

Spring 2006: CS 344 – UNIX Operating Systems Fundamentals

Homework – 2

100 points. Individual work only. Due February 22, 2006.

1. Using the *vi* editor type the following text and save it to the file *quizscores* in the directory *hw2* (under *cs344/spring2006*). Note that the individual fields in a row are separated by tabs and each row contains numerical values for {Code, Quiz1, Quiz2, Quiz3, Quiz4}. **[10 points]**

```
2134 90 36 90 77
4532 11 17 81 32
1234 52 70 100 78
9893 34 9 77 78
7874 60 100 56 78
6134 34 80 55 78
```

2. Using the *vi* editor type the following text and save it to the file *homework* in the directory *hw2* (under *cs344/spring2006*). Note that the individual fields in a row are separated by “:” and each row contains values for {Code, HW1, HW2, HW3, HW4}. **[10 points]**

```
2134:45:40:88:55
4532:55:50:99:80
1234:22:70:100:77
9893:89:50:91:60
7874:11:11:0:10
6134:0:89:89:20
```

3. Edit the file *quizscores* using *vi* and add a new column for Quiz 5 scores after the last column. The values to be entered under the Quiz 5 column are: 30, 77, 34, 20, 78, and 34. Note that you must insert tab before inserting the values. **[5 points]**
4. If the scores for HW5 are in a separate file called *homework5*, using one of the UNIX utilities add these values as the last column to the file *homework*. Note that the new values should be entered after inserting a “:”. Write down the command

used and include the contents of the file (*homework*) after the change. The contents of the file homework5 are: [5 points]

23

78

45

68

96

56

5. Write a shell script (using UNIX utilities) to combine the values of the two files (*quizscores* and *homework*) and create a new file *scoresheet* that has the combined fields separated by “:”. *scoresheet* should also be sorted based on the “Code” field. The format for the file *scoresheet* must be as shown below:

```
Code:Quiz1:HW1:Quiz2:HW2:Quiz3:HW3:Quiz4:HW4:Quiz5:HW5
```

Note that you should not create any temporary files and the results of the specified operation should be displayed on the screen as well as written to the file *scoresheet*. The script should print the following: [30 points]

```
No. of entries in file quizscores = #
```

```
No. of entries in file homework = #
```

```
New scoresheet:
```

```
Code:Quiz1:HW1:Quiz2:HW2:Quiz3:HW3:Quiz4:HW4:Quiz5:HW5
```

```
<code and scores in the format shown above>
```

6. For the following operations write down the command used along with the options and the output produced: [20 points (5 points each)]
- Display only the student code and the corresponding scores for Quiz5 for the file *quizscores*
 - Display student records for students who have received 100 on either a quiz or an exam using the file *scoresheet*
 - Replace the delimiter “:” in the file *scoresheet* with a tab

- d. Given the file *scoresheet* create two separate files *file1* and *file2* for quiz scores and homework scores (code field should be present in both files)
7. For the following commands explain what action is performed and write down the output produced: **[20 points (4 points each)]**
- a. `cp ~jonesw/yppasswd ~/cs344/fall2005/`
 - b. `cd ~/cs344/fall2005/hw2; cp ../yppasswd .`
 - c. `cut -d':' -f5 yppasswd | cut -d',' -f1 | sort +1 | tee users`
 - d. `grep -n -i -v cs330 yppasswd`
 - e. `tr ':' '\t' < yppasswd`

NOTES:

1. Submit typed answers for questions 4, 5, 6 and 7 in class on the due date.
2. Create a compressed file with the directory `~/cs344/fall2005/hw2`. Name the compressed file `hw2.tar.gz` and email me the file. The subject of the e-mail should be **CS344-HW2**. Note that you should perform this step after you have finished the homework. [10 points penalty if the subject of the email is not CS344-HW1]