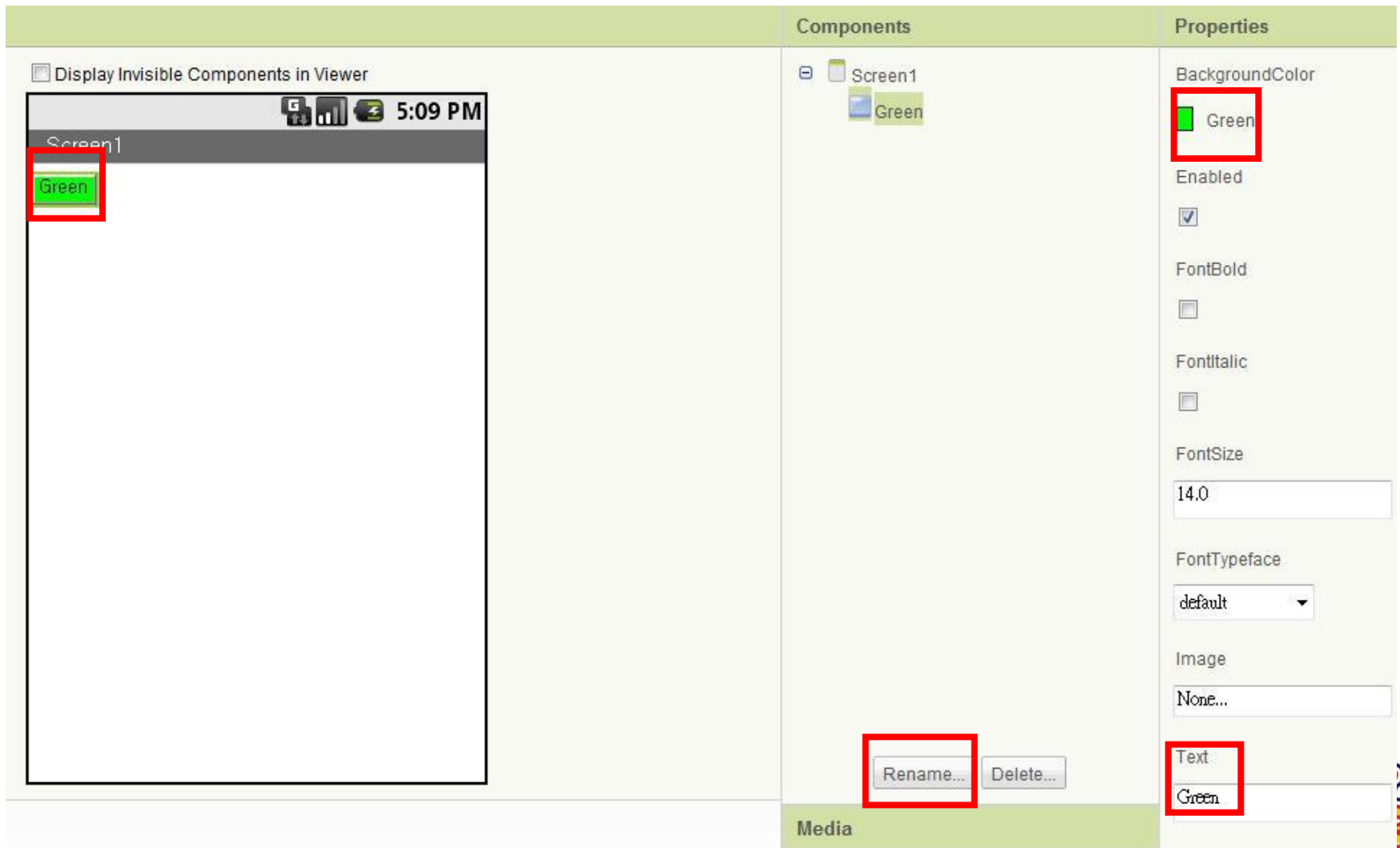
None...

Text

Green

Rename... Delete...

Media



Display Invisible Components in Viewer

Screen1

Green

Blue

Red

5:09 PM

Components

- Screen1
 - Green
 - Blue
 - Red

Rename... Delete...



