

Unix System Administration

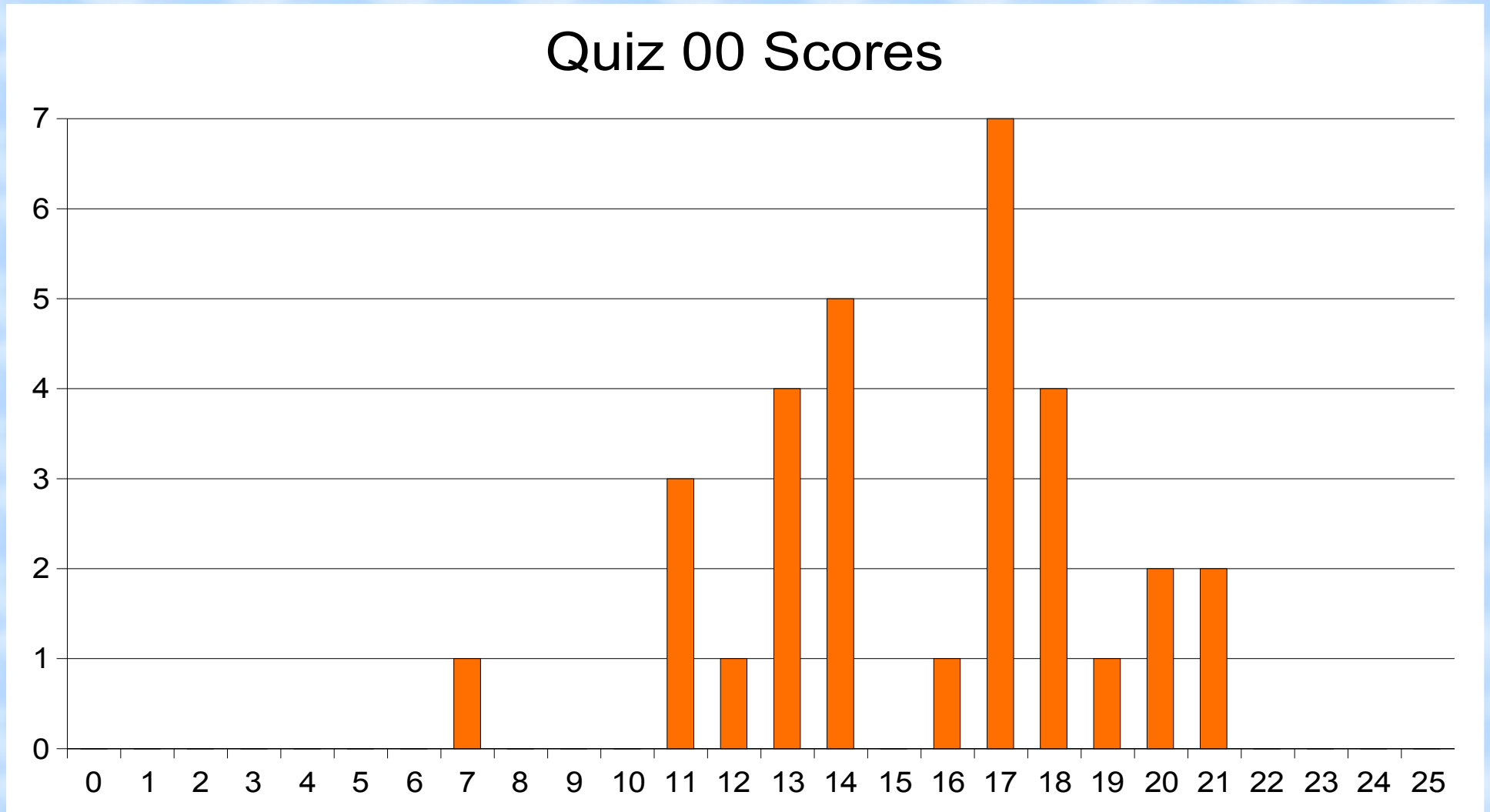
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Lecture 11 – Thursday Feb 22

