CMSC 6950

Assignment #1

Command Line and Bash Scripting

Due on Wednesday, May 17, 2017

The purpose of this assignment is to teach you how to write a simple script to find the numbers between 1 and 1000 that are divisible by 7. The script will incorporate several bash commands.

Part of the grade is for the history of all the commands you typed at the command line when you solve this assignment. See next page (item 5)

Instructions:

1. Open a new file called "**userid_assignment1.sh**" with any text editor you choose. We will refer to this file as the script. [For userid, I mean your MUN user id/email .e.g. abc123 and not your student number.]

2. In the script:

   (a) Specify that you want to use "bash" interpreter environment to run.

   (b) Write the proper commands to:

      i. Go to **Desktop**

      ii. Make a directory called "**userid-CMSC6950-A1**"

      iii. Change directory to "**userid-CMSC6950-A1**"

      iv. Remove a file called "**numbers.dat**". Note that this file initially does not exist.

      v. The script will read three user-supplied arguments from the command line. So, write an **if** statement that exits the script if the number of arguments sent by the user is not three.

      vi. Using a "**for**" loop (see scripting.sh in the lectures notes), generate the numbers in the range 1-1000 with step of 2. The range and the step must be defined as inputs or arguments that are sent to the script by the user when you run it. Print out the numbers into a file called "**numbers.dat**" (note that you have to append the output to the file and not overwrite it).

vii. Make a directory called "**DIVIDE-BY-7**"

viii. Go to "**DIVIDE-BY-7**"

ix. Unlink the file "**numbers_link.dat**" with the "**unlink**" command which takes the syntax:

```
unlink <link_file>
```

x. Generate a link file "**numbers_link.dat**" that points to the file "**numbers.dat**". Note that the file "**numbers.dat**" belongs to the parent direrctory.

xi. Remove the file "**divisible_by_7.dat**". Note that the file initially does not exist and this is fine.

xii. Using the **cat** and **while** commands (see scripting.sh in the lecture notes), read in the data points from "**numbers_link.dat**", and print out those that are divisible by 7, appending them to a file called "**divisible_by_7.dat**".
Hint: You can use the mod operator in bash which has the syntax,

```
$(($d%7)) -eq "0"
```

Note that $**d** is the variable representing that data point you read from the file "**numbers_link.dat**"

xiii. Go back to "**userid-CMCS6950-A1**"

xiv. Go back to your "**Desktop**"

3. Save the script and exit the editor. Make sure the script is executable (on Linux and Mac).

4. Run the script.

5. Get the history of all the commands you typed at the command line and send the output to "**userid_history.dat**". Use the command,

```
history >>  userid_history.dat
```

ans make sure "**userid**" is replaced by your user id.

6. Submit your script and your "**userid_history.dat**" files through D2L dropbox