

CS 2413 Test 1

1. [10] Write a sed command which will delete all **blank** lines in the file `in.data` and write the results into the file `out.data`. The command should be entirely on the command line.
2. [15] Write a sed script which will
 - (a) In all lines starting with “*XCOMM” replace the string “*XCOMM” with ‘/*’ characters and end the line with ‘*’.
 - (b) In the lines which started with “*XCOMM” replace “X11R6” with “XFree86”.
 - (c) Do not replace X11R6 in any other lines.
3. [15] An ISP (Internet Service Provider) has a data file which contains information about user’s connect times and bandwidth usage as well as storage usage. There are two types of lines in the file, a connect line which has 5 fields containing the login, start and stop times as well as the bandwidth usage broken into the number of bytes in versus the number of bytes out.

```
<user name> <start time> <stop time> <bytes in> <bytes out>
maynard      1378      2463      12379894    34563
```

and a storage usage line which contains the number of bytes of disk space currently being used by the user which has the following format:

```
*storage* <user name> <bytes of storage>
*storage* maynard      2784643
```

Write an awk script to find the total amount of connect time used by the user `maynard`, the total amount of bandwidth consumed (both in and out) as well as the maximum amount of storage used during this period. The output should look like:

```
maynard
Connect Time = 1085
Bandwidth    = 12314457
Storage      = 2784643
```

4. [15] Write a perl script which will print out the pathnames of all text files which are under any of the directories in the file whose name is given on the command line.

5. [20] Suppose a perl program, `pargs`, is invoked with the command:

```
pargs -xvf file1 file2 file3
```

and suppose `file1` contains “`dir1`” and “`dir2`” while `file2` contains “`dir3`”, “`dir4`” and “`dir5`” and `file3` contains “`dir6`” and “`dir7`”. Each directory name in the files is on a separate line. At the start of the program:

- (a) What is the value of `@ARGV`?
- (b) What is the value of `$ARGV[3]`?
- (c) What is the value of `$#ARGV`?
- (d) What value is used in the condition test:

```
if ( @ARGV ) {
```

- (e) If the following statements are executed first,

```
$a = shift;  
$a = shift;  
$b = <>;
```

- i. What is the value of `$a`?
- ii. What is the value of `$b`?
- iii. What is the value of `$ARGV`?

- (f) On the other hand if the following statements were to be executed first,

```
$a = shift;  
$a = shift;  
@b = <>;  
$c = shift @b;
```

- i. What is the value of `$b[2]`?
- ii. What is the value of `@b`?
- iii. What is the value of `$c`?

6. [15] Write a Perl script, `pgrep`, which will search all files given on the command line for the regular expression given as the first argument on the command line. A sample invocation:

```
pgrep '[mM]aynard' file1 file2 file3
```

7. [15] Write a Perl script, called `pcat`, which will concatenate all files (except last file) on the command line writing the concatenation to last file. A sample invocation:

```
pcat file1 file2 file3 outfile
```