Sample Solutions

Assignment 2

CSCI 2132 — Winter 2019

Question 1

(a) Both `file1.txt` and `file2.txt` share the same inode, so 1.

(b) `Hello there`

(c) `file1.txt` is a regular file that stores the text "Hello there" while `file2.txt` is a symbolic link that stores the name of `file1.txt`. So these two files are different; there are 2 inodes.

(d) `cat: file2.txt: No such file or directory`

In the case of Question 1b, the files `file1.txt` and `file2.txt` refer to the same inode. After deleting `file1.txt`, `file2.txt` still refers to this inode and `cat file2.txt` happily displays its contents.

Here, `file1.txt` stores the contents "Hello there" while `file2.txt` stores a symbolic link to whatever `file1.txt` is. After deleting `file1.txt`, `file2.txt` still refers to `file1.txt`, a non-existent file at this point. The error message says as much.

(e) Hard links to directories are not allowed.

Question 2

(a) I allow two solutions here. The first one counts only headline tags without any attributes:

```
$ grep '<h[0-9]>' /users/webhome/nzeh/Teaching/2132/index.html | wc -l
26
```

The second one counts all headline tags, with or without attributes:

```
$ grep '<h[0-9][^>]*>' /users/webhome/nzeh/Teaching/2132/index.html | wc -l
30
```

(b) This question contains a typo; hence, I accept two solutions. The first solution does what the question asks you to do, but without using wc because wc has no role in *listing* the files:

```
$ ls -l /usr/bin | egrep '[0-9]{8}'
-rwxr-xr-x.   1 root root    13631256 Dec 19 15:09 bsondump
-rwxr-xr-t.   1 root root    14784560 Nov  2 14:30 emacs-24.3
-rwxr-xr-x.   1 root root    39783432 Dec 19 15:09 mongo
-rwxr-xr-x.   1 root root    62258688 Dec 19 15:09 mongod
-rwxr-xr-x.   1 root root    15944080 Dec 19 15:09 mongodump
-rwxr-xr-x.   1 root root    13975632 Dec 19 15:09 mongoexport
-rwxr-xr-x.   1 root root    13871328 Dec 19 15:09 mongofiles
-rwxr-xr-x.   1 root root    14139536 Dec 19 15:09 mongoimport
-rwxr-xr-x.   1 root root    17054512 Dec 19 15:09 mongorestore
-rwxr-xr-x.   1 root root    35536360 Dec 19 15:09 mongos
-rwxr-xr-x.   1 root root    14208264 Dec 19 15:09 mongostat
-rwxr-xr-x.   1 root root    13818104 Dec 19 15:09 mongotop
-rwxr-xr-x.   1 root root    10705976 Sep 10 07:31 mysql
-rwxr-xr-x.   1 root root    10439552 Sep 10 07:31 mysqlbinlog
-rwxr-xr-x.   1 root root    34986105 Nov 27 01:11 node
-rwxr-xr-x.   1 root root    12019082 Apr 14  2018 ocaml
-rwxr-xr-x.   1 root root    11395129 Apr 14  2018 ocamlc.byte
-rwxr-xr-x.   1 root root    15886368 Apr 14  2018 ocamlopt.byte
```

The second solution does use wc and does what I meant the question to say: *count* the files that are at least 10,000,000 bytes long:

```
$ ls -l /usr/bin | egrep '[0-9]{8}' | wc -l
18
```

(c)
```
$ env | grep '^PATH='
PATH=/users/faculty/nzeh/bin:/local/bin:/bin:/usr/bin:/usr/local/bin:/usr/local
/bin:/usr/bin:/local/sbin:/usr/local/sbin:/usr/sbin:/sbin
```

(d)
```
$ grep -Ei '([aeiou].*){20}' /usr/share/dict/linux.words
pneumonoultramicroscopicsilicovolcanoconiosis
```

(e)
```
$ grep '^[bp].*ing$' /usr/share/dict/linux.words | wc -l
2892
```

Question 3

1. Window 1:

```
$ svn mkdir a2q3
A         a2q3
```

2. Window 1:

```
$ cd a2q3
$ emacs file1.txt
```

(Then edit the file in emacs and exit emacs.)

```
$ svn add file1.txt
A         file1.txt
$ svn commit -m "Steps 1,2"
Adding         .
Adding         file1.txt
Transmitting file data .done
Committing transaction...
```

3. Window 2:

```
$ cd ~/csci2132
$ mkdir tmp
$ cd tmp
$ svn co https://svn.cs.dal.ca/csci2132/nzeh/a2/a2q3
A    a2q3/file1.txt
Checked out revision 1.
```