Palette Viewer Components

Basic

Media

Animation

Social

Sensors

Screen Arrangement

- HorizontalArrangement
- TableArrangement
- VerticalArrangement

Display Invisible Components in Viewer

Screen1

Green

Blue

Red

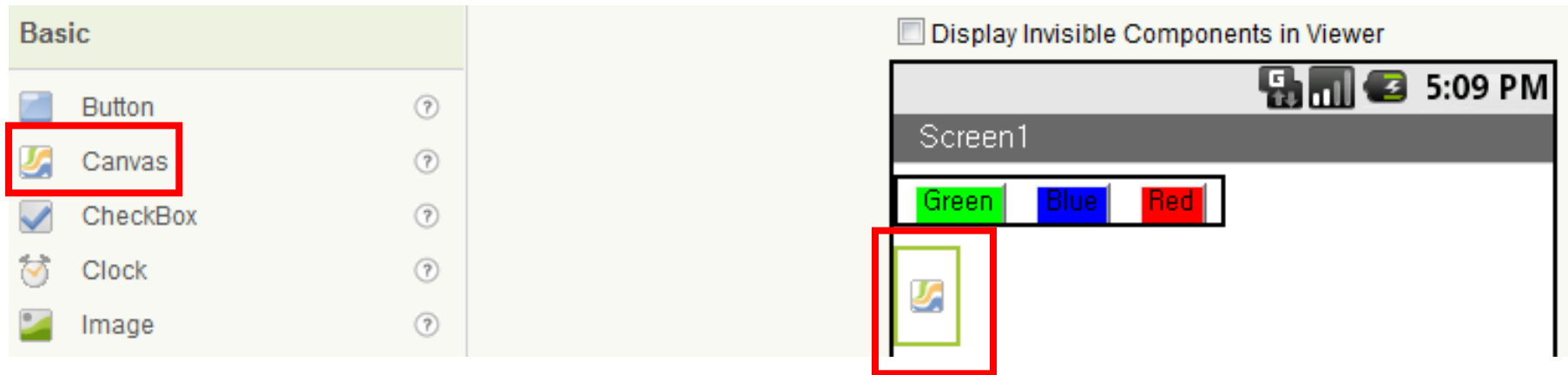
Screen1

- Green
- Blue
- Red
- HorizontalArrangement1





新增畫布Canvas元件






Display Invisible Components in Viewer

Screen1

Green Blue Red



Components

- Screen1
 - HorizontalArrangement1
 - Green
 - Blue
 - Red
 - Canvas1

Properties

BackgroundColor

White

BackgroundImage

Gozila1.jpg...

LineWidth

2.0

PaintColor

Black

Visible

Width

Fill parent...

Height

Fill parent...

Rename... Delete...

