Spring 2009 CSC 322 - C Programming and UNIX - Assignment 9

Due date: Wednesday, 4/1, 2009, 12 pm. Check necessary files into repository.

Create a new subdirectory **LabTask9** for this exercise. Store the programs in this subdirectory.

Exercise 9.1

- What user information stored in the **/etc/passwd** file?
- What does the following program output?

```
#include <stdio.h>
#include <sys/types.h>
#include <pwd.h>

int main(int argc,char *argv[]) {

    struct passwd *P;

    while ((P = getpwent()) != NULL) {
        if (P->pw_uid == geteuid()) {
            printf("%s\n",P->pw_name);
        }
    }
    return(0);
}
```

- What system call is designed for reading a password from a user?
- After a call to **uname**, what information is stored in the **struct utsname** pointed to be the parameter?
- What system call can be used to get the IP address of a machine?

[5 points]

Exercise 9.2

- What is the difference between the return values of the **getuid** and **geteuid** system calls?
- What advantage do the **execlp** and **execvp** calls have over **execl** and **execv**?
- The **kill** system call sends a signal to a specified process. How can that process be prepared to receive the signal?
- Which system call can be used to limit the amount of CPU time a process can use? Which system call can be used to find out how much CPU time the process did use?
- Write a program that starts a child process for each of its integer command line arguments. The child processes simply sleep for the time specified by the argument, then exit. After starting all the children, the parent process must wait until they have all terminated before terminating itself.

[5 points]