CSCI 4113, Spring 2007

Quiz 00 Scores

- Average: 15.55, 62.19%



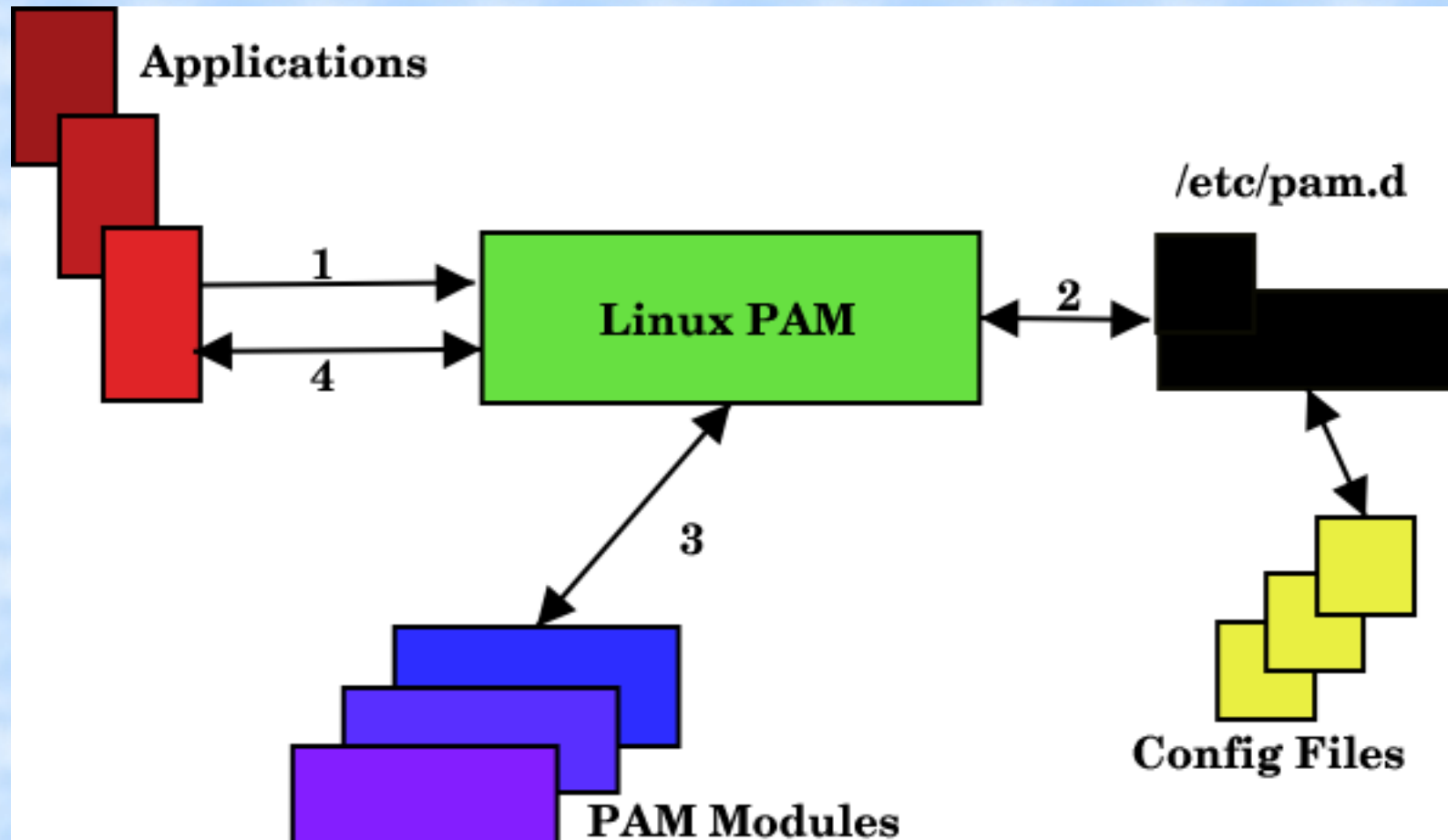
Pluggable Authentication Modules (PAM)

- Provides a generic interface to multiple auth backends
 - /etc/passwd, ldap, NIS, yp, etc
- Four module types in PAM
 - auth: validating credentials (username/password)
 - account: provides account management for non-auth things (shell, homedir, etc)
 - session: creates the environment for the user
 - password: provides means to change passwords
- All config files exist under /etc/pam.d

PAM – Modules

- Modules belong to one or more of four types
 - pam_unix belongs to **all** four module types
 - pam_nologin belongs to only **account** and **auth**
- Modules take parameters for their execution
 - Different for each module, check the docs!
- The 'control flag' is return value of the module
 - Decides whether or not PAM returns successful
 - required, sufficient, optional, include, requisite

PAM – Simple Flowchart



PAM – Other Notes

- PAM provides many modules beyond 'auth'
 - pam_access: access control lists for groups
 - pam_cracklib: checks password strength
 - and many more:
<http://www.kernel.org/pub/linux/libs/pam/>
- Also have ability to jump to or include other files
 - Allow for richer authentication and management schemes
- Programs must have written in support for PAM
 - Must have code that uses PAM's interface

Time

- Marches infinitely?
 - Not with a 32-bit counter!
- Unix time standard is with a 32-bit counter
 - Starting at the “Unix Epoch”
 - Midnight UTC January 1, 1970
 - Counts number of seconds since the epoch
- Another Y2K problem?
 - 03:14:08 UTC Jan 19, 2038 – 32-bit overflow

Time Keeps On Slippin'

- Network Time Protocol (NTP)
 - Allows for synchronization of clocks
 - Necessary for certain things to function
 - sudo, nfs, and many more
- Protocol written to deal with latency
 - Network latency when querying a time server!
 - Also tries to learn the drift of your clock
 - So it can adjust without as many queries