California University of PA

Dept. of Computer Science, Info Systems, and Engineering Technology

ACET440 Computer Networking

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= Lab Report =

Lab 4 Client: Data Share

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I. Procedure

Open the virtual desktop and acquire the putty .exe from the putty website (*https://www.chiark.greenend.org.uk/~sgtatham/putty/latest.html*). Enter Draco1.calu.lcl in the host name and set it to SSH. When prompted for a login use your pennwest email and password, take care to enter the password correctly, it will not show the characters or how many are inputted (*Figure 1*). Either import the FuncsLab4.c, Lab4.h, Lab4.c, and Makefile, or create blank files using the touch command and copy each file in using nano. Once all files are in the directory use the make command to compile and get the Lab4 executable, use the ./Lab4 command to execute the program. There is a 5 second down time on the server's side every 15 seconds, so if there is an error wait at least 5 seconds then re-input ./Lab4. Proper output should show the average GPA, average age, active users, and a log of the last three days number of users (*Figure 2*).

II. Team Member Contribution

All team members actively contributed to all parts of the programs with Andrew Bissell in charge of setup, the start of the average/active user output, and Makefile creation. Noah Proctor oversaw the login statistics and final completion of the FuncsLab4.c functions. Joshua Hughes oversaw the modularization of the final file into three files (Lab4.c Lab4.h FuncsLab4.c) and co-leader of the login statistics. Every team member conducted tests, proper output of data checks, proof-reading of code/report, and completion of the Lab4 report.
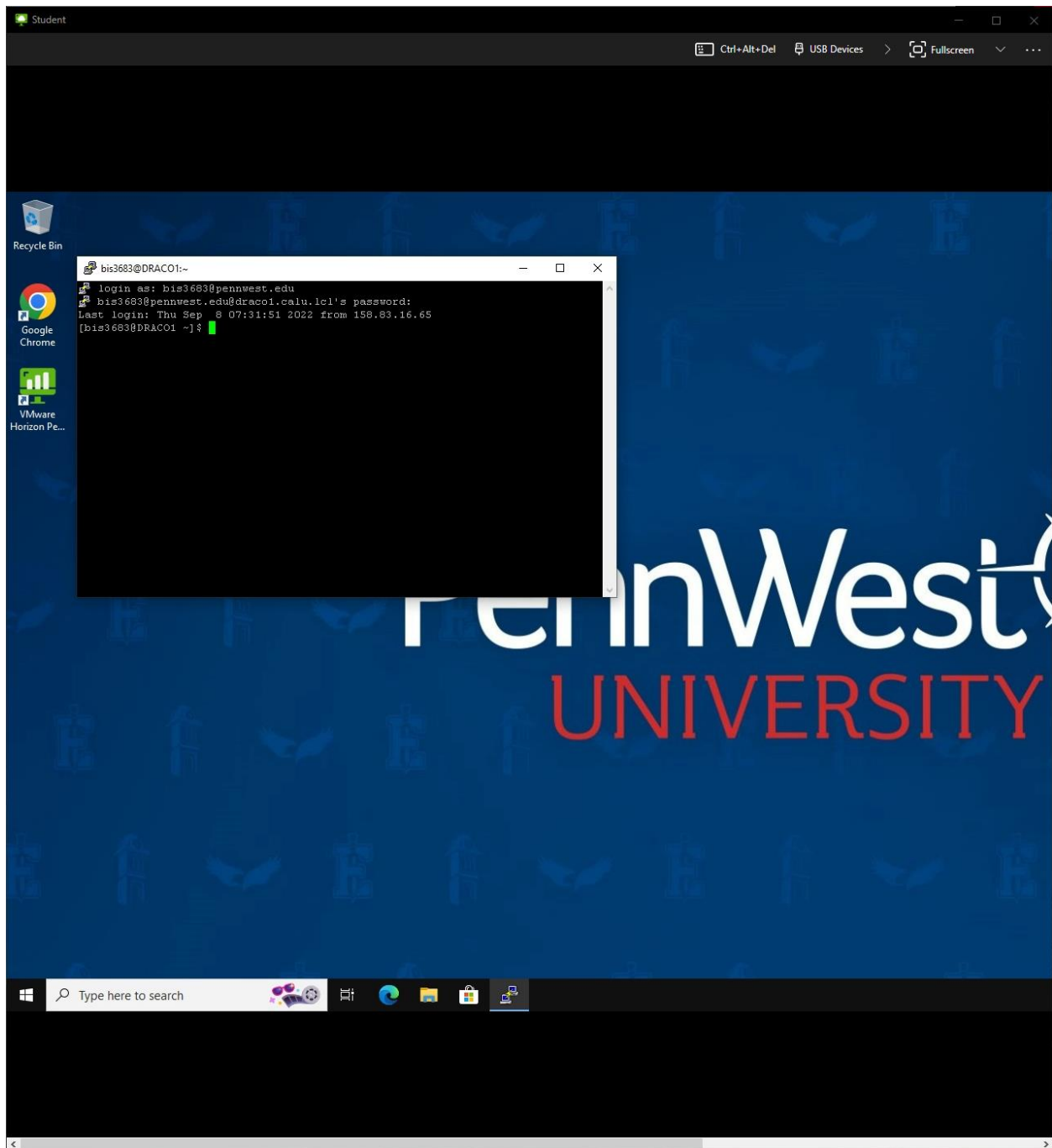
Figure 1: Logging into Draco1

```
[bis3683@DRACO1 Lab4]$ ls
FuncsLab4.c  FuncsLab4.o  Lab4  Lab4.c  Lab4.h  Lab4.o  Makefile  Test
[bis3683@DRACO1 Lab4]$ rm FuncsLab4.c FuncsLab4.o Lab4 Lab4.c Lab4.o Lab4.h Makefile
[bis3683@DRACO1 Lab4]$ ls
Test
[bis3683@DRACO1 Lab4]$ touch FuncsLab4.c Lab4.c Lab4.h Makefile
[bis3683@DRACO1 Lab4]$ ls
FuncsLab4.c  Lab4.c  Lab4.h  Makefile  Test
