CMPUT 333 SECURITY IN A NETWORKED WORLD

LAB ASSIGNMENT 1 : INTRODUCTION TO SCREEN

PROBLEM

- Cracking passwords/ciphers/etc. typically takes a lot of computation time

- Can you run a program (like Jack the Ripper — See Assignment 1 Part 4) for a long time without
  - tying up personal machine
  - having to maintain an ssh connection to an external machine

We need a new tool!

NEW TOOL: SCREEN

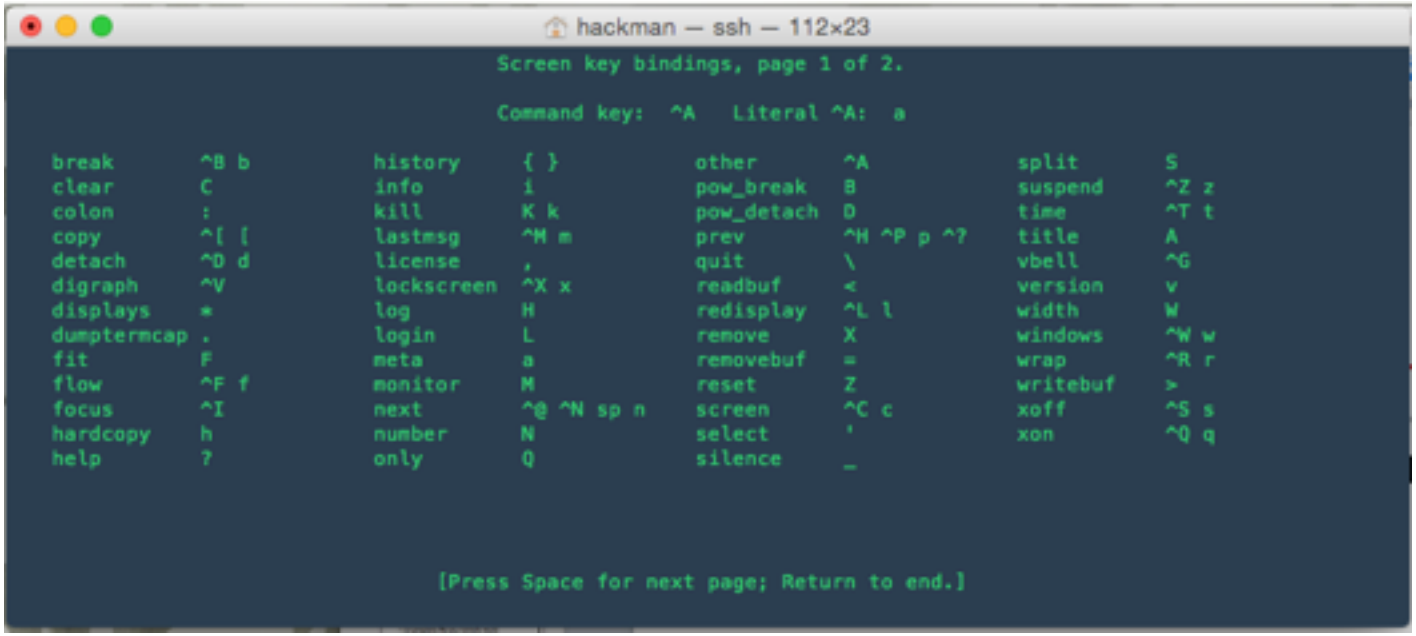
- Screen is a program for Unix-like systems (ie. the lab machines)
- Allows you to multiplex your terminal
  - from one terminal, you can create other terminal sessions
  - you can detach and reattach these terminal sessions at any time
  - detached terminal sessions persist even when the original terminal session ends
  - a new terminal session can reattach to detached terminals later

RUNNING SCREEN

- In a terminal, run the command screen
- You may get some splash text telling you that you are now running screen. Pushing any key will give you a command line
- it may look like you are where you started but you are now in a *new* screen terminal session
- From here, you can run commands like you normally would. But you also have the power of screen at your fingertips.

