

# Spring 2007: CS 333 – UNIX Operating Systems Fundamentals

## Homework – 2

100 points. Individual work only. Due February 21, 2007.

1. Using the **vi** editor type the following text and save it to the file **quizscores** in the directory **hw2** (under **cs333/spring2007**). 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 **cs333/spring2007**). 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
  - 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 ~hernandf/yppasswd ~/cs333/spring2007/`
- b. `cd ~/cs333/spring2007/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 `~/cs333/spring2007/hw2` (Note that you should compress the directory with its contents, NOT only the contents). Name the compressed file `hw2.tar.gz` and email me the file. The subject of the e-mail should be **CS333-HW2** (Look at the previous homework for the instructions on how to compress files). Note that you should perform this step after you have finished the homework.