

Module : Physical Computing

主題 : Hacking Toy / 講師 : Tobias Hoffmann - <http://kiilo.org>

主題 : DIY sounding / 講師 : Marc R. Dusseiller - <http://www.dusseiller.ch/labs> : www.sgmk-ssam.ch

工作坊排程 :

日期	早上 10AM – 1PM (3hours)	Lunch 1-2PM	2PM - 6PM (4hours)
Day 1 : 30, June	<ul style="list-style-type: none">● 整個工作坊簡介● FLOSS 概念● 各組主題簡介● 學員, 講師介紹● 各組助教介紹● 應用軟硬體介紹		何謂 Physical Computing & Arduino? <ul style="list-style-type: none">● 如何將真實世界的資訊輸入電腦?● 如何控制外面的世界?● 如何變得有趣?
Day 2 : 01, July	基礎電路 <ul style="list-style-type: none">• 感應器• LDR 光學感應器• 震量器• 促動器• LED & 電晶體 動手吧 ... <ul style="list-style-type: none">● pduino (PD & Arduino)● 駭玩具		編譯 Arduino I 輸入/輸出 <ul style="list-style-type: none">• 數位輸入/輸出• serial IO (序列 IO)• 促動器 / 馬達• servo (伺服電動機) 動手吧 ... <ul style="list-style-type: none">• 駭些玩具• 與 Arduino IDE 共樂
Day 3 : 02, July	編譯 Arduino II <ul style="list-style-type: none">• branches, loops, and functions• serial IO - 如何送參數• 開放實驗時間• 創意啟發• 除錯• 找解答		編譯 Arduino III <ul style="list-style-type: none">• 何謂 Arrays• 轉換 serial IO non blocking code• serial IO - 如何調變參數
Day 4 : 03, July	開放實驗時間 <ul style="list-style-type: none">• 創意啟發• 除錯• 找解答• 接近完成!!		<ul style="list-style-type: none">● 佈展準備● 表演預演
Day 5 : 04, July	SHOW		TIME

{ 未定, 待修 / 7 May'08 }

workshop equipment :

- Arduino 包 (另詳列)
- 工具 (另詳列)
- 音箱一對 (如果可能的話)
- 投影器
- 網路列表機 / network printer
- 電腦一部 (備)
- 放滿飲料的桌子 (片刻大腦休息充電用，亦開放給他組)
- 無線網絡

學員行前準備：

<硬體>

- laptop computer w/ wlan either (windows, os, linux)
- cheap electronic toy (could be craps)
- some easy construction materials (for example, clay, tapes, paper box...)

<下載軟體>

- Arduino IDE : <http://www.arduino.cc/en/Main/Software>
- preferred installed Arduino driver for PC, MAC : <http://www.arduino.cc/en/Guide/HomePage>

<FLOSS 參考軟體>

- pd : <http://puredata.info/>
- processing : <http://processing.org/>
- pure:dyne : <https://devel.goto10.org/puredyne>
- <http://www.opensound.com/ossapps.html>

workshop timeframe :

日期	早上 10AM – 1PM (3hours)	Lunch 1-2PM	2PM - 6PM (4hours)
Day 1 : 30, June	<ul style="list-style-type: none"> ● program concept of overall ● FLOSS ideas ● intro. each modules ● intro. students, mentors ● intro. assistances ● intro. applications 		What is Physical Computing & Arduino? <ul style="list-style-type: none"> ● how-to get real world data into the computer? ● how-to control the outside world? ● how-to get creative with it?
Day 2 : 01, July	Electro Basics <ul style="list-style-type: none"> • Sensors • LDR (light depend resistor; light sensor) • Accelerometer • Actuators • LED /Transistor . Lets do something ... <ul style="list-style-type: none"> ● play pduino (PD & Arduino) ● hack some toys 		Programming Arduino I input/output <ul style="list-style-type: none"> • digital Output / Input • serial IO Actuators • motor • servo • Lets do something ... • hack some toys • play with Arduino IDE
Day 3 : 02, July	programming Arduino II <ul style="list-style-type: none"> • branches, loops, and functions • serial IO - HOWTO send parameters Time for Open Experiment <ul style="list-style-type: none"> • getting creative • debugging • find solutions 		programming Arduino III <ul style="list-style-type: none"> • more instructions on Arrays • switch / serial IO non blocking code • serial IO - HOWTO send parameters
Day 4 : 03, July	Open Experimental time... <ul style="list-style-type: none"> • getting creative • debugging • find solutions • Get things running 		<ul style="list-style-type: none"> ● Organising exhibition space. ● Rehearsal for performance
Day 5 : 04, July	SHOW		TIME

workshop equipment :

- Arduino + electronic + jump wires Kit (another sheet)
- electro tools (another sheet)
- 1 pair of speakers (if possible)
- projector
- network printer
- notebook or pc (spared in case)
- a table with drinks (for open/short breaks also open for other modules)
- wireless access point

Student should come along with :

<hardware>

- laptop computer w/ wlan either (windows, os, linux)
- cheap electronic toy (could be craps)
- some easy construction materials (for example, clay, tapes, paper box...)

<download software>

- Arduino IDE : <http://www.arduino.cc/en/Main/Software>
- preferred installed Arduino driver for PC, MAC : <http://www.arduino.cc/en/Guide/HomePage>

<FLOSS reference>

- pd : <http://puredata.info/>
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- pure:dyne : <https://devel.goto10.org/puredyne>
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{yet finalized / 7 May'08}