Media

Gozila.jpg

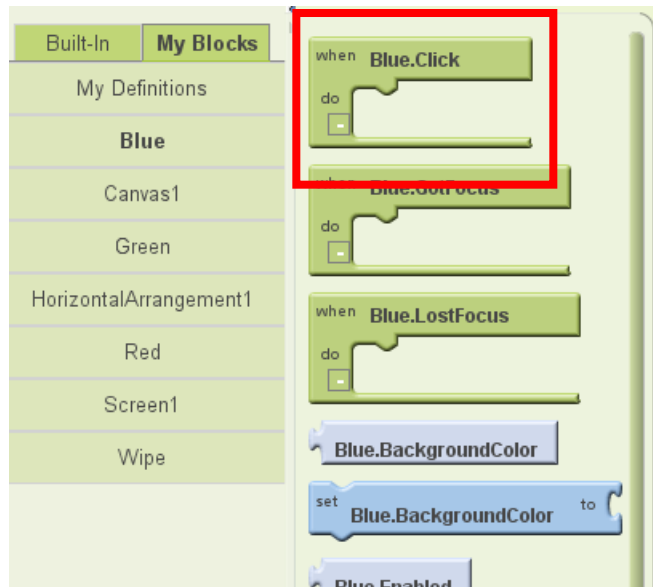




Block Editor



點選藍色按鈕:My Block\Blue\Blue.Click

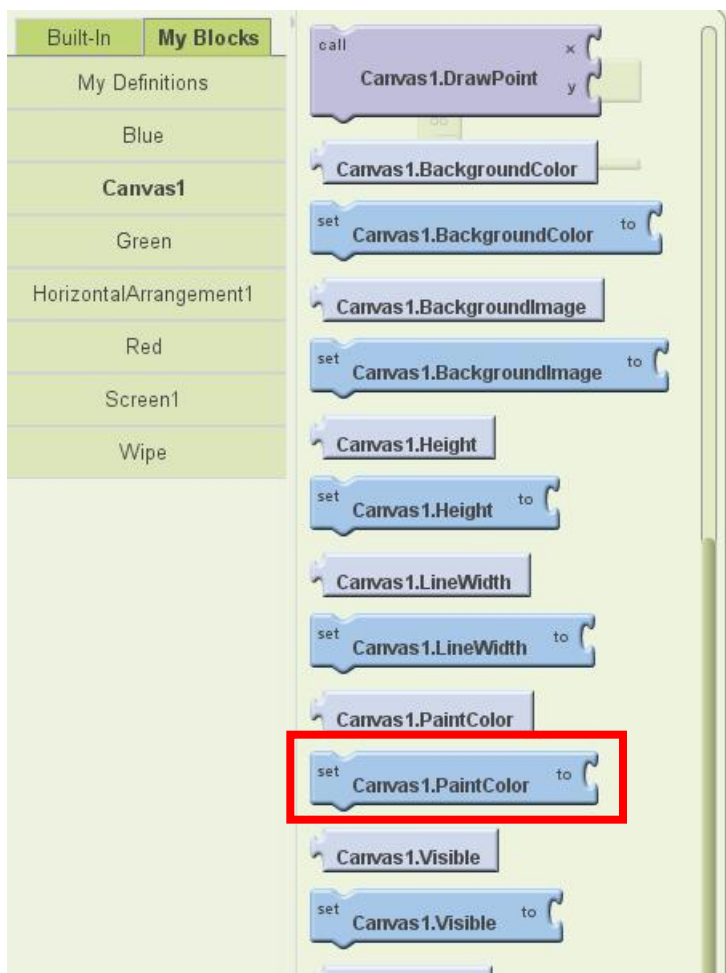


=>

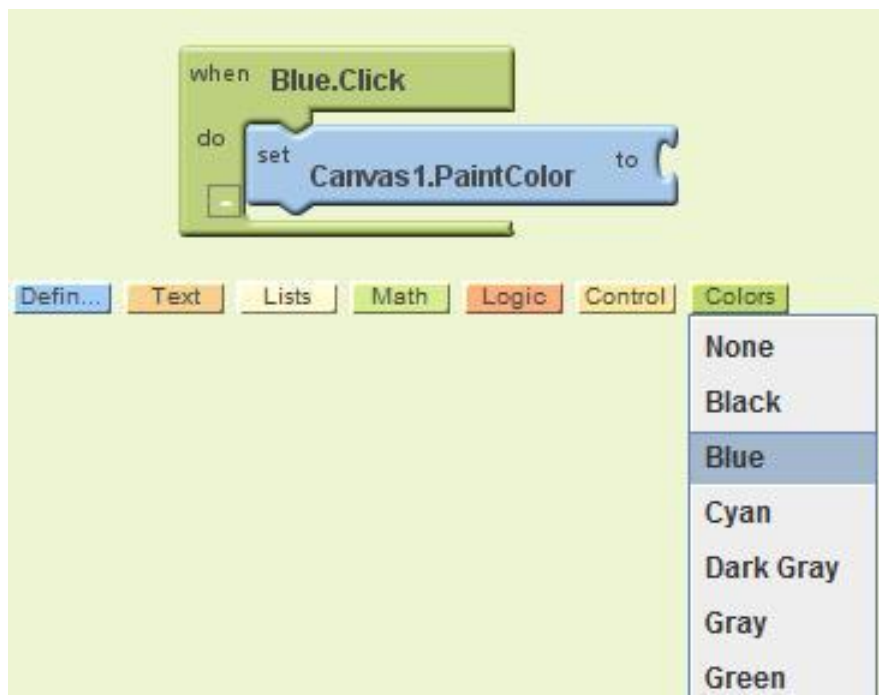


設定畫筆顏色:

