

# Protection and Security

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1. Express the permissions shown in the directory listing below, as access control lists.

-rw-r--r--	2	gmw	users	908	dates	PPP-Notes
-rwxr-xr-x	1	asw	devel	432	..	prog1
-rw-rw----	1	asw	users	42141	...	project.t
-rw-r-----	1	asw	devel	12314	...	splash.gif

Note: *asw* is a member of two groups: *users* and *devel*; *gmw* is a member of *users* only.

2. Not having the computer echo the password is safer than having it echo an asterisk for each character typed since the latter discloses the password length to anyone nearby who can see the screen. Assuming that passwords consist of upper and lower case letters and digits only, and that passwords must be a minimum of five characters and a maximum of eight characters, how much safer is not displaying anything?

3. After getting your degree, you apply for a job as director of a large university computer center that has just put its ancient mainframe system out to pasture and switched over to a large LAN server running UNIX. You get the job. Fifteen minutes after starting work, your assistant bursts into your office screaming: "Some students have discovered the algorithm we use for encrypting passwords and posted it on the internet." What should you do?

4. Explain how the UNIX password mechanism differs from encryption.

5. Name one disadvantage of a polymorphic encrypting virus from the point of view of the virus writer.

6. What is the difference between a virus and a worm? How do they each reproduce?