4. Window 2:

```
$ cd a2q3
$ emacs file2.txt
```

(Then edit the file in emacs and exit emacs.)

```
$ svn add file2.txt
A         file2.txt
$ svn commit -m "Steps 3,4"
Adding         file2.txt
Transmitting file data .done
Committing transaction...
Committed revision 2.
```

5. Window 1:

```
$ emacs file1.txt
```

(Edit the file and exit emacs.)

```
$ svn commit -m "Step 5"
Sending        file1.txt
Transmitting file data .done
Committing transaction...
Committed revision 3.
```

6. Window 2:

```
$ emacs file1.txt
```

(Edit the file and exit emacs.)

```
$ svn update
Updating '.':
G    file1.txt
Updated to revision 3.
$ svn commit -m "Step 6"
Sending        file1.txt
Transmitting file data .done
Committing transaction...
Committed revision 4.
```

7. Window 2:

```
$ svn mv file1.txt file3.txt
A         file3.txt
D         file1.txt
$ svn commit -m "Step 7"
Deleting       file1.txt
Adding         file3.txt
Committing transaction...
Committed revision 5.
```

8. Window 1:

```
$ svn update
Updating '.':
D    file1.txt
A    file3.txt
Updated to revision 5.
```

9. Window 1:

```
$ emacs file2.txt
```

(Edit the file and exit emacs.)

```
$ svn commit -m "Step 9"
Sending        file2.txt
Transmitting file data .done
Committing transaction...
Committed revision 6.
```

10. Window 2:

```
$ emacs file2.txt
```

(Edit the file and exit emacs.)

```
$ svn update
Updating '.':
G    file2.txt
Updated to revision 6.
$ svn commit -m "Step 10"
Sending        file2.txt
Transmitting file data .done
Committing transaction...
Committed revision 7.
$ cat file2.txt
A little elf
climbed into a bush,
to build a shed
that no one could see.
```

(The assignment contains a typo here. It says that the first line should be "A little dwarf", which is incorrect.)

11. Window 1:

```
$ svn update
Updating '.':
U    file2.txt
Updated to revision 7.
```

12. Window 1:

```
$ emacs file2.txt
```

(Edit the file and exit emacs.)

Window 2:

```
$ emacs file2.txt
```

(Edit the file and exit emacs.)

Window 1:

```
$ svn commit -m "Step 12"
Sending        file2.txt
Transmitting file data .done
Committing transaction...
Committed revision 8.
```

13. Window 2:

```
$ svn update
Updating '.':
C    file2.txt
Updated to revision 8.
Summary of conflicts:
  Text conflicts: 1
Merge conflict discovered in file 'file2.txt'.
Select: (p) Postpone, (df) Show diff, (e) Edit file, (m) Merge,
        (r) Mark as resolved, (s) Show all options: p
Summary of conflicts:
  Text conflicts: 1
$ emacs file2.txt
```

(Edit the first line so it looks as required.)

```
$ svn resolved file2.txt
Resolved conflicted state of 'file2.txt'
$ svn commit -m "Step 13"
Sending        file2.txt
Transmitting file data .done
Committing transaction...
Committed revision 9.
```

14. Window 1:

```
$ svn update
Updating '.':
U    file2.txt
Updated to revision 9.
```

15. Window 1:

```
$ svn log | less
--------------------------------------------------------------------------
r9 | nzeh | 2019-02-26 12:20:22 -0400 (Tue, 26 Feb 2019) | 1 line

Step 13
--------------------------------------------------------------------------
...
--------------------------------------------------------------------------
r2 | nzeh | 2019-02-26 11:55:20 -0400 (Tue, 26 Feb 2019) | 1 line

Step 3,4
--------------------------------------------------------------------------
...
$ svn diff -r2:9
Index: file1.txt
================================================================
--- file1.txt (revision 2)
+++ file1.txt (nonexistent)
@@ -1,4 +0,0 @@
-A little dwarf
-jumped into a pond.
-His beard got wet
-and was no longer blonde.
 Index: file2.txt
================================================================
--- file2.txt (revision 2)
+++ file2.txt (revision 9)
@@ -1,4 +1,4 @@
-A little elf
-climbed into a tree,
-to build a house
+A big ogre
+climbed into a bush,
+to build a shed
  that no one could see.
 Index: file3.txt
================================================================
--- file3.txt (nonexistent)
+++ file3.txt (revision 9)
@@ -0,0 +1,4 @@
+A little elf
+jumped into a pond.
+His beard got wet
+and was no longer black.
```