FLUSSI MEDIA ARTS FESTIVAL

Free software for interactive applications - Linux workshop
HCSSLUG

LOCATION AND DATE
Teatro Comunale Carlo Gesualdo
Piazza Castello Avellino / Italy
August 29,30,31 2013

DURATION
The workshop will last 12 hours.

LECTURERS
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GOALS

The aim of the workshop is to introduce the concepts that are the basis of open source programming environment (Linux) applied to the realization of interactive applications such as video games, facilities, etc. ...

Specifically, will be illustrated all the steps necessary to develop an interactive installation at low cost, thanks to the combined use of free software (Linux,C,OpenGL[1],SDL[2]) and recycled materials such as old PCs, the implementation of a capacitive controller[3] consists of low cost discrete components and techniques to easily make the PCB for the controller.

The entire application will use a board Raspberry Pi(note 4) as a platform which will be illustrated with its operation and features.

It is preferable, but not necessary, a prior knowledge on the basics of programming (C language) and of the basic principles of electronics, the complexity of the course will adapt to the type and the skills of the audience.

1 OpenGL (Open Graphics Library) is a specification that defines an API for multiple languages and for multiple platforms for writing applications that produce 2D and 3D computer graphics. The interface consists of approximately 250 different function calls which can be used to draw complex three-dimensional scenes from simple primitives.
2 Simple DirectMedia Layer (SDL) is a cross-platform multimedia free library, written in C that creates an abstraction layer on top of various software platforms graphics and sound and thus can control video, digital audio, CD-ROM, sound, threads, shared loading of objects, timer and networking.
3 Capacitive sensors (capacitive or inductive proximity switch) are based on the principle of detecting the electrical capacitance of a capacitor: their sensitive side it forms a reinforcement, the presence in close proximity of a conducting object, achieves the other plate of the capacitor .
   Thus the presence of an object creates a capacity that the internal circuits detect, commanding the switching of the output signal.
4 The Raspberry Pi is a single-board computer (a computer implemented on a single circuit board) developed in the UK by the Raspberry Pi Foundation. Its launch to the public occurred by the end of February 2012. Currently, it is sold in two versions, priced at 25 and 35 U.S. dollars.

WEDNESDAY 28 SCHEDULE
h. 15.00 – 18.00
Introduction
The basics of free software
The principles of programming

THURSDAY 29 SCHEDULE
h. 15.00 – 18.00
Setting up the work
OpenGL (introduction and examples)
SDL (introduction and examples)

FRIDAY 30 SCHEDULE
h. 15.00 – 18.00
The trashware
Raspberry Pi
Application Development

SATURDAY 31 SCHEDULE
h. 15.00 – 18.00
Fundamentals of electronics
Capacitive sensors
Implementation of the controller

REQUIRED MATERIAL FOR WORKSHOP PARTICIPATION
A laptop computer.

BIOGRAPHY
HCSSLUG born May 15, 2007 at the University of Salerno, where a group of university students enrolled in the Computer Science degree, decided to give rise to a new reality associative, that aimed to spread and development of free software and the multiple applications of this philosophy.

One of the cornerstones of our association, is completely detached from any political ideology, all members are free to express their political views outside the association, provided they do not interfere with the normal pattern of life membership.

HCSSLUG is the main organizer for the LinuxDay in Salerno, and collaborates with different organizations (academic and otherwise), pursuing the same goals. In his early years HCSSLUG organized several events, and has worked actively to the introduction of free software in public administration.

COST AND REGISTRATION
Workshop is free.
Registrations deadline: August 25, 2013.
For registration and information please luca@flussi.eu
For participants off-site are provided facilities at discounted prices.