GETTING HELP

- All screen commands start with Control-a (We will notate this as ^A as is commonly done)
- To start, you can type ^A ? for help. This will show a list of screen commands
- Do not keep holding Control after pushing a



CREATING WINDOWS

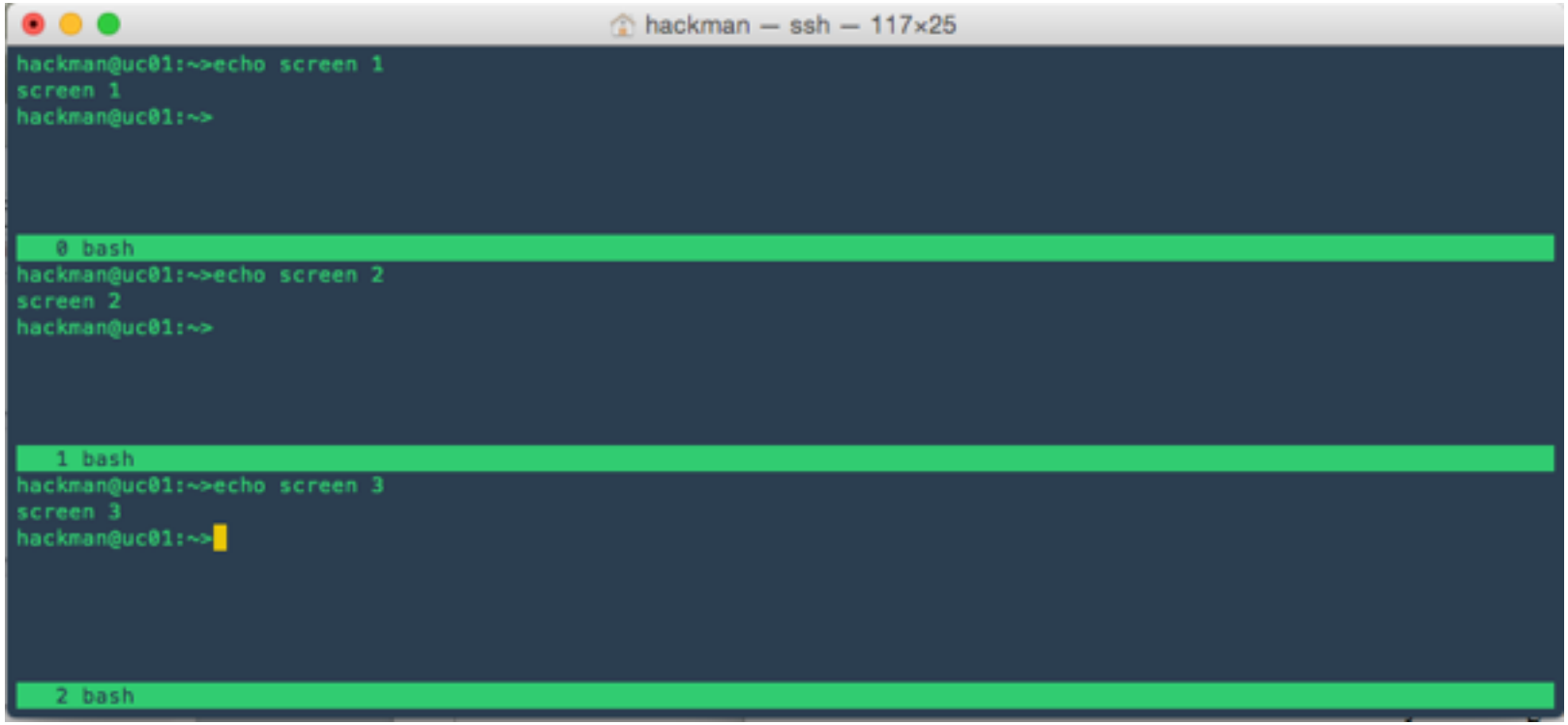
- Can create a new terminal window by typing ^A c (c is for create)
- To switch between terminals type ^A n (n is for next)
- Try echoing different text on the screen in each terminal and switching between them to see that you do in fact have multiple terminals.

NAVIGATING

- View a list of all windows with command ^A w
- Other useful navigation commands:
  - ^A “ gives you a navigable list of windows
  - ^A 0 to ^A 9 let you flip to a specific window

SPLITTING WINDOWS

- Can split a window to show several windows at the same time but this is beyond the scope of this little tutorial.