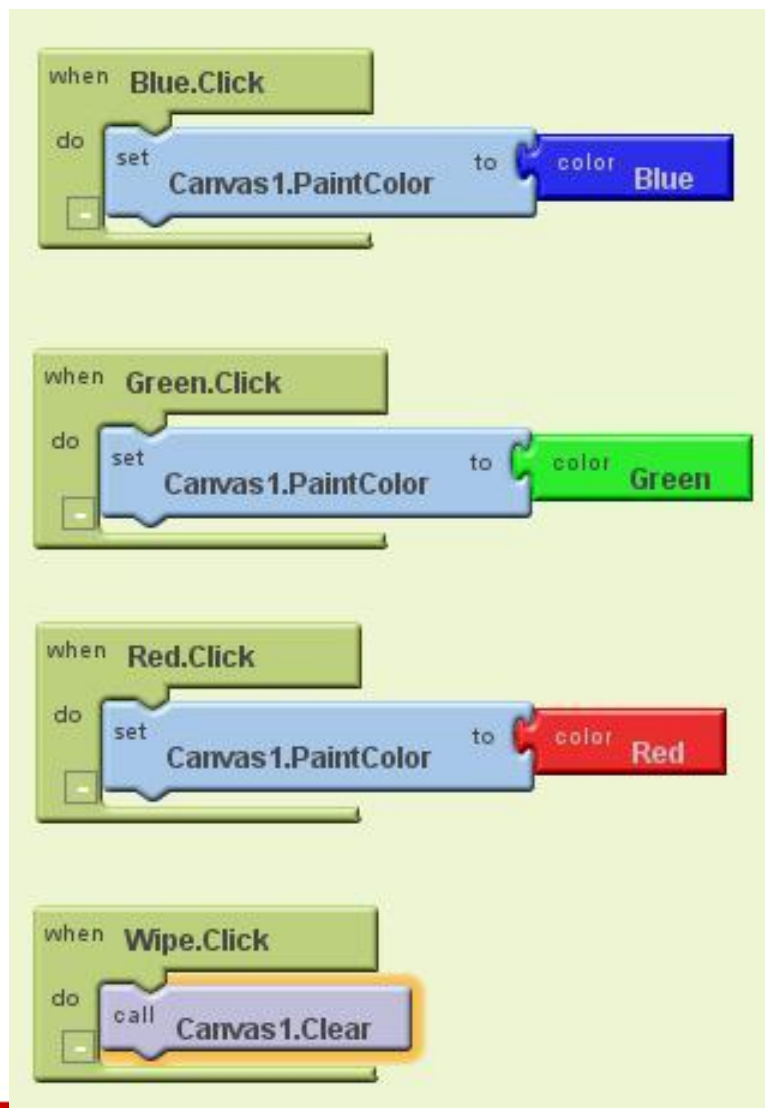
My Blocks\Canvas\Canvas1.PaintColor



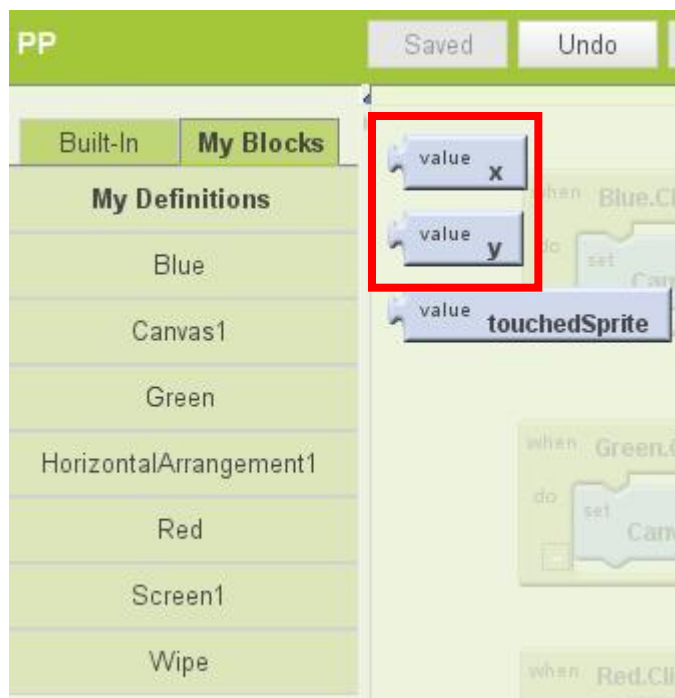
畫筆設定為藍色:Colors\Blue



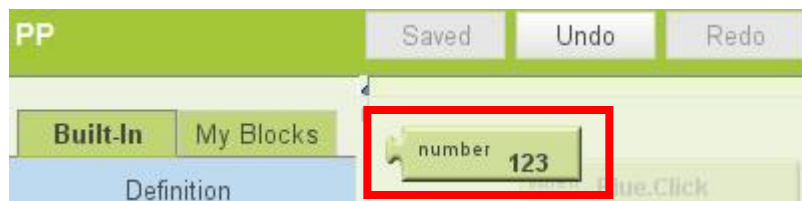
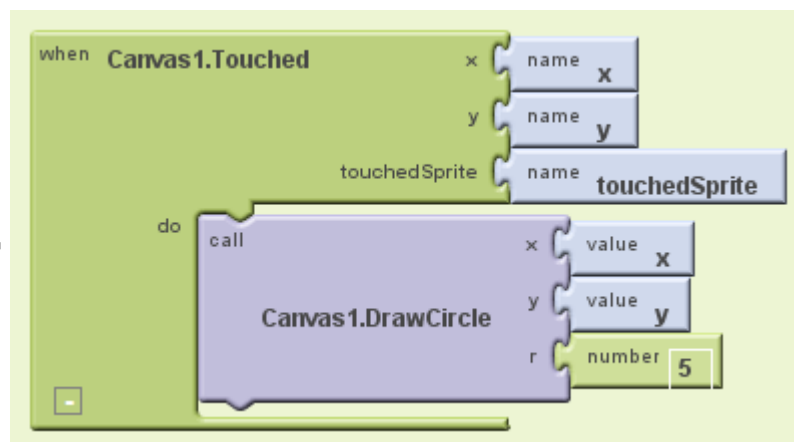
設定三種畫筆顏色並再設定一個清除螢幕



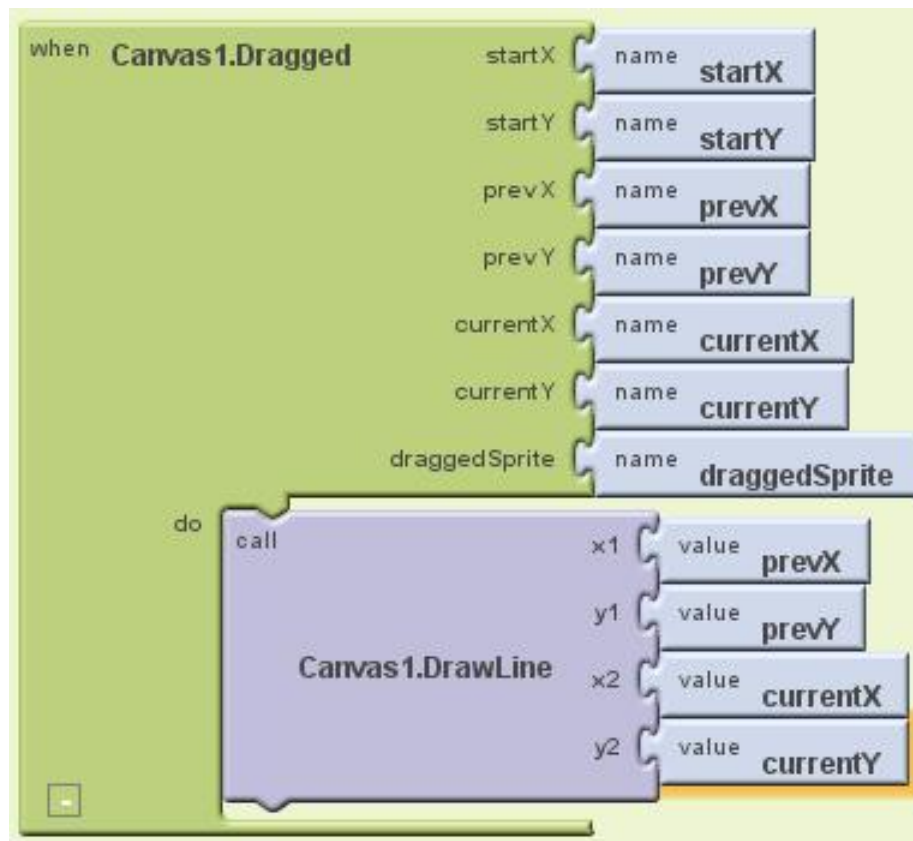
點擊畫面畫一個實心圓，並設定圓半徑為5像素



⇒



設定移動畫筆時的樣式(在此設定為直線)



```
when Blue.Click
do
  set Canvas1.PaintColor to color Blue
```

```
when Green.Click
do
  set Canvas1.PaintColor to color Green
```

```
when Red.Click
do
  set Canvas1.PaintColor to color Red
```

