RPi Workshop

1. How to boot up the Pi and bring up the Graphical User Interface (GUI).

2. How to use the Command Line Interface (CLI)

3. Entering commands into the in-built Python Interpreter

Setting up your Raspberry Pi

Task 1 : Connecting up the Raspberry Pi
The HDMI and USB ports are connected up as shown in the photo below.
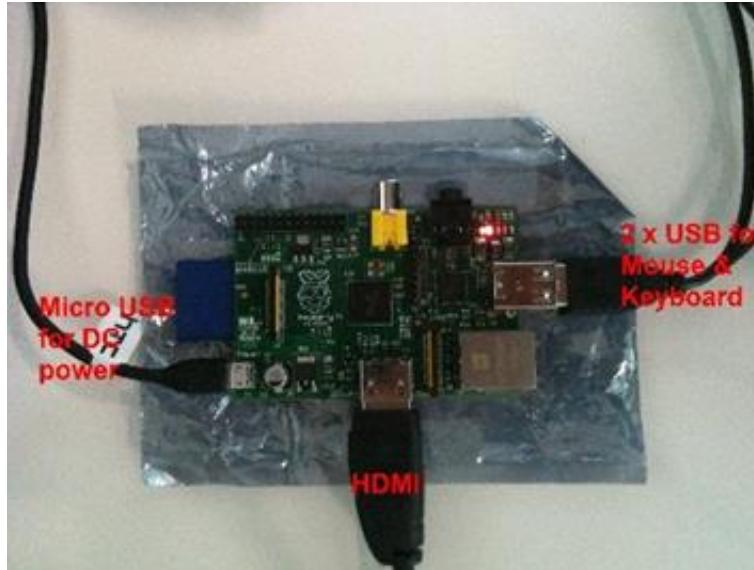
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Task 2 : Booting up the Pi
At the raspberrypi login prompt enter **pi** and for the password enter **raspberry**
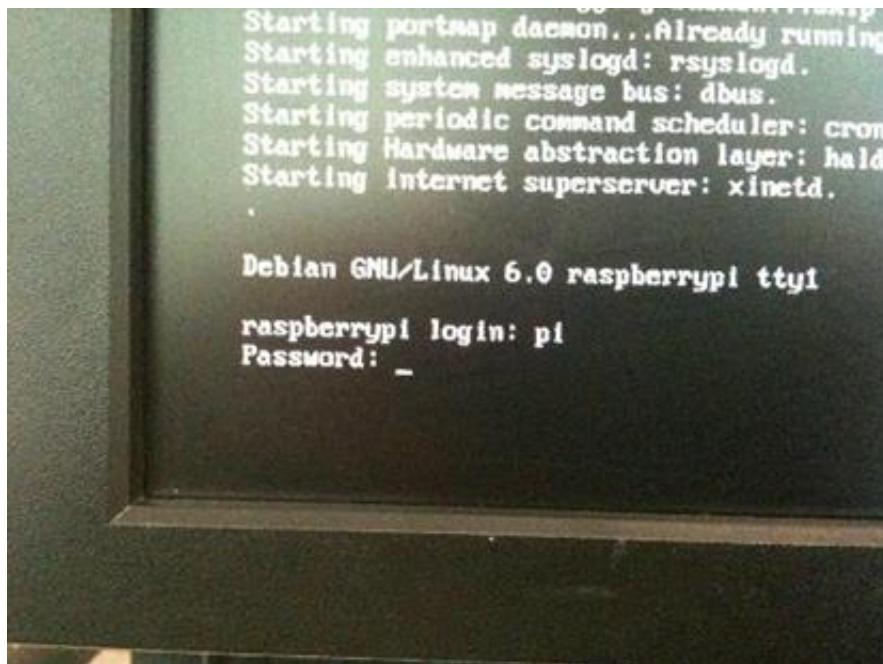
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Task 3 : Start the Graphical User Interface
Type **startx** at the $ prompt.


```
Last login: Thu Jan  1 01:00:48 BST 1970 o
Linux raspberrypi 3.1.9+ #90 Wed Apr 18 18

The programs included with the Debian GNU/
the exact distribution terms for each prog
individual files in /usr/share/doc/*/copyr

Debian GNU/Linux comes with ABSOLUTELY NO
permitted by applicable law.
Date and Time are unknown - using 2012-05-
Correct the date and time using e.g: sudo
pi@raspberrypi:~$ startx_
```
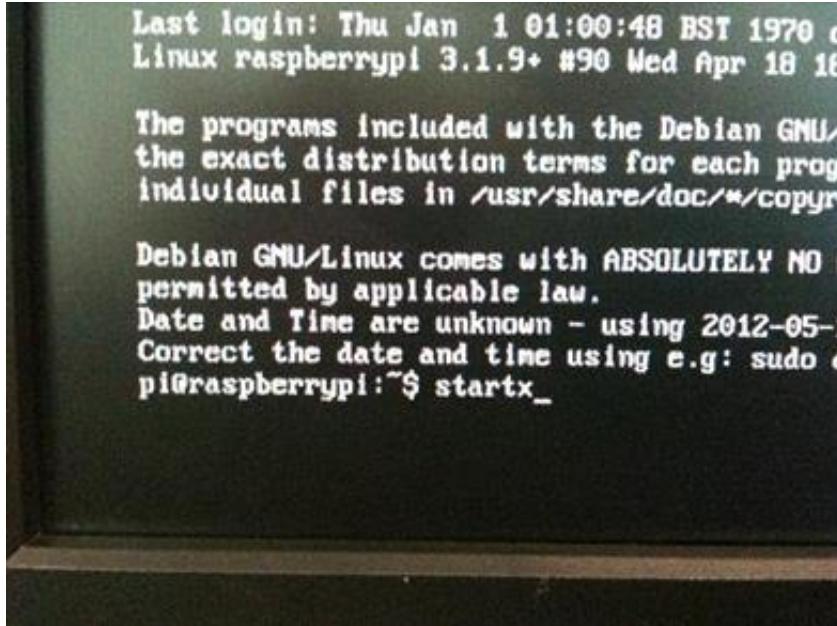
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Task 4 : Explore start menu from on the Desktop
Find a text editor program. Create and save a text file.
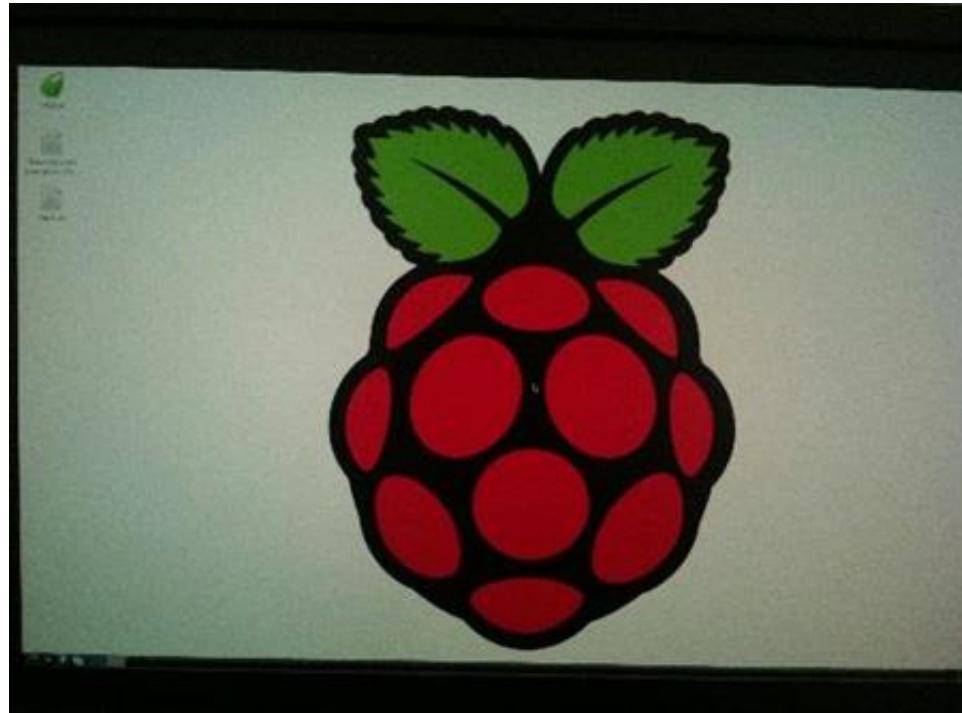
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To find out how to use commands without using the Internet, use info (short for information).

