NOTE ON ADDING GPIO CONTROL TO THE PI PRESENTS EXAMPLE RADIOBUTTONSHOW_1P3

Greg Reynolds July 2015

The purpose of this note is to show how I added GPIO control to the pp_radiobuttonshow_1p3 example.

In our museum we wanted to allow the user to play selected videos by pressing a button on a kiosk with a button panel and video screen. There would be a video playing in a loop to show what each button would play. Since the example radiobuttonshow already had the looped video feature, I decided to try and add the GPIO control for the kiosk buttons.

If you plan to modify an example you want to create a copy of it so you don't destroy the original. Since Pi Presents has no SAVE AS function, you will have to pull down the Profile menu in the Editor window and click New from Template and select Radiobutton Show and give it a new name. The Editor will then create a directory with this new name under the directory pp_profiles.

As you can see, the directory structure of Pi Presents gets pretty complicated. To better understand this, a directory tree is helpful. A partial directory tree of Pi Presents is shown in Fig. 1. In this case, the name of the profile created is GRKiosk1.

If you want to make a copy of a profile, you have to create a profile with a new name and replace the new profile directory with a copy of the old profile directory AND ITS CONTENTS using the File Manager PCManFM of the LXDE Desktop.

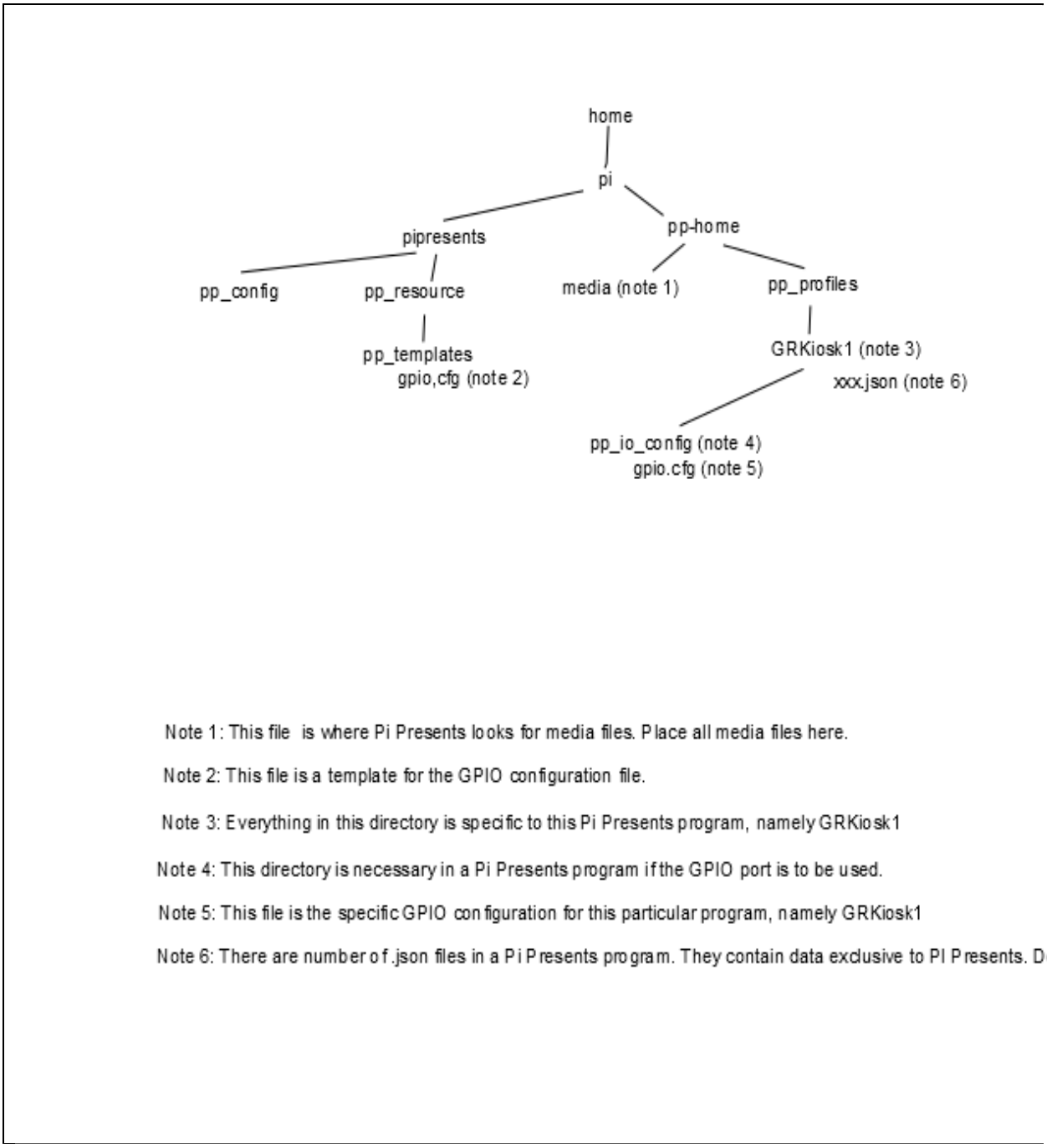


Fig. 1 Partial Directory Tree of PI Presents

Video files

The videos you want to play must be stored in the home/pi/pp_home/media directory. In this case, the media files are called vid0.AVI, vid1.AVI, and vid2.AVI. We will come back to these later.

GPIO.CFG files

To make input signals (probably connections to the Raspberry Pi ground) on the GPIO port play a video, you must have in the profile directory a directory called pp_io_config. In this directory there must be a file called gpio.cfg. If you look at the directory tree you will see two files of this name. The first is a general purpose template under home/pi/pipresents/pp_resource/pp_templates. If you open this file with a text editor, you will see that it is filled with comments that tells you how to modify this file. It is also described in Section 13 of the Gapless Manual. The other gpio.cfg file is the specific one for the GRKiosk1 profile, so it is under home/pi/pp_home/pp_profiles/GRKiosk1/pp_io_config. Below is the section that was changed to make pin 12, 13 and 15 useable to play a video.

[P1-12]

direction = in

rising-name =

falling-name = pin12

one-name =

zero-name =

repeat =

threshold = 2

pull-up-down = up

[P1-13]

direction = in

rising-name =

falling-name = pin13

one-name =

zero-name =

repeat =

threshold = 2

pull-up-down = up

[P1-15]

direction = in

rising-name =

falling-name = pin15

one-name =

zero-name =

repeat =

threshold = 2

pull-up-down = up

Both the comments in the gpio.cfg template and section13.2.1 of the Gapless manual described the purpose of these lines in detail.

