

Due: Friday, 8 February 2008 at 2400

The main purpose of these exercises is to get you familiar with both the Pyth language that we'll be working on this semester, and the Subversion software. To complete this homework, you must register a team and set up your repository access as explained on the account administration page.

It's *really important* that these tools work for you. Do *not* just accept error messages as if they were Acts of Nature beyond your control; *whatever it takes, make it work!*

1. Check out a copy of the Subversion repository directories you can access. The command-line version should look like this:

```
svn checkout svn+ssh://cs164-tj@host/{team,login,staff}
```

where *host* is one of the instructional servers (e.g., `nova.cs.berkeley.edu`), *team* is your team's name, and *login* is your personal login. This should create subdirectories in your current directory whose names are *team*, *login*, and *staff*. The first two should contain subdirectories named *tags*. The command *staff* will (eventually) contain various potentially useful files from us.

2. Change (*cd*) to the new working directory *login* and create an empty subdirectory named *hw2*, using the command

```
svn mkdir hw2
```

Create an empty file named *count.py* in this directory, and tell Subversion about it:

```
svn add hw2/count.py
```

All the *svn* commands in the rest of the exercises below are assumed to be executed in this same (*login*) directory.

3. You can list files that the repository has stored in it with the command

```
svn ls svn+ssh://cs164-tj@host/login
```

Why isn't *hw2* there? Didn't you just *svn add* it?

4. Now commit the contents of the *login* directory (this time, I'll let you look up the documentation). Try the commands

```
svn ls svn+ssh://cs164-tj@host/login
svn ls -R svn+ssh://cs164-tj@host/login
```

If you actually committed your files, you now should see *hw2/count.py*.

5. Now remove the `hw2` directory you created with the following sequence:

```
svn remove hw2
```

and commit this change. Create the directory anew, but this time from our template:

```
svn copy ../staff/hw2 .  
# or  
svn copy svn+ssh://cs164-tj@host/staff/hw2 .
```

Again, commit it.

6. Fill in `hw2/count.py` with a Python program that reads text from the standard input, keeping track of the number of times each word in the text appears, and then prints out the ten most frequently occurring words that are at least 4 letters long, one per line, in order of decreasing frequency. A “word” here is a contiguous substring of letters; anything other than a letter delimits a word. Ignore case (and print words in lower case). Try your hand also at `hw2/count.pyth`, which is the same, but uses the Pyth subset. Commit your programs to the repository.

7. (Make sure you successfully committed your solution before doing this exercise!) Now erase the program you just spent all this time writing with

```
rm hw2/count.py
```

and restore it with

```
svn revert hw2/count.py
```

8. Now get remove the whole `hw2` from the repository with

```
svn remove hw2
```

and commit the change. Make sure it’s gone from the repository with the `ls` commands above.

9. Disaster! As a result of the last exercise, you have removed your homework. Now bring it back. First, when you committed the removal of your homework in the previous exercise, `svn` gave you a message such as “Committed revision N .” That means that your homework was still present in revision $N - 1$. Retrieve it with

```
svn copy -r  $N - 1$  svn+ssh://cs164-tj@host/login/hw2 .
```

Make sure it’s all there and commit this change.

10. Turn in assignment `hw2` by making a copy in the `tags` directory:

```
svn copy svn+ssh://cs164-tj@host/login/{hw2,tags/hw2} \  
-m "Handing in hw2"
```

If you now look in your `tags` directory you *won't* see `hw2`. Why not? Execute the command

```
svn update
```

and see what happens.