Type in:- info

Type ls now and then use cd to change directory
Type cd Desktop to go to the Desktop folder for example.
Type cd .. to go back to /

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Other useful commands include:-

free - to show how much memory is available.

df / - Show how much disk space is used.

hostname -I - Show your IP address. Try this command with your network cable connected and disconnected to see the difference.

lsusb - show what is plugged into the USB port. Try this command with your mouse connected and disconnected to see the difference.

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Step 5: Commands in Python

To talk to the Pi in Python, open a terminal window and type in:-

python

Next type in the command:-

print "Hello" and press 'Enter'. Python then returns the message Hello. Next type
1==1 and press 'Enter'. Python then returns the message true. What about 2<1?

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Type a=input("Enter a number: ") and press 'Enter' and Python prompts for a number to be entered. Enter a number a press 'Enter' again and Python returns the number that was typed in.

Finally type print str(a) + " and " + str(a) + " is " + str(a+a) and Python returns the number added to itself.

Roles for the task

In your teams of three people per Pi, for this task, you'll need:-
1. A hands-on hardware engineer to take responsibility for connecting the RPi up and getting it working. If your Pi is working they can then read out the commands to be entered.
2. A programmer (to do the typing) and control the RPi interface using a mouse and keyboard.
3. A project co-ordinator to plan each step in the task, note any issues and answer the questions at the end.

Any questions?

In your teams try and answer the following questions

1. The name of a pre-installed text editor program.
2. The name of a browser application.
3. The path to the Desktop folder. (hint: use a CLI)
4. The IP address of your Pi
5. The name of the plugs to connect in the headphones and the LAN cable.
6 In python, what is 1!=2 and 1==2? what if you change the and to an or?