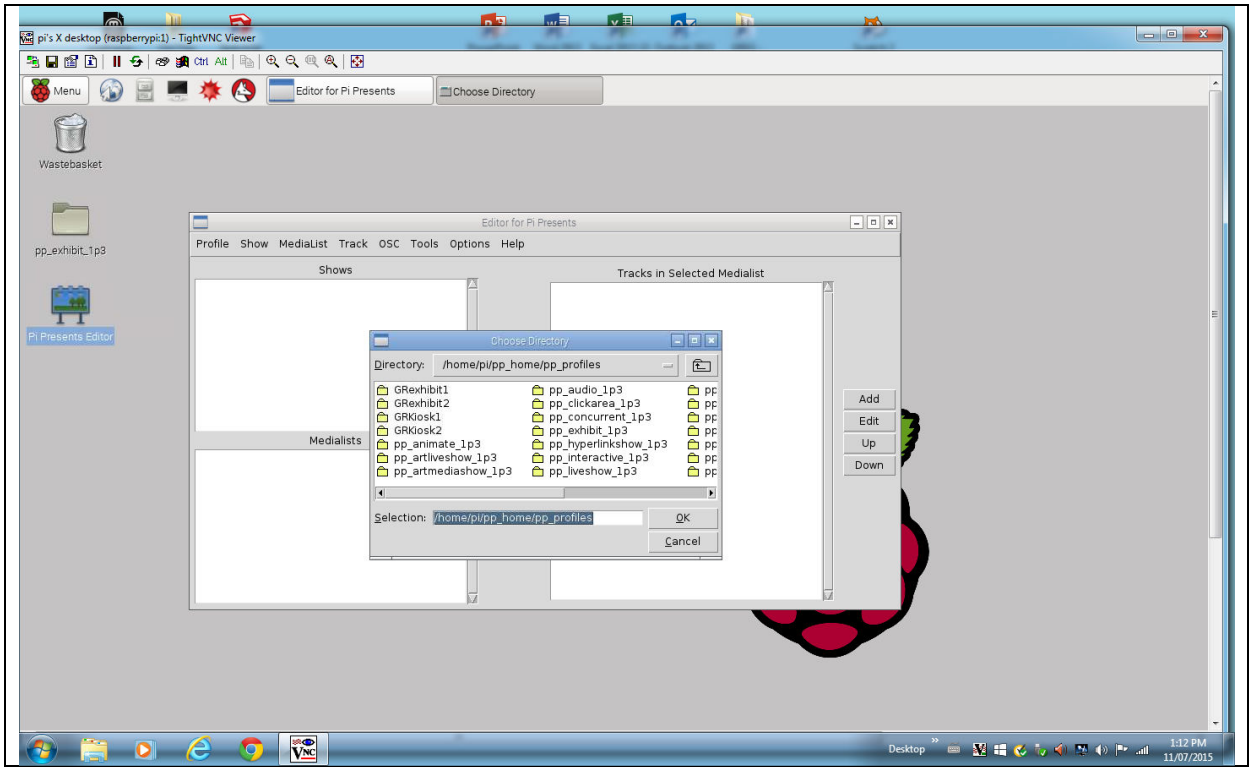
I have arbitrarily assigned the symbolic names “pin12”, “pin13” and “pin15” to the action of these pins being pulled down the ground.

The gpio.cfg file is modified using a text editor. This must be done carefully or an error message will occur.