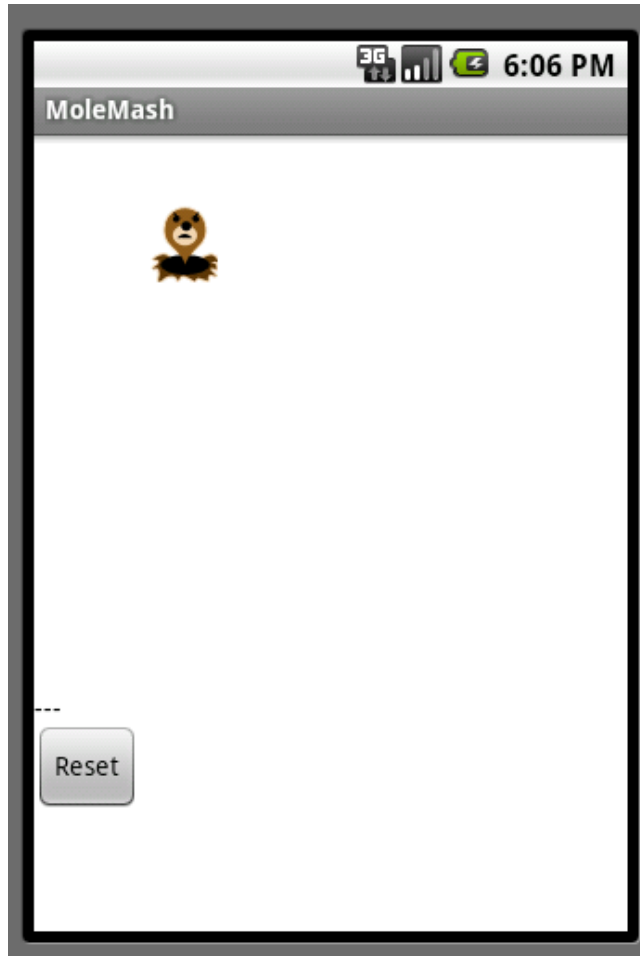
```
when Wipe.Click
do
  call Canvas1.Clear
```

```
when Canvas1.Touched
  x name x
  y name y
  touchedSprite name touchedSprite
do
  call Canvas1.DrawCircle
    x value x
    y value y
    r number 5
```

```
when Canvas1.Dragged
  startX name startX
  startY name startY
  prevX name prevX
  prevY name prevY
  currentX name currentX
  currentY name currentY
  draggedSprite name draggedSprite
do
  call Canvas1.DrawLine
    x1 value prevX
    y1 value prevY
    x2 value currentX
    y2 value currentY
```



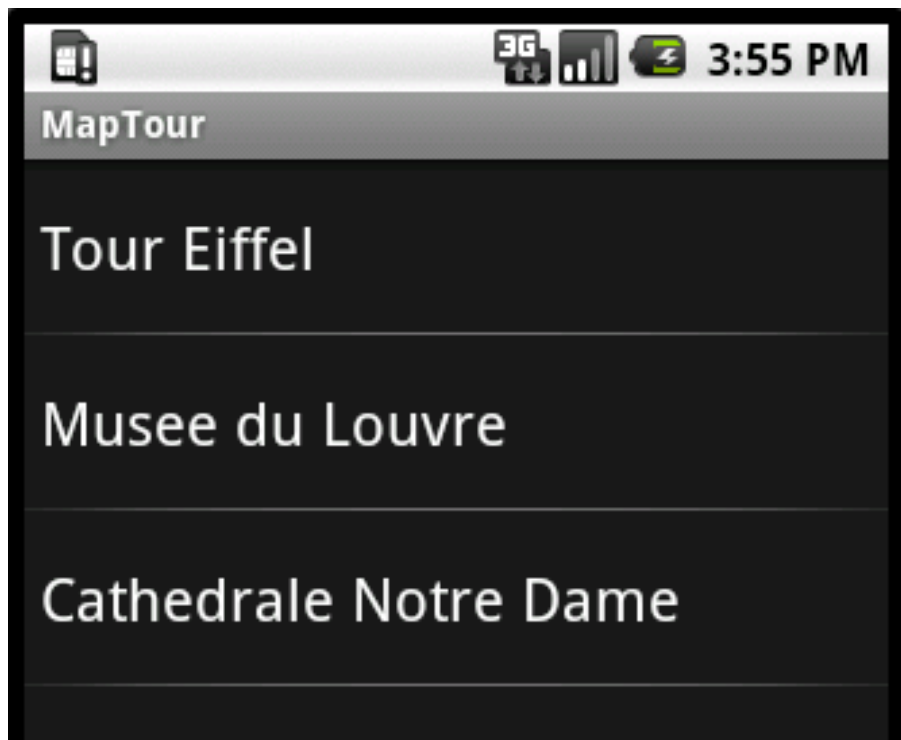
MoleMash



- Button
- Canvas
- Label
- ImageSprite
- Clock
- Random numbers
- Procedures
- Math



