CS-172a, Homework Assignment #2

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1 Specification

This is a bash script for grading a directory of multiple-choice homework assignments. The directory should contain a "key" file that lists the solutions, line-by-line.

The working directory should contain the script and the directory of assignments to grade. The directory of assignments should contain a file called "key" and any number of files containing submitted homework assignments.

When this script is run, it generates a subdirectory "graded" in the directory of assignments to grade. This contains graded versions of the assignment.

2 Implementation

```
#!/bin/bash
p=$PWD
dir=$1
echo "dir" is $dir

acount=0
for i in ‘cat $dir/key‘
do
   acount=$((acount+1))
   A[$acount]=$i
   echo A’[’$acount’]’ is $i
done

for i in ‘ls $dir‘
do
   if [ "$i" != "key" ]
   then
      bcount=0
      gradedOut=$dir/graded/$i-Graded
      mkdir $dir/graded &>/dev/null
      touch $gradedOut
      #echo $i
      #cat $dir/$i
      score=0
      for k in ‘cat $dir/$i‘
```

```
      do
 bcount=$((bcount+1))
 if [ "$k" == ${A[$bcount]} ]
 then
    echo $k CORRECT  >>$gradedOut
    score=$((score+1))
 else
    echo $k WRONG >>$gradedOut
 fi
      done
      echo Final grade: $score/$acount >>$gradedOut
   fi
done
```

3 Why this implementation is better

1. It's terser. Some unecessary lines were cut, like "pushd students..."
2. It's unclear how the script was meant to be used.
3. Doesn't output a results.csv. This might be seen as not-a-feature, or worse than the original implementation, but this makes it simpler, and more conformant with the Unix philosophy. This script *just* grades the assignments. Another script could be written to handle the generation of *.csv files. This would make the set of programs follow the rule of composition.

```
#!/bin/bash
p=$PWD
>$p/results.hw$1 #output results to a new file in the current working dir

numq=‘wc -l hw$1/answers |cut -f1 -d" "‘ #store number of questions

#store each line in array
acount=0
for i in ‘cat hw$1/answers‘
do
acount=$((acount+1))
A[$acount]=$i
# echo A’[’ $acount ’]’ is $i
done

for i in ‘ls students‘
do
bcount=0
pushd students/$i &>/dev/null
#pushing a non-directory onto the directory stack seems bad
echo now in $PWD &>/dev/null
if [ -f hw$1 ]
#check for existence of file
```

```
#check to see if file is regular
then
WRONG=""
correct=0
for j in ‘cat hw$1‘ #for each file in directory hw$1
#this line doesnt execute properly
do
bcount=$((bcount+1))
if [ "$j" != ${A[$bcount]} ]
then
WRONG=‘echo $WRONG $j " "‘
else
correct=$((correct+1))
fi
done
s=$(echo "scale=2; $correct / $numq" |bc )
echo $i SCORE $s wrong were $WRONG >>$p/results.hw$1
else s=0
fi
printf "%s,%4.2f\n" $i $s >>$p/scores_hw$1.csv

popd &>/dev/null
done
```