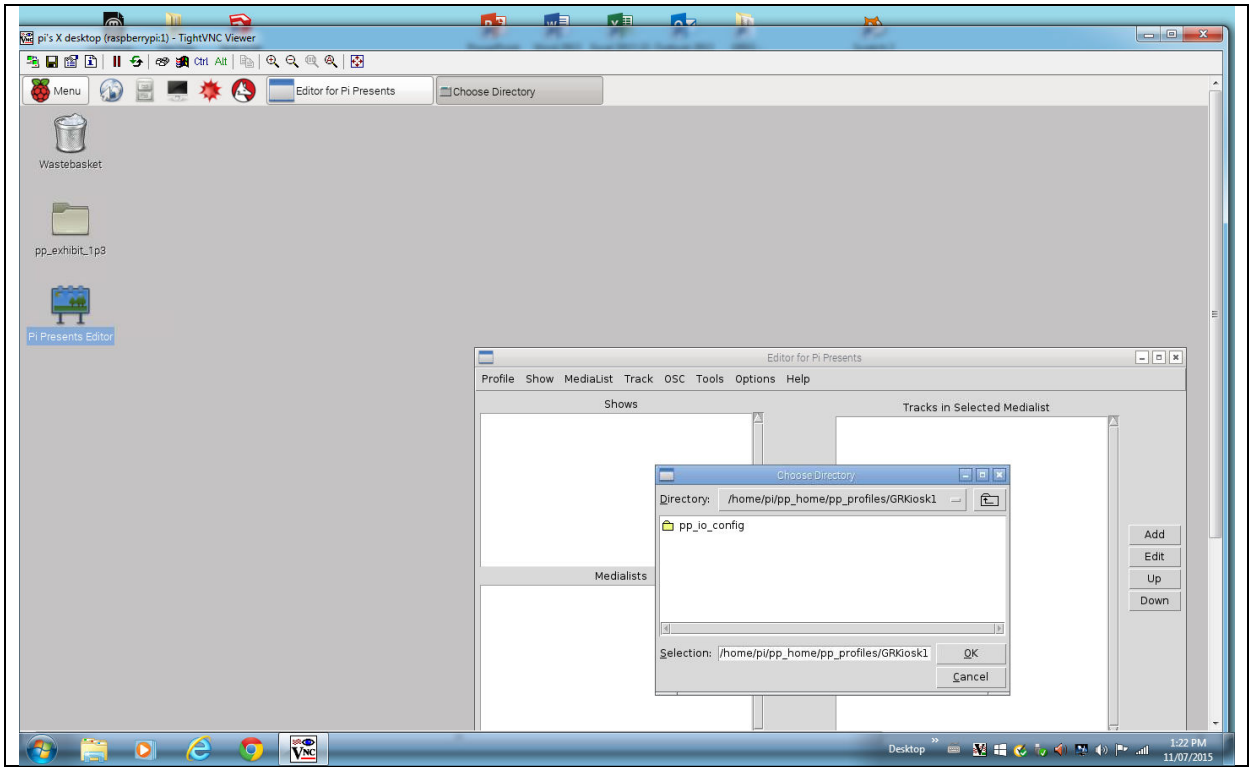
USING THE PI PRESENTS EDITOR TO MAKE THE GPIO INPUTS TO PLAY A VIDEO

Now we have to use the PI Presents editor to make the videos and gpio.cfg files usable.

Open the editor by double clicking the Pi Presents Editor icon on the LXDE desktop. (You should have moved it there when you first downloaded Pi Presents.) In the editor window pull down the Profile menu to Open. This will present a widow listing all the profiles. See below.