MapTour



- ListPicker
- ActivityStarter



Designer



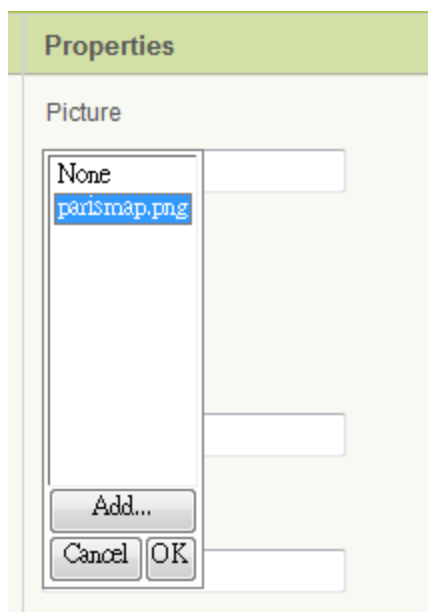
Palette\Basic\Image

Palette\Basic\ListPicker

Palette\Other stuff \ActivityStarter



在Image元件picture的地方放上parismap的圖片，請注意本圖片並無實際作用。



在ActivityStarter 元件加入下列設定，代表要
呼叫Google Map

Property	
Action	android.intent.action.VIEW
ActivityPackage	com.google.android.apps.maps
ActivityClass	com.google.android.maps.Map Activity

http://mapki.com/wiki/Google_Map_Parameters





MapTour

Save Save As Checkpoint

Blocks Editor is open Package for Phone

Palette

Viewer

Components

Properties

- Basic
 - Button
 - Canvas
 - CheckBox
 - Clock
 - Image
 - Label
 - ListPicker
 - PasswordTextBox
 - TextBox
 - TinyDB
- Media
- Animation
- Social
- Sensors
- Screen Arrangement
- Other stuff
- Not ready for prime time
- Old stuff



Non-visible components



- Screen1
 - Image1
 - ListPicker1
 - ActivityStarter1
- Rename... Delete...
- Media
- parismap.png
- Add...

- Image
 - Picture
 - parismap.png...
 - Visible
 -
 - Width
 - Automatic...
 - Height
 - Automatic...

