Operating System lab

Assignment # 1

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Ubuntu installation:

Requirements:

Requirements are basic! Ubuntu has been designed keeping in mind **most** hardware that abounds, so it is highly likely that if your hardware is not too uncommon, nonetheless, you should check if your hardware works with Ubuntu and meets the minimum system requirements.

Standard installation

If you want to install Ubuntu on your personal desktop/laptop either sharing the computer with Windows or as the only operating system, this is probably what you want to do, and it has never been easier! The standard Ubuntu desktop installation uses a Graphical Install, which is meant to help you through the installation process in a very small number of easy steps. To get the installer and to prepare Windows to share the computer with Linux, you will need to do the following:

⑩   **Obtain an installation LiveCD**. The LiveCD (really a DVD) is a **fully functional Ubuntu environment**, and it allows you to get a taste of Ubuntu on your machine by using a Live session! If you downloaded a DVD image (.iso file), you can burn it to a standard DVD.
⑩   **Prepare Windows to share the computer.** There are three things to do.

(1) Back up Windows on a bootable USB drive. There are instructions on the Microsoft web site. This step is a good idea whether or not you install Ubuntu.

(2) Disable Fast Startup. Windows 8.1 and presumably future versions have a feature called Fast Startup. When it is enabled -- and it is enabled by default -- Windows shuts down in a hybrid state, somewhere between a full shutdown and a "sleep" state. The dual boot manager which Ubuntu will install (called grub) does not presently know how to start Windows from this hybrid state. You must therefore disable Fast Startup if you ever want to use Windows again after

installing Ubuntu. Just how to do that is best left to the documentation of your particular version of Windows. But do not fail to do it, or you will never boot Windows again.

(3) Change the boot order. Chances are that if you simply put the LiveDVD in the optical drive and turn on the computer, it will go straight to Windows and totally ignore the DVD. That is because the computer came with the hard disk ahead of the DVD in the boot order. The boot order in machines made after about 2012 is set in something called the UEFI (Uniform Extensible Firmware Interface). You must edit the UEFI to change the boot order. Windows has a UEFI editor; how you get to it is different for Windows 8 and 8.1 and will probably be different again for 10. This editor is well hidden in 8.1, but can be reached by a series of steps beginning from PC Settings (the cogwheel) on the start page. From there go to "Update and Recovery" then "Recovery" then "Advanced startup" then "Restart now" then "Troubleshoot" then "Advanced options" and then "UEFI Firmware settings". Once you have reached this editor, use the right arrow key to move across to the "Boot" tab and then follow instructions on the screen to move the optical drive to the top of the boot order. It is also a good idea to enable booting from USB. On the Security tab it is possible to disable **SecureBoot**. It should not be necessary to do so, but if you have trouble getting the boot to start, come back and disable **SecureBoot**. (Do NOT be tempted to enable "Legacy mode". If you do, Windows won't work at all and Linux will work poorly.)

❿   Install Ubuntu.
 The hard part is behind us. Turn off the computer. Put the DVD in the optical drive and start the computer. After considerable whirring of the DVD, the opening screen appears and you have a choice of whether to try Ubuntu or proceed directly to installing it. It is probably a good idea to try it to check that the hardware, and in particular the modem, is supported. When ready, click the button to install. You will need to answer a number of routine questions and then partition the hard disk. You have a choice of ways to do this, but unless you want to do something fancy and know very well what you are doing, the first option will be just fine. Choose it and a screen opens with two bars of equal length, the one on the left representing the size of the Windows partition, and the one on the right, the size of the Linux partition. You adjust the allocation by dragging the inner edge of one of the bars. In deciding how to allocate the space, bear in mind that all Windows programs have to reside in the Windows partition and all Linux programs must reside in the Linux partition. Windows programs cannot access files in the Linux partition, but Linux programs can to some extent access files in the Windows partition. For example,LibreOffice Writer installed in the Linux partition can edit files in the Windows partition. Once the disk is partitioned, the installation is soon finished. Remove the DVD, restart the computer, and you should be offered a choice between starting Windows or starting Ubuntu. Try one, then restart and try the other. Ubuntu version 15