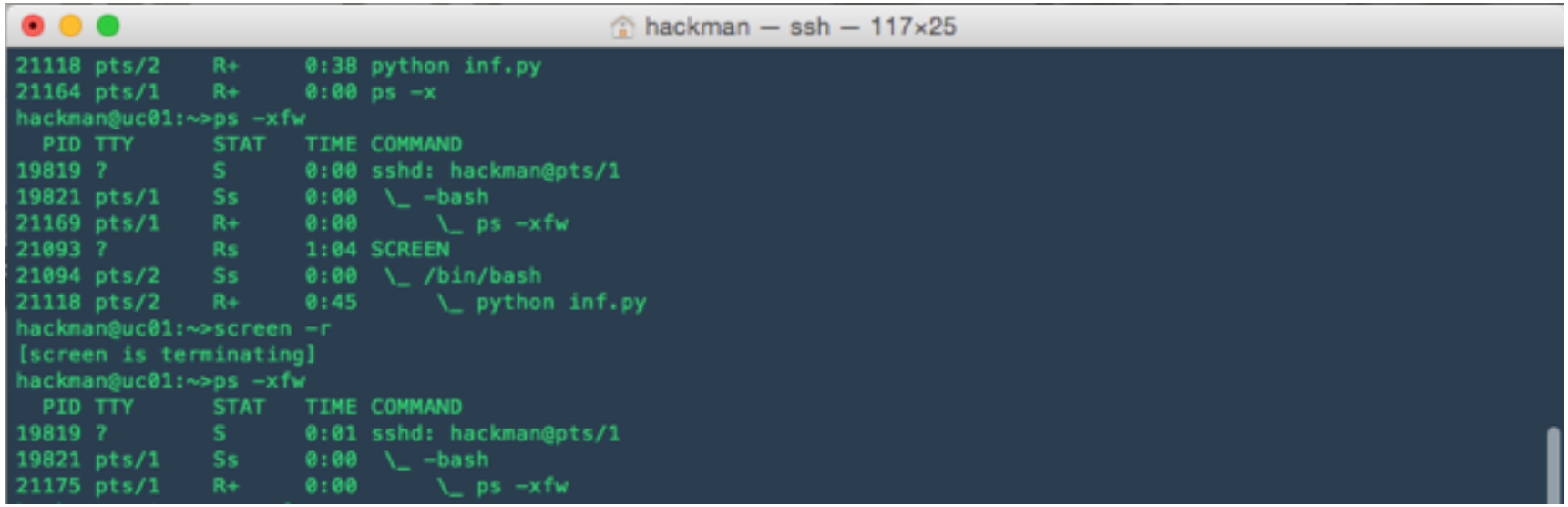
EXITING SCREEN

- to get rid of a screen window type exit or use the ^A k command (this will ask you to confirm that you want to kill the window)
- If you exit or kill all your open windows, your screen session will automatically exit, returning you to your original terminal session

DETACHING

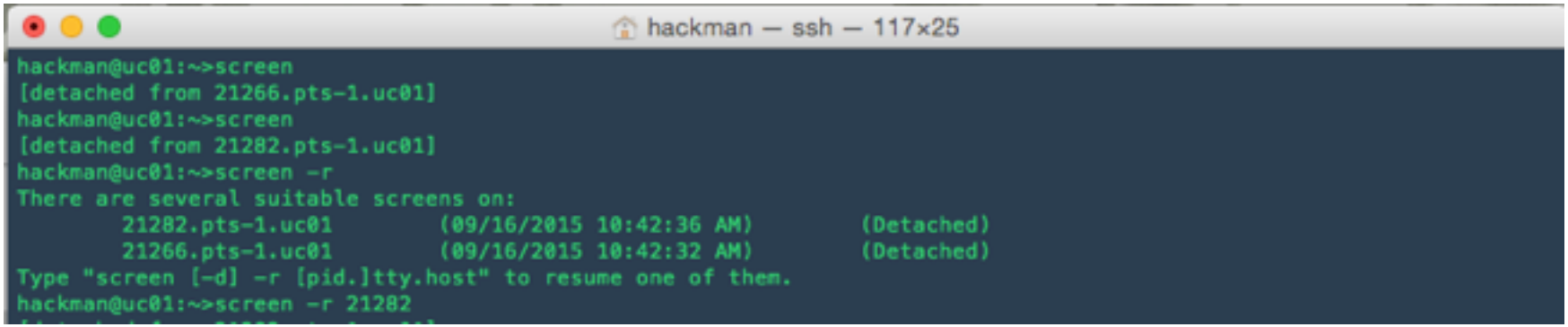
- When in screen, you can detach your screen session (which contains all the windows you created/opened) using the ^A d command
- This takes you back to your initial terminal session. BUT your screen session persists and is still running on the machine
- Use command ps -xf to see that your screenwindows are still there