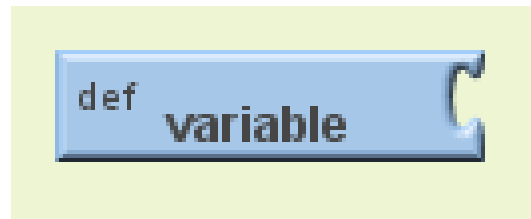


Block Editor



新增變數

(1) Built-in\Definition\def variable

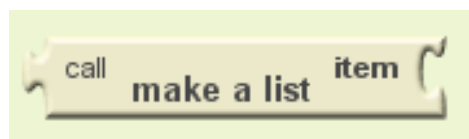


(2) 將variable改名為destinations

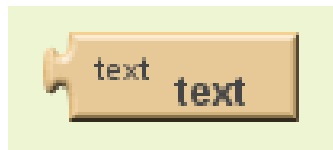


建立列表

(1) Built-in\Lists\make a list



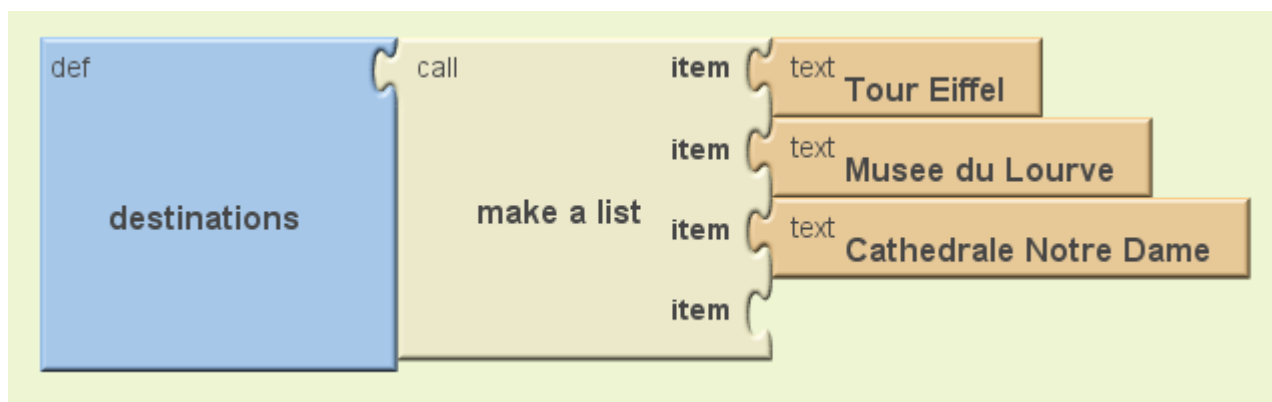
(2) Built-in\Texts\text



(3) 拉出三個text分別打入Tour Eiffel、Musee du Louvre、Cathedrale Notre Dame等地名

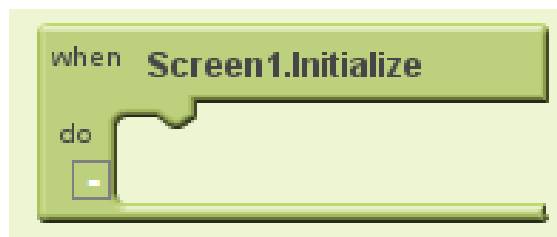


將destinations、make a list和三個text連接起來

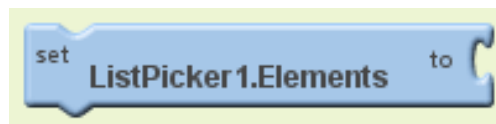


設定螢幕初始狀態

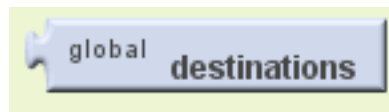
(1) My Blocks\Screen 1\ Screen 1.Initialize



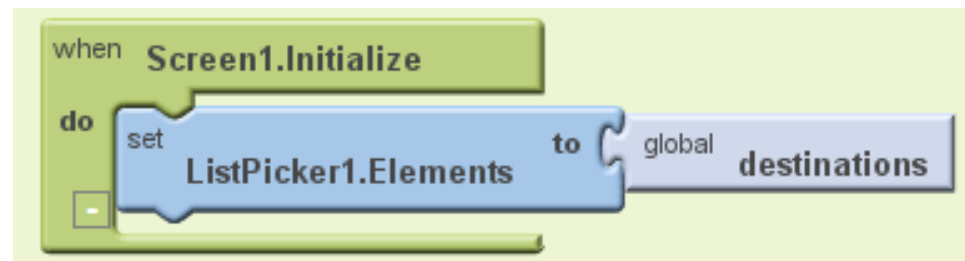
(2) My Blocks\ListPicker 1\ ListPicker1.Elements



(3)My Blocks\My Definitions\global destinations



當程式開始時，將ListPicker會去抓 destination的內容



設定搜尋目標與啟動地圖

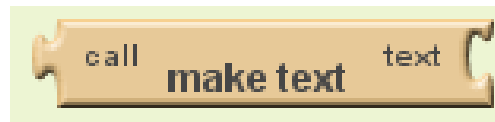
(1) My Blocks\ListPicker 1\ListPicker 1.AfterPicking



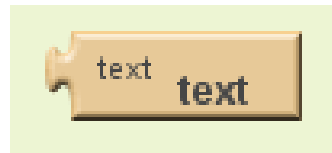
(2)My Blocks\ ActivityStarter 1\ActivityStarter 1.DataUri



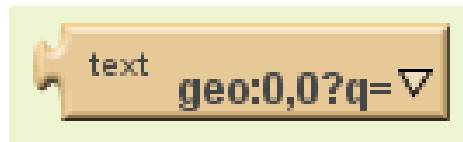
(3)Built-in\Texts\make text



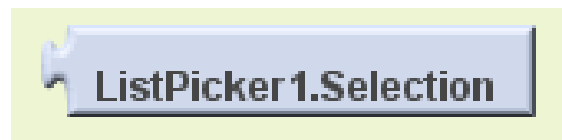
(4) Built-in\Texts\text



(5) 將text內容改為geo:0,0?q=



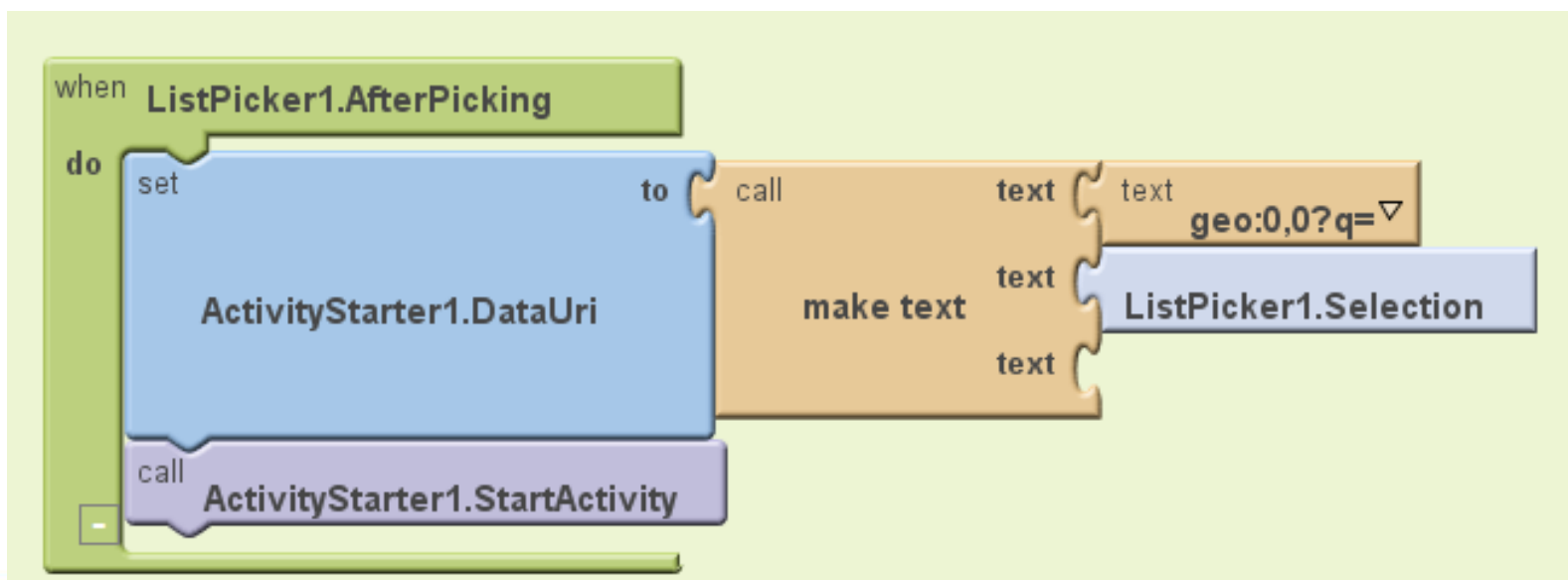
(6)My Blocks>ListPicker 1>ListPicker 1.Selection



