CSE 391
Lecture 10

Do anything from anywhere – tools to free your choice of OS

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http://www.cs.washington.edu/391/

Lecture summary

- **Remote connections** – get to your application or resource from anywhere

- **Local options** – get your application or resource to work on your setup

- Figure out how to do what you want to do in a new environment

- Course Evals – Don't forget to fill these out!

Remote Connections: **to a linux machine**

- You've seen remote connections **to a Linux machine** in action
  - *Departmental attu.cs.washington.edu Linux server*
  - Can use **ssh** (or **PuTTy**) from anywhere – independent of location ***and OS***

Remote Connection: to a Windows machine

What about remote connections **to a Windows machine**?

- RDP – Remote Desktop Protocol, Enables remote connections to a Windows box from anywhere, independent of OS.

  - **From Linux** – **xfreerdp** or **rdesktop** commands, for example for user rea:

    - **xfreerdp /d:CSEPCLAB /size:1280x1024 /u:rea /v:vdilab12.cs.washington.edu /sec:nla**

    - Note: On the CSE VM you will need to install xfreerdp . If you try to run xfreerdp it should ask you if you want to install it, say yes.

  - **From Windows** – **Remote Desktop Connection**

  - **From Mac** – "Microsoft Remote Desktop" App from Apple store

  - **Note**: You must have an account on the Windows machine in question in order to connect to it remotely.

CSE Virtual Windows nodes

- For students with CSE accounts: The **CSE department** offers a set of hosted virtual machine nodes, imaged similar to Windows machines in basement labs, remotely accessible via RDP for people with CSE accounts. YOU MUST USE YOUR CSE Windows PASSWORD!

  - Overview: http://www.cs.washington.edu/lab/services/vdi/

  - Pick an available node from the list of currently available nodes: http://vdi.cs.washington.edu/vdi/

  - **Need to use the right domain!!**   CSEPCLAB\<username>

  - **Note:** Windows and Mac users must now install the Husky OnNet Package before doing a remote desktop from a non-CSE (personal) machine See: http://vdi.cs.washington.edu/vdi/ for more details.

Non-remote options: linux on Windows?

- **Cygwin**: unix style environment within Windows
  - https://www.**cygwin**.com/
  - "package manager" is part of the install file
  - Provides the unix-like directory structure
    - Home directory is /home/<WindowsUsername>
  - Your actual windows directory structure is located at /cygdrive/<driveletter>
- Enables: quick use of linux style tools in a terminal environment in Windows
- **Windows 10:** now allows you to install a bash shell command line

Non-remote options: **Windows on linux?**

- One barrier to switching to Linux: lots of apps are built for Windows
  - <Insert app here> that I use all the time isn't ported to Linux! ☹

- **Wine** is an attempt at solving this
  - Provides an environment to run Windows applications in Linux
    - http://www.winehq.org/
  - Open source
  - Not perfect, but many people have good success with major programs
    - Many successfully run WoW, MS Office, TextPad…

- Lots of online tutorials / message boards / instructions to get your favorite app working in Linux

The More You Know™

- Another barrier to using Linux as your main Desktop OS: "I don't know how to do <X> in Linux"

  - Imagine you had never seen or used Windows before. Would you somehow intuitively know how to:

    - Change your desktop background/resolution?
    - Install new graphics card drivers?
    - Change system settings? (Control Panel? What's that?)
    - Etc etc…

  - So how do you figure it out?

    - Ever read the Windows manual? (hint: there is no "the" manual)
      - "Windows 7 Product Guide" -- 140 pages, considered very high level
      - "Windows 7 for Dummies" -- 432 pages
      - "Windows 7 Bible" -- 1248 pages

