CSC3320 System Level Programming
Practice 2

Instructor: Yuan Long

Operations on grep,sed, awk, sort and find.

(1) Connect to snowball server.

```
$ssh ylong4@snowball.cs.gsu.edu
```

(2) Copy file movie.dat to your home folder.

```
$cp /home/ylong4/public/movie.dat  movie.dat
```

(3) List the content in file movie.dat

```
$cat movie.dat
```

* Format in each row:

Movie   Year   Characteristic

(4) Output the series movies.

```
$grep -n 'Series' movie.dat
```

(5) Count the number of series movies.

```
$grep -n 'Series' movie.dat | wc -l
```

(6) Output the top 20 grossing movies.

```
$grep -n 'Top 20 Gross' movie.dat
```

(7) Output the series movies of the top 20 grossing movies.

```
$grep -n 'Series' movie.dat | grep 'Top 20 Gross'
```

(8) Highlight the year in each row of movie.dat

```
$grep --color '[0-9][0-9][0-9][0-9]' movie.dat
```

* Note: \d in grep ,sed, awk can not represent a digit.

(9) Delete year for each row in movie.dat

```
$sed 's/[0-9][0-9][0-9][0-9]//g' movie.dat
```

(10) List the content in file movie.dat again.

```
$cat movie.dat
```

(11) Output the number of fields in each row.

```
$awk '{print NF}' movie.dat
```

* Note: in default, the separator for fields is whitespace/tab.

(12) Add a colon before year and after year respectively, save the output to file movie2.dat

```
$sed -E 's/([0-9][0-9][0-9][0-9])/:\1:/g' movie.dat > movie2.dat
```

(13) Output the number of fields in each row by defining separator colon in movie2.dat.

```
$ awk -F: '{print NF}' movie2.dat
```

(14) Add a line number at the beginning of each row of movie2.dat.

```
$ grep -n '.*' movie2.dat | sed 's/^/line /g'
```

```
$cat>line.awk
{print "line" NR ":" $0}
Ctrl-D
$awk -F: -f line.awk movie2.dat
```

(15) Output the name and year of series movie "Spider-Man" in movie2.dat.

```
$awk -F: '/Spider-Man/{print $1 $2}' movie2.dat
```

(16) Similar to above task, but add "Released in" between name and year in movie2.dat.

```
$awk -F: '/Spider-Man/{print $1 "Released in " $2}' movie2.dat
```

(17) Show only the "Spider-Man" movies and add "My Favorite" at end of row of series movie "Spider-Man" in movie2.dat.

```
$awk -F: '/Spider-Man/{print $0 "  My Favorite"}' movie2.dat
```

(18) Show all movies but only add "My Favorite" after series movie "Spider-Man" in movie2.dat.

```
$awk -F: '/Spider-Man/{print $0 "  My Favorite"};!/Spider-Man/{print $0}' movie2.dat
```

(19) Use line numbers to finish above task.

```
$grep -n 'Spider-Man' movie2.dat
$awk -F: 'NR<=43&&NR>=40{print $0 "  My Favorite"}; NR>43||
NR<40{print $0}' movie2.dat
```

(20) Adjust the format of fields in movie2.dat and save the formatted file to movie3.dat.

```
$awk -F: '{printf "%45s:%10s:%-40s\n", $1, $2, $3}'
movie2.dat > movie3.dat
```

(21) Sort movie3.dat according to the names of movies.

```
$sort -t: +0 -1 movie3.dat
```

(22) Sort movie3.dat according to the released years.

```
$sort -t: +1 -2 movie3.dat
```

(22) Create a new directory "movie" and copy all .dat files to it.

```
$mkdir movie
$cp  *.dat  movie
```

is a wildcard in shell script and can match any strings.

(23) List all the .dat files in current directory (not searching in subdirectories).

```
$find *.dat
```

(24) List all the .dat files in current directory including subdirectories).

```
$find . -name '*.dat'
```