VIEWING DETACHED SCREENS



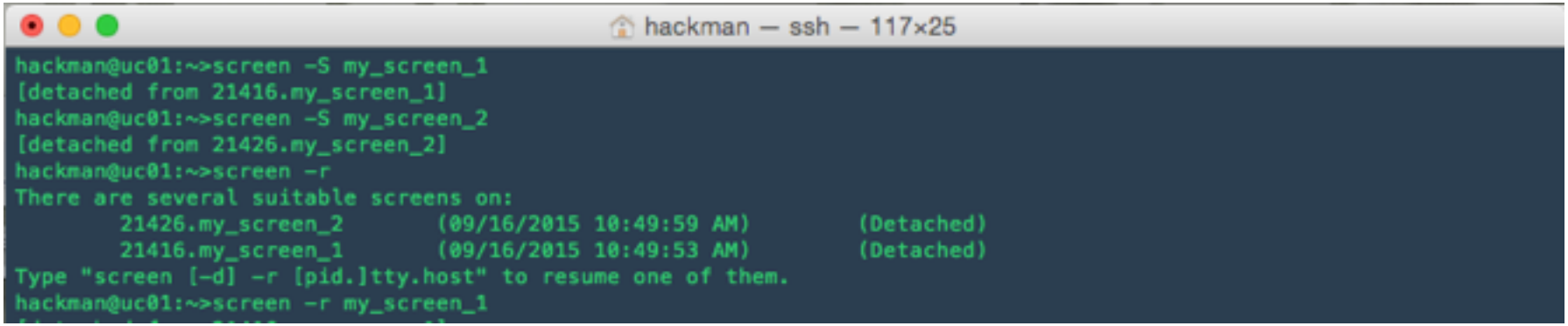
RE-ATTACHING

- You can re-attach to a detached screen session by running the command: screen -r
- If you have multiple screen sessions running, it will list all available screen sessions. Attach to a specific one by running screen -r and provide an id for the process



NAME YOUR SCREENS

- That if you frequently have multiple screens open you can name your screen sessions so it is easier to tell them apart
- Note that you won't need multiple screen session for this class but it can be useful. E.g.: a sys admin might have multiple screen sessions that correspond to different frequent monitoring tasks



NAME YOUR WINDOWS

- You can also name your windows with the command ^A a
- Again, this is likely more advanced than you need right now, but is useful to be aware of for when you do need it in the future.

PUT IT ALL TOGETHER

- Now that you know about screen, you know that can:
  - log into your lab machine (in person, or remotely via ssh)
  - open a screen session
  - run your programs for breaking a password or cracking a cipher etc.
  - detach the screen session
  - log out (or terminate the ssh connection)
  - come back later and reattach

And hopefully by the time you come back, all your work will be done!

REMOTE CONNECTIONS

- SSHing to CS in general: https://uofa.ualberta.ca/computing-science/links-and-resources/technical-support/computing-resources
- Want to SSH to your specific lab machine
- Lab machine IDs uc01…uc16: https://uofa.ualberta.ca/computing-science/links-and-resources/labs-and-room-booking/csc-1-21

USEFUL TUTORIALS

- http://www.bangmoney.org/posts/2004-03-24-screen.html
- https://www.rackaid.com/blog/linux-screen-tutorial-and-how-to/

QUESTIONS ?