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eg21−isint.sh

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```
#!/bin/bash
#
#  Q1 of Practical Test 1 using shell.
#  Note the use of regular expression and egrep
#  to validate inputs, plus the use of bc to
#  perform floating point arithmetics.  bash
#  only understand integer arithmetics.
#
for i
do
    if echo $i | egrep -q '^[+-]?[0-9]+$'; then
        sum=$(( $sum + $i ))
        count=$(( $count + 1 ))
    else
        badargs="$badargs \"$i\""
    fi
done
if [ -n "$badargs" ]; then
    echo "WARNING: $badargs are not valid integers"
fi
if [ $count -eq 0 ]; then
    echo 0
else
    echo "scale=4; $sum/$count" | bc
fi
```

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eg22−acad.sh

Page

```
#!/bin/bash
DATAFILE=/home/appn/sochr/staff/staffList
while getopts aAptTclLif: opt
do
    case $opt in
    a) job="$job \|a/p\|" ;;
    A) job="$job \|A/P\|" ;;
    p) job="$job \|PROF\|" ;;
    t) job="$job \|TA\|" ;;
    T) job="$job \|ST\|" ;;
    l) job="$job \|L\|" ;;
    L) job="$job \|SL\|" ;;
    c) dept="$dept ^CS" ;;
    i) dept="$dept ^IS" ;;
    f) DATAFILE=$OPTARG ;;
    esac
done
if [ -z "$job" ]; then
    job_re=""
else
    for i in $job; do
        if [ "$job_re" == "" ]; then
            job_re=$i
        else
            job_re="$i|$job_re"
        fi
    done
fi
if [ -z "$dept" ]; then
    dept_re=""
else
    for i in $dept; do
        if [ "$dept_re" == "" ]; then
            dept_re=$i
        else
            dept_re="$i|$dept_re"
        fi
    done
fi
egrep "($dept_re).*($job_re)" $DATAFILE
```

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```
#!/bin/bash
#
# generates a list of staff’s webpage from staffList
#
# Note: could be done much more elegantly with awk.
#
sed −n ’s/^\([^|]*|\)\{3\}\([^|−]*\)|.*$/<a href="http:\/\/www.comp.nus.edu.sg\/~\2">\2<\/a><
br>/p’
```

May 30, 04 18:13 **eg24−include.sh** Page

```
#!/bin/bash
INCLUDEPATH="/usr/include:/usr/local/include:."
IFS=:
while read line
do
    if echo $line | egrep −q ’^[        ]*#include[             ]*"[^"]*"[
*$’ $1; then
        file=$(expr "$line" : ’[        ]*#include[             ]*"\([^"]*\)"[
]*$’)
        found=0
        for i in $INCLUDEPATH; do
            if [ −r $i/$file ]; then
                cat $i/$file
                found=1
                break;
            fi
        done
        [ $found −eq 1 ] || (echo "cannot find include file $file" 1&>2 &
xit 1)
    else
        echo $line
    fi
done
exit 0
```