  - What do *you* do when you don't know how to do something?
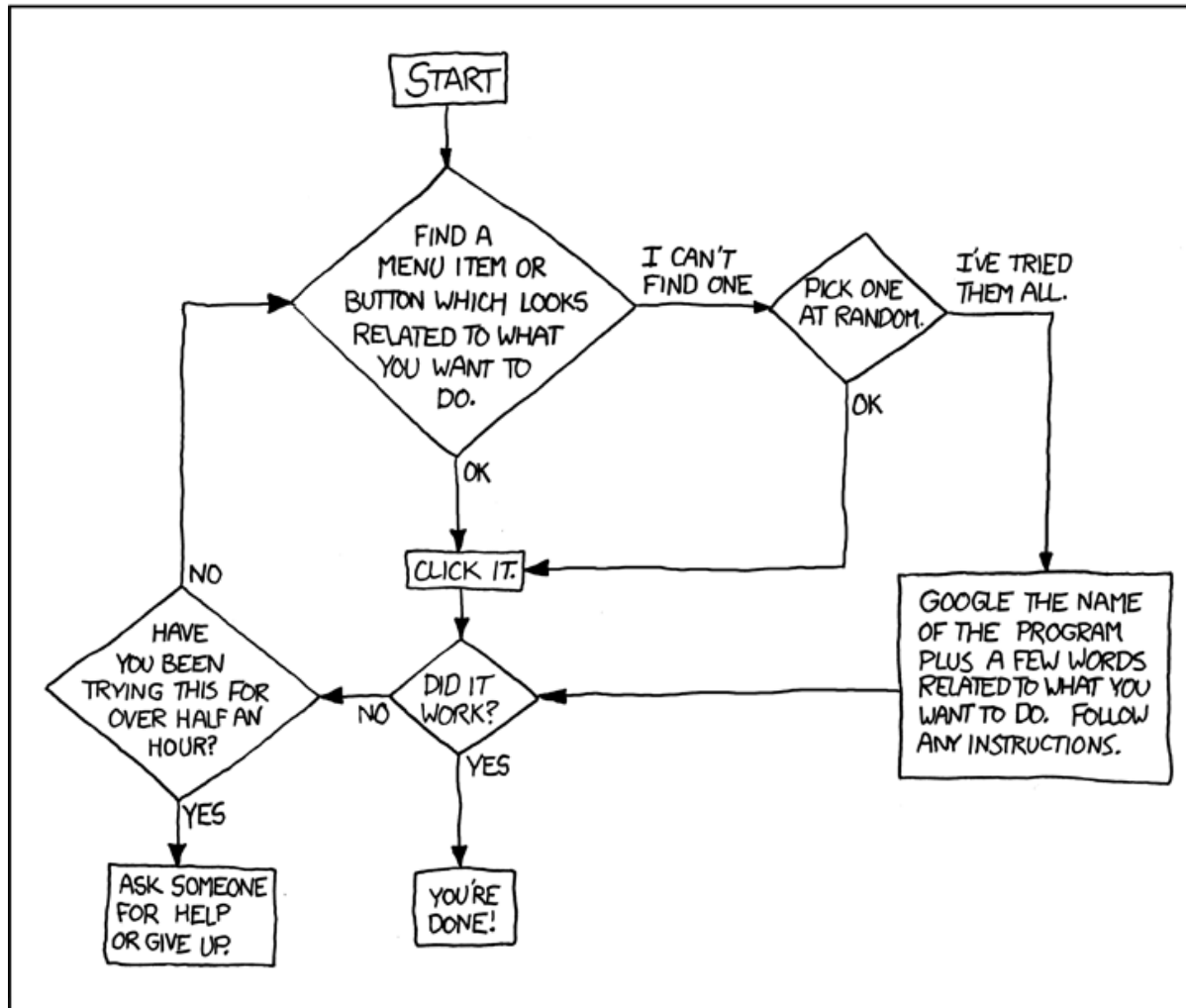
Courtesy XKCD

The More You Know™

- Step 1: Try and explore intuitively
  - Hey, you're CSE majors. Where would *you* put that setting if you were designing the system?
- Step 1.5: Look in short, directly relating references
  - Man pages, quick start guides, the TOC in the manual (if exists…)
- Step 2: If that fails, search online!
  - Likely someone else has wanted to do what you want, and *also* couldn't figure it out
    - And, likely they've posted to a discussion board and had some guru give a detailed response
    - Or, a FAQ has been written somewhere that tells you how

Mix and match

- Don't think of Linux/Windows as a binary choice
- These tools provide a continuum of options
  - Windows
  - Windows + Cygwin
  - Windows + Cygwin + Linux VM
  - Linux + Windows VM + Wine
  - Linux + Wine
  - Linux

- Can choose the setup that best suits your situation and application requirements

The choice is yours

- To clarify: the purpose here was not to say "you should switch to Linux as your main OS"

  - But, you should know what tools and options exist, and be able to use Linux as your main OS if desired

  - You should be able to survive if someone locked you in a closet with a laptop that had Fedora or Ubuntu

- Wrap up discussion:

  - What tools seem the most useful that you learned this quarter?

    - What tools seem like they address important areas, but need to be better?

  - From your experience, are there other tools you think you'd mention in this course, tools CSE majors should be aware of?

    - Linux commands/tools, programming development tools…