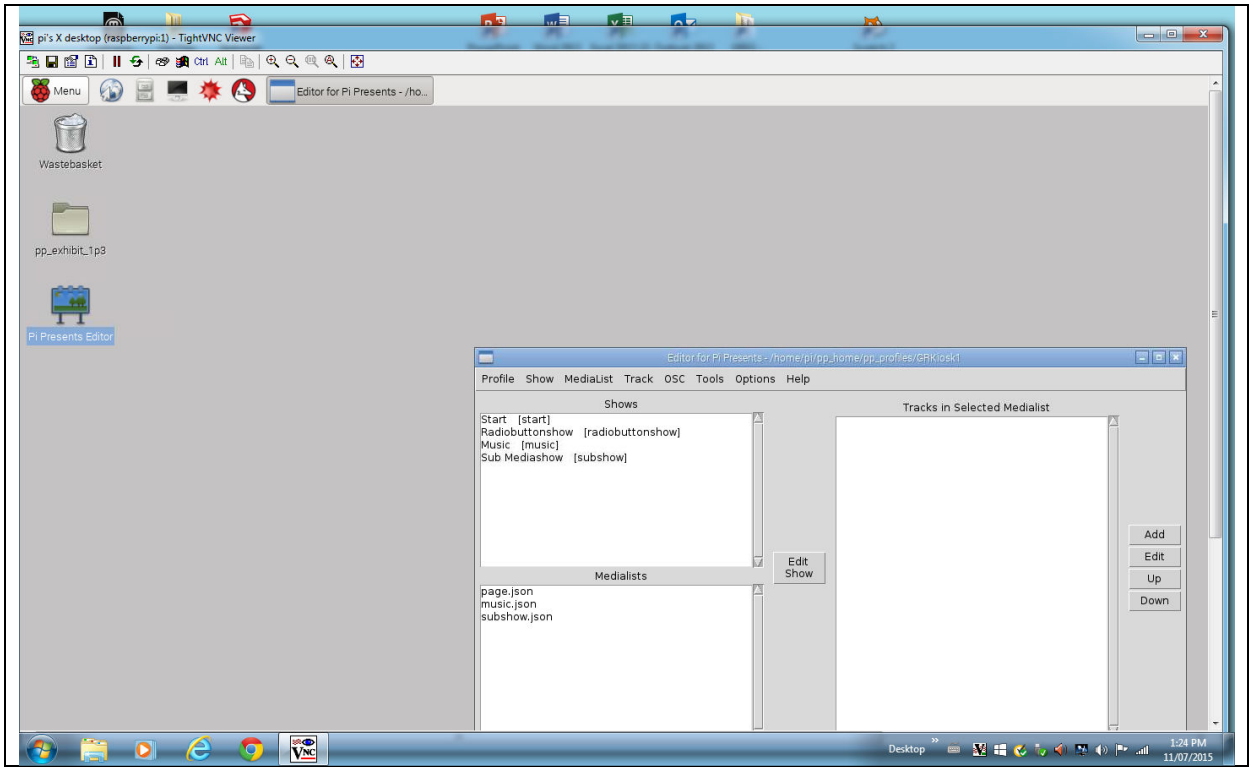


DOUBLE CLICK the profile name, in this case, GRKiosk1. Another widow will be presented. See below