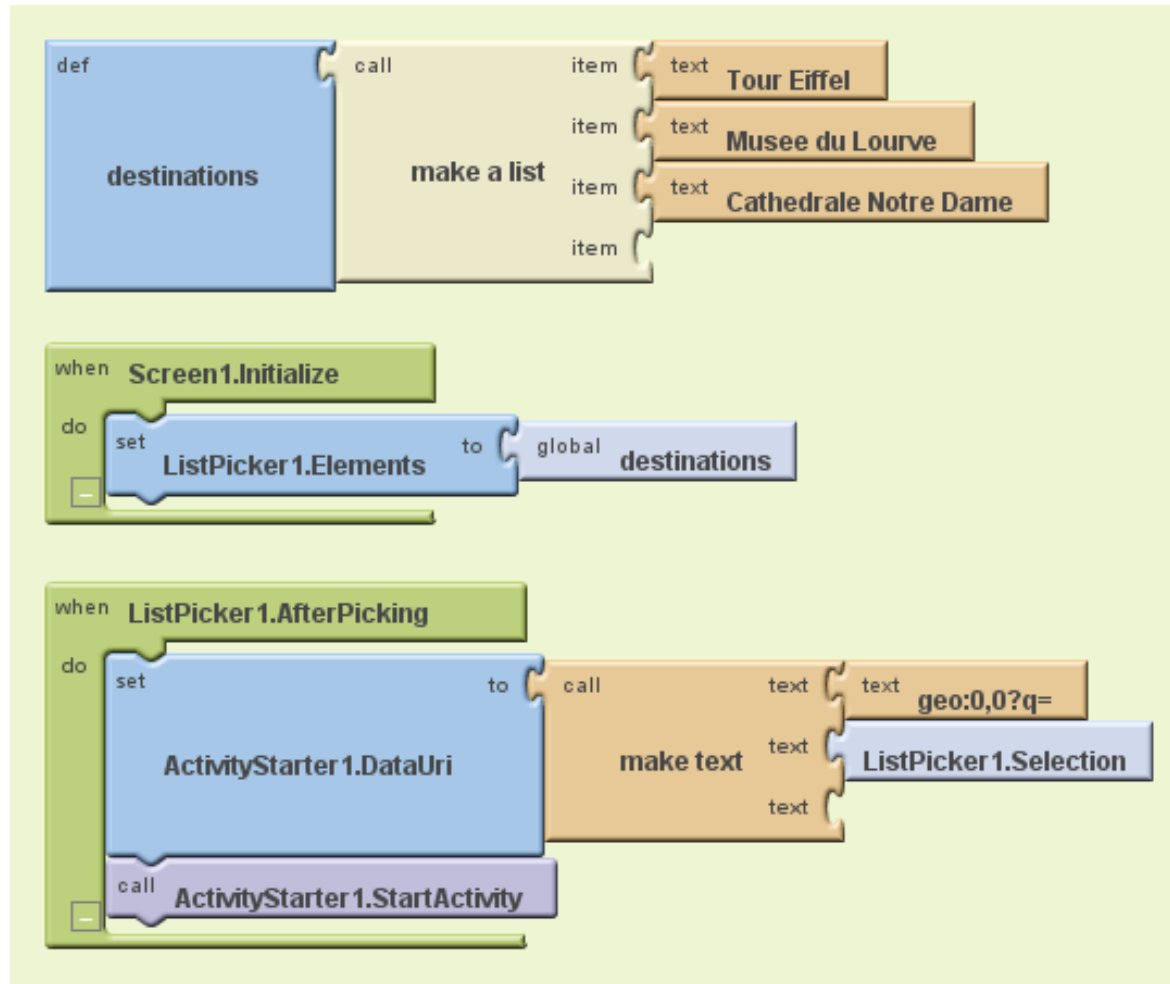
(7)My Blocks\ActivityStarter 1\ActivityStarter 1.StartActivity



選擇ListPicker某元件之後即透過ActivityStarter來處理。意即將地圖資訊透過網路送出到Google Map後顯示。



程式完成



延伸練習

1. 在手機列表中加入「Taipei 101」的選項並順利顯示
2. 直接輸入經緯度後顯示位置(可透過Google Map查詢某地點之經緯度)

