

THE ADSTOCK SCIENCE CLUB



In my day job, for those of you who don't know, I fix PCs, get rid of pesky viruses and do anything else that may need sorting out with sick computers, I sometimes get asked questions relating to some of the problems I am solving; for instance, when a computer won't "Boot up", why is it called booting up and not starting up? Related to this is when the Operating System or OS needs to be re-installed, what is an Operating System?

Well at our last Science Club meeting we had a nice chap, Andrew Smith, over from the Open University Faculty of Mathematics (which also includes Computing and Technology). He gave us a very interesting, and crucially a non-technical talk, about a particular type of Operating System called Linux.

But before I go into more detail about Linux, I should firstly give you some answers to the above questions. Let's take the 2nd question first, what is an Operating System? An Operating System is a program running on the computer that is in charge of just about everything the computer does. For instance when you type something on your keyboard or click a mouse button the OS is what causes that character to be displayed or that click to activate a button on your screen. The OS manages all computer activity and without it nothing would happen. Of course the OS does a lot more but you get the picture. One OS most people have heard of and use is Windows you may also have heard of OSX which is the OS for Apple computers.

So why do we say Booting Up instead of starting up? This term comes from an old expression "to pull oneself up by ones boot laces or boot straps". Because the OS such as Windows or OSX is huge, it has to be loaded up in stages and this is done by a smaller "Boot" or "Boot strap" program which has the job of pulling the full OS off the hard drive and loading it into the computer's solid state memory called RAM (Random Access Memory) in an orderly fashion.

Andrew began his talk on Linux by drawing our attention to just how many devices use Linux in one form or another. He explained that there are currently over 800 different versions of Linux out there, from powering mobile phones to web servers and even specialist versions used by some for hacking into other systems. Linux, which has its roots in an older OS, UNIX, was created by Linus Torvalds from Finland when he was about 22. He developed Linux so that he could complete his PhD. He released Linux to the world for free, as an "Open Source" program allowing everybody free access to download and use as they pleased. Linux is also being used in many hidden systems such as process and control systems for lifts and other devices.

One of the most popular versions of Linux is UBUNTU which was created in Africa, the name means "Humanity to others".

Lastly Andrew asked if any of us could think of a super computer running Windows or OSX. Err, no we couldn't. However Google started by creating just such a beast, Beowulf, from a rack full of old PCs running a version of Linux. Why, you wonder, if Linux is so good and out there in vast numbers, why aren't we all using it? I often wonder this myself. All I can think of is that Microsoft and Apple have great sales and marketing departments!

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