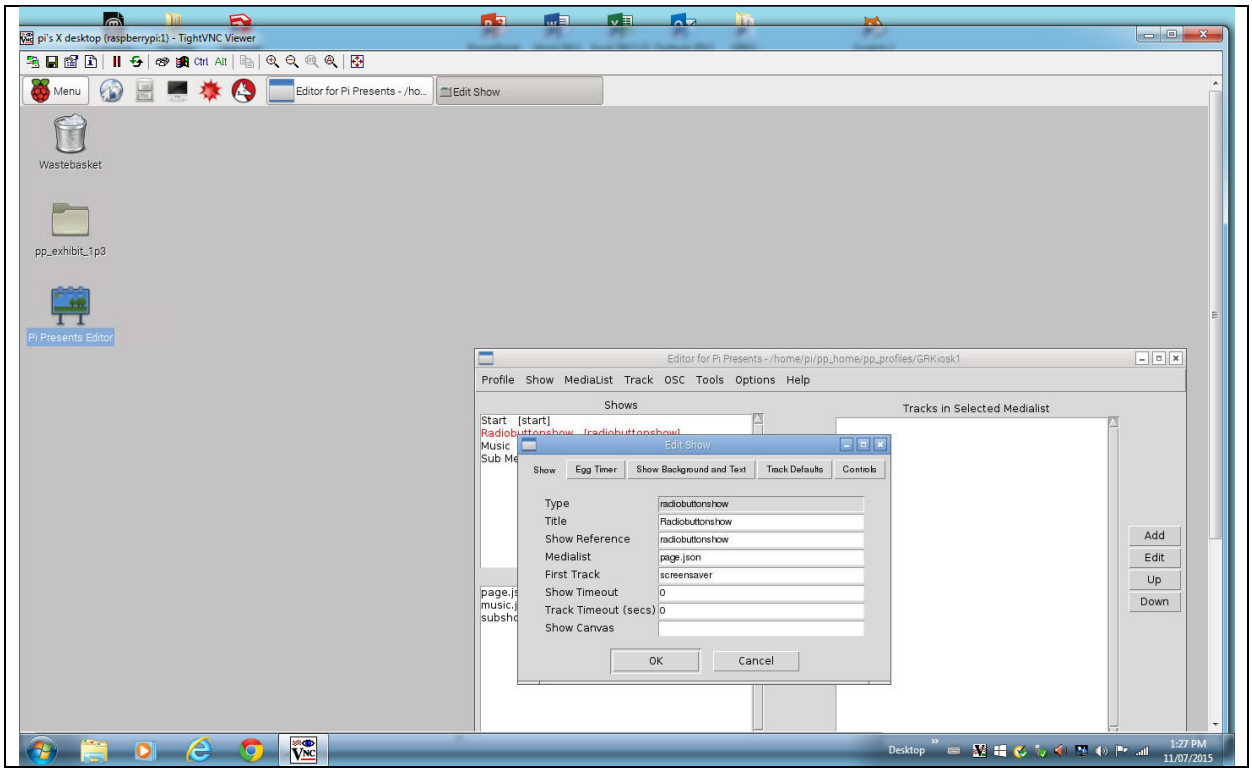


Click OK

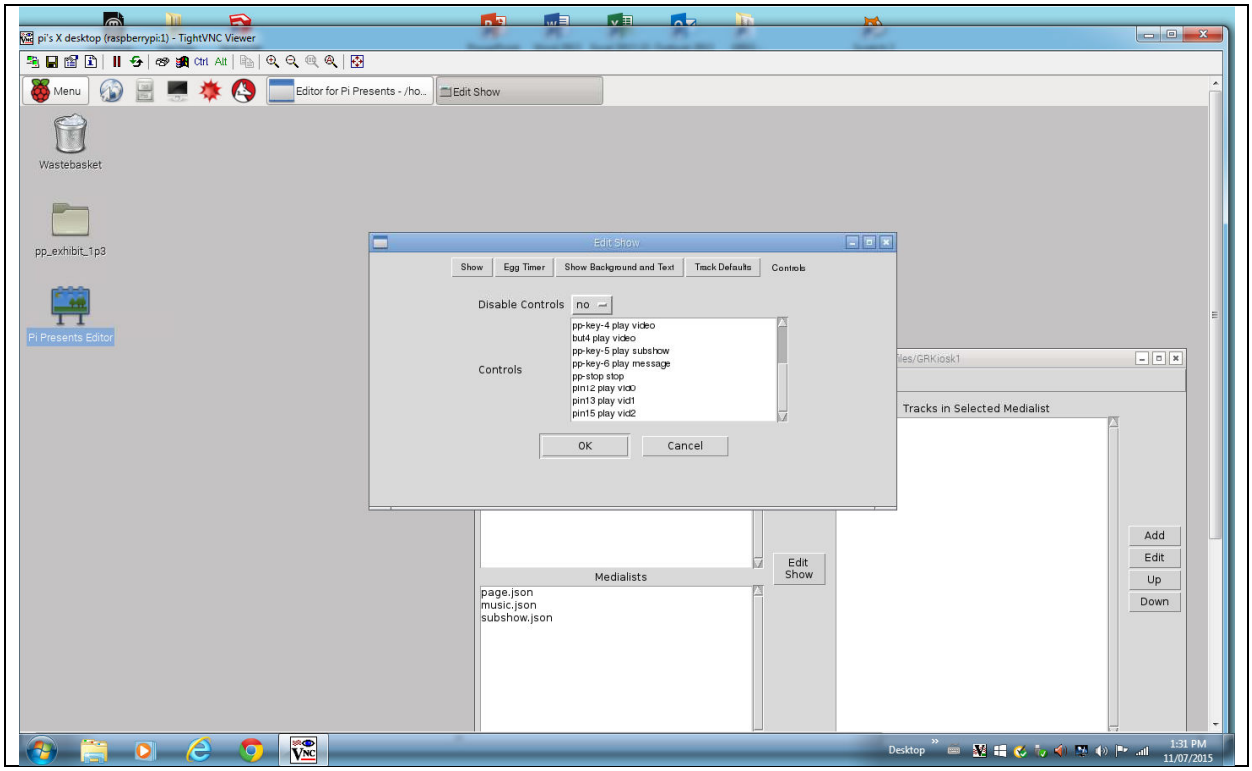
You will then be presented with the widow below



Click Radiobuttonshow to highlight it. Then click the Edit Show button. This produces an Edit Show window. See below.



Select the Controls tab. See below.



What you are looking at is a text editable window. This is where you will add the text necessary to make the pin events, that have been given symbolic names (pin12,pin13,pin15) in gpio.cfg, play the videos (vid0,vid1,vid2) in the media directory. Most of what is contained in this text file was brought in when the profile was generated by using “New from Template” and selecting Radiobutton Show. The three new text lines that were added are

Pin12 play vid0

Pin 13 play vid1

Pin 15 play vid2

Thus when one of these three GPIO pins is grounded the associated video is played.