

## Leaving The Screen

### Day One 09 AUG

#### [AM]

- (1) Introduce each other by sharing picture files (1024\*768)  
使用圖片(1024\*768)自我介紹
- (2) Talk about Zach and history of openFrameworks  
介紹關於 Zack 與 openFrameworks 的歷史
  - (A) To make people :O (open mouse effect)  
讓觀眾驚奇展開嘴巴:O
  - (B) Idea comes from “What if?”  
思想是從疑問來的
  - (C) Likes to be called as a researcher instead of an artist  
喜歡被稱為研究者不是藝術家
- (3) How to create an empty project?  
如何建立空白方案

#### [PM]

- (1) Basic of openFrameworks  
openFrameworks 的基礎
- (2) 2D graphics (ofRect, ofCircle, ofLine, etc)  
平面圖形 (ofRect, ofCircle, ofLine, etc)
- (3) Variable (data type, declaration, assigning, calling)  
變數 (資料形態, 宣告, 指定, 讀取)
- (4) Media objects (ofImage, ofSoundPlayer, etc)  
媒體物件 (ofImage, ofSoundPlayer, etc)
- (5) For loop, For loop within a for loop  
For 迴圈裡面的 for 迴圈
- (6) Concept of image file (raw data is actually an 1D array stored in memory)  
圖檔的概念 (原始提檔是一次元資料在記憶體裡面)

#### [Q&A]

- (1) What is the differences between h and cpp files?  
It is like a recipe 很像食譜  
h file = ingredients 材料  
cpp file = instructions 步驟
- (2) Can we get coordinates of all the points in bezier curve?  
The openFrameworks currently does not have this function, it requires some calculation.  
openFrameworks 目前沒有這方面的功能, 必須要做計算
- (3) Which encoding setting should I use?  
Please use UTF-8 請使用 UTF-8
- (4) How to switch between scene to scene?  
Please use inherited object (e.g. sceneExample.zip) 請使用繼承物件 (範例: sceneExample.zip)

[Windows]

<http://www.openframeworks.cc/setup/codeblock>

Create new project 建立新方案

- (1) Copy “emptyExample”  
複製 “emptyExample”
- (2) Rename “emptyExample.workspace” and “emptyExample.cbp”  
把 “emptyExample.workspace”和“emptyExample.cbp”改名
- (3) Also rename “emptyExample.workspace” and “emptyExample.cbp” with text editor  
同時也編輯“emptyExample.workspace”和“emptyExample.cbp”的文字檔

[Homework]

- (1) Draw your name  
請畫您的名字
- (2) Create a for loop inside a for loop  
請使用 for 迴圈裡面的 for 迴圈
- (3) Use media object  
請使用媒體物件

[Link]

- (1) <http://visiblevisible.org/deliver/playground/playgroundDay1.zip>
- (2) <http://visiblevisible.org/deliver/playground/sceneExample.zip>

## Day Two 10 AUG

[AM]

- (1) Array 陣列
- (2) Object 物件  
h file is like ingredient list of recipe H 檔案就像食譜的材料表  
cpp file is like instruction list of recipe CPP 檔案就像食譜的作業程序
- (3) Vector 向量  
scalable array, global array 有彈性的陣列，通用的陣列
- (4) Equation using percentage 使用百分比公式

[PM]

- (1) Free discussion 大家討論
- (2) Pixel manipulation (0 ~ 255) 像素處理  
Image file is stored in 1D array. It can be treated as sound file using Audicity.  
圖檔存成一因次可以使用 Audicity 當成音響檔  
Equation to access a specific pixel (grayscale) 存取灰階像素的公式  
 $y * \text{myImage.width} + x$   
Equation to access a specific pixel (color) 存取彩色像素的公式  
 $(y * \text{myImage.width} + x) * 3 + 0$  (red) 紅色  
 $(y * \text{myImage.width} + x) * 3 + 1$  (green) 綠色  
 $(y * \text{myImage.widht} + x) * 3 + 2$  (blue) 藍色
- (3) Drivers for webcam (PS3 Eyetoy) 網路攝影機的驅動程式  
Win: CL-Eye Driver, AMCAP (useful for configuring)  
Mac: macam

[Homework]

- (1) Super cool drawing tool [很酷的畫圖工具](#)
- (2) Something amazing with video camera [網路攝影機創作東西](#)

[Link]

- (1) <http://visiblevisible.org/deliver/playground/playgroundDay2.zip>
- (2) [http://visiblevisible.org/deliver/playground/playgroundDay2\\_imageSynthesis.zip](http://visiblevisible.org/deliver/playground/playgroundDay2_imageSynthesis.zip)

## Day Three 11 AUG

[AM]

- (1) Control Arduino [控制 Arduino](#)  
Upload Firmata to Arduino so that OF can control Arduino directly.  
[如果想使用 OF 控制 Arduino 的話，需要上傳 Firmata 到 Arduino](#)  
Demo on LED on/off, potentiometer A/D, and PWM.  
[演示 LED 開關，電位計 A/D，和 PWM](#)
- (2) OfxCvHaarFinder  
Face recognition library [人臉辨識函式庫](#)
- (3) Xeno technique [Xeno 公式](#)  
 $originalValue = 0.8 * originalValue + 0.2 * targetValue;$   
Example (mouse follower):  
 $catchMouseX = 0.999 * catchMouseX + 0.001 * mouseX;$   
 $catchMouseY = 0.999 * catchMouseY + 0.001 * mouseY;$
- (4) ofxSpeechRecognizer  
Voice recognition [語音識別](#)
- (5) Particle system to avoid mouse [可以避免滑鼠的粒子系統](#)

[PM]

- (1) Free discussion [大家討論](#)
- (2) Talk about the projects and form some groups [開始討論要做什麼，找同伴](#)

[Link]

- (1) <http://visiblevisible.org/deliver/playground/playgroundDay3.zip>
- (2) <http://visiblevisible.org/deliver/playground/fftExample.zip>
- (3) <http://visiblevisible.org/deliver/playground/fftExampleWithGraphics.zip>
- (4) <http://visiblevisible.org/deliver/playground/ftglExample.zip>

## Day Four 12 AUG

[Link]

- (1) <http://visiblevisible.org/deliver/playground/additiveSynthesis.zip>
- (2) <http://visiblevisible.org/deliver/playground/renderManagerExample.zip>

## Day Five 13 AUG

[Link] <http://visiblevisible.org/deliver/playground/imageToSound.zip>

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