STAT 243 – Bash Exercises

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2025-09-08

```bash
# Ex1
### Use `which` to find python3 path.


mypython=$(which python3)
echo "mypython=$mypython"

# Ex2
### Combine $USER and hostname

user_machine="$USER@$(hostname)"
echo $user_machine


# Ex3
### Use mkdir -p with brace expansion.

rm -rf temp
mkdir -p temp/proj{1,2,3}/{code,data}
tree temp || find temp -print


# Ex4
### Create a demo file and count lines with wc -l

printf "line1\nline2\nline3\nline4\nline5\n" > demo.txt
wc -l demo.txt


# Ex5
### First three lines with head, only third line with sed.
```

```
head -n 3 demo.txt
sed -n '3p' demo.txt




# Ex6
### Save third line into new file.

sed -n '3p' demo.txt > third_line.txt
cat third_line.txt


# Ex7
### Append fifth line with >>
sed -n '5p' demo.txt >> third_line.txt
nl -ba third_line.txt


# Ex8
### Grep rows containing "Australia"

cat > cpds.csv <<EOF
country,year,value
Australia,2001,10
New Zealand,2001,7
Australia,2002,11
Canada,2001,9
EOF

grep 'Australia' cpds.csv > cpds_australia.csv
cat cpds_australia.csv



# Ex9
### grep -v ',' excludes lines with commas.

grep -v ',' demo.txt
```

```
# Ex10
### Loop to create files with "blah"


for i in 1 2 3; do
  echo "blah" > file${i}.txt
done
ls file*.txt




# Ex11
### Prepend using a temp file

for i in 1 2 3; do
  { echo $i; cat file${i}.txt; } > tmp && mv tmp file${i}.txt
done
cat file1.txt

# Ex12
### Run Python script in background.

bpy() {
  local infile=$1
  local outfile=$2
  nohup $mypython $infile > $outfile 2>&1 &
  echo "Started $infile -> $outfile"
}

printf "a=5\nprint(a)\n" > file.py
bpy file.py file.out
sleep 1
cat file.out



# Ex13
### If no output file is given, append out

bpy() {
  local infile=$1
  local outfile=${2:-${infile}out}
  nohup $mypython $infile > $outfile 2>&1 &
```

```
  echo "Started $infile -> $outfile"
}

rm -f file.pyout
bpy file.py
sleep 1
cat file.pyout


# Ex14
### ps aux then sort by memory column.

ps aux | head -n 1
ps aux | sort -k4,4nr | head -n 5

# Ex15
### Remove "python" part from $mypython

echo "mypython=$mypython"
path_to_py="${mypython%python*}"
echo "path_to_py=$path_to_py"
dirname $mypython
```