[bis3683@DRACO1 Lab4]$ nano FuncsLab4.c
[bis3683@DRACO1 Lab4]$ nano Lab4.c
[bis3683@DRACO1 Lab4]$ nano Lab4.h
[bis3683@DRACO1 Lab4]$ nano Makefile
[bis3683@DRACO1 Lab4]$ ls
FuncsLab4.c  Lab4.c  Lab4.h  Makefile  Test
[bis3683@DRACO1 Lab4]$ make
gcc -c Lab4.c
In file included from Lab4.c:11:0:
Lab4.h:33:1: warning: data definition has no type or storage class [enabled by default]
 Students_Averages(struct students *z);
 ^
Lab4.c: In function 'main':
Lab4.c:37:7: warning: assignment from incompatible pointer type [enabled by default]
     z = (struct students*) shmat( shm_id, 0, SHM_RDONLY );
       ^
Lab4.c:38:10: warning: cast from pointer to integer of different size [-Wpointer-to-int-cast]
     if ( (int) z == -1 )
          ^
Lab4.c:47:5: warning: passing argument 1 of 'Students_Averages' from incompatible pointer type [enabled by default]
     Students_Averages(z);
     ^
In file included from Lab4.c:11:0:
Lab4.h:33:1: note: expected 'struct students *' but argument is of type 'struct student *'
 Students_Averages(struct students *z);
 ^
gcc -c FuncsLab4.c
In file included from FuncsLab4.c:1:0:
Lab4.h:33:1: warning: data definition has no type or storage class [enabled by default]
 Students_Averages(struct students *z);
 ^
FuncsLab4.c: In function 'Students_Averages':
FuncsLab4.c:22:2: warning: incompatible implicit declaration of built-in function 'printf' [enabled by default]
  printf("Average Student GPA: %.2f \n", AveGpa);
  ^
FuncsLab4.c: In function 'Show_Struct_Info':
FuncsLab4.c:66:2: warning: incompatible implicit declaration of built-in function 'printf' [enabled by default]
  printf("\n");
  ^
FuncsLab4.c:69:1: warning: incompatible implicit declaration of built-in function 'printf' [enabled by default]
 printf("\n");
 ^
gcc -o Lab4 Lab4.o FuncsLab4.o
[bis3683@DRACO1 Lab4]$ ls
FuncsLab4.c  FuncsLab4.o  Lab4  Lab4.c  Lab4.h  Lab4.o  Makefile  Test
[bis3683@DRACO1 Lab4]$ ./Lab4

shmget() successful, shm_id = 6488075
Average Student GPA: 3.27
Average Student Age: 20.00
Active Users:
                Andrew Bissell
Today there were 2 logins, Yesterday had 10 logins, Two days ago had 0 logins
[bis3683@DRACO1 Lab4]$ ./Lab4
```

Figure 2: Fresh input of code and make execution with proper output