Test script

After untarring these files mark the runTests.sh file as executable.

```
chadd@ralph:~> chmod u+x runTests.sh
```

You can execute this file by:

```
chadd@ralph:~> ./runTests.sh
```

runTests.sh is a shell script file. It contains commands you can type on the command line. These command could be shell builtin commands (such as cd) or executable programs (such as 01ChangeMaker or ls).

Comments in a shell script file start with # and go to the end of the line.

Let's look at what is in runTests.sh

```
# This line invokes the bash shell. It does start with a # but is not
# really a comment.  The #! is the shbang (or shebang or hashbang)
# which notifies Linux to use the following characters (/bin/bash in
# this case) as the shell to use to interpret the rest of the file.

#!/bin/bash


# This line invokes ./01ChangeMaker.  01ChangeMaker must be in the
# current directory as well as test1.in (sample input).
# The < forces 01ChangeMaker to read input from test1.in
# rather than from the keyboard.
# > test1.out.actual forces the output to be written to the new file
# test1.out.actual rather than to the screen.
# You can do a less on test1.in and test1.out.actual to see what those
# files contain.

./01ChangeMaker < test1.in > test1.out.actual


# This line invokes diff to determine if the expected output
# (test.out.expected) matches the actual output (test1.out.actual).
# The differences (if any) are written to the file test1.out.diff using
# the > operator.
#
# If test1.out.diff is file of size zero (ls -l test1.out.diff) then
# the output matches the expected output!
# If test1.out.diff is a size greater than zero, less that file to
# see what the problems are.
#
# The command line options -Bw tells diff to ignore blank lines and
# white space (space, tab) differences.

diff -Bw test1.out.expected test1.out.actual > test1.out.diff
```