Operating System Practicals

Assignment 3

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1.

```bash
#! /bin/bash


if [ $1 ]
then
    i=2
    ans=$1
    while [ $i -le $ans ]
    do
        if [[ $(($ans % $i)) -eq 0 ]]
        then
            echo -ne $i' '

            while [ $(($ans % $i)) -eq 0 ]
            do
                ans=$(( $ans / $i ))
            done
        fi
        i=$(( $i + 1 ))
    done

    if [ $ans -gt 1 ]
    then
        echo -ne $i
    fi
    echo ''
else
    echo 'Help : Enter 1 param whose prime factors need to be found'
    exit
fi
```

```
krhero@hellblazer:/mnt/0FB812900FB81290/BTech/Assignments/3rd_Year/OS/Assignment3$ ./1.sh 25
5
krhero@hellblazer:/mnt/0FB812900FB81290/BTech/Assignments/3rd_Year/OS/Assignment3$ ./1.sh 100
2 5
krhero@hellblazer:/mnt/0FB812900FB81290/BTech/Assignments/3rd_Year/OS/Assignment3$ ./1.sh 12
2 3
krhero@hellblazer:/mnt/0FB812900FB81290/BTech/Assignments/3rd_Year/OS/Assignment3$ ./1.sh 60
2 3 5
krhero@hellblazer:/mnt/0FB812900FB81290/BTech/Assignments/3rd_Year/OS/Assignment3$ ./1.sh
Help : Enter 1 param whose prime factors need to be found
```

2.

```bash
#! /bin/bash

if [[ $1 &&  $1 -gt 0 ]]
then
    i=1

    while [ $(($i * $i)) -le $1 ]
    do
        if [ $(($1 % $i)) -eq 0 ]
        then
            echo -ne $i' '

            if [ $(($1/$i)) -ne $i ]
            then
                echo -ne $(($1/$i))' '
            fi
        fi
        i=$(($i+1))
    done
    echo ''
else
    echo 'Help : Enter 1 Positive Integer param whose factors need to be found'
fi
```

```
krhero@hellblazer:/mnt/0FB812900FB81290/BTech/Assignments/3rd_Year/OS/Assignment3$ ./2.sh 30
1 30 2 15 3 10 5 6
krhero@hellblazer:/mnt/0FB812900FB81290/BTech/Assignments/3rd_Year/OS/Assignment3$ ./2.sh -3
Help : Enter 1 Positive Integer param whose factors need to be found
krhero@hellblazer:/mnt/0FB812900FB81290/BTech/Assignments/3rd_Year/OS/Assignment3$ ./2.sh abc
Help : Enter 1 Positive Integer param whose factors need to be found
krhero@hellblazer:/mnt/0FB812900FB81290/BTech/Assignments/3rd_Year/OS/Assignment3$ ./2.sh
Help : Enter 1 Positive Integer param whose factors need to be found
```

3.

```bash
#! /bin/bash

now=$(date '+%s')
midnight=$(date -d 'today 00:00:00' '+%s')
sec=$(($now - $midnight))

if [[ $sec -gt 72000 || $sec -le 23400 ]] # 8 PM to 6:30 AM
then
    echo 'Good Night!'
elif [[ $sec -gt 23400 && $sec -le 43200 ]] # 6:30 AM to 12 PM
then
    echo 'Good Morning!'
elif [[ $sec -gt 43200 && $sec -le 61200  ]] # 12 PM to 5 PM
then
    echo 'Good Afternoon!'
elif [[ $sec -gt 61200 && $sec -le 72000 ]] # 5 PM to 8 PM
then
    echo 'Good Evening!'
fi
```

```
krhero@hellblazer:/mnt/0FB812900FB81290/BTech/Assignments/3rd_Year/OS/Assignment3$ ./3.sh
Good Afternoon!
```

4.

```bash
#! /bin/bash



if [[ $1 && $2 && $1 -gt 0 ]]
then
    i=0
    while [ $i -lt $1 ]
    do
        echo $2
        i=$(($i+1))
    done
else
    echo 'Help: Enter 1st Param as postive Integer and 2nd Param as a string!'
fi
```

```
krhero@hellblazer:/mnt/0FB812900FB81290/BTech/Assignments/3rd_Year/OS/Assignment3$ ./4.sh -2 krunal
Help: Enter 1st Param as postive Integer and 2nd Param as a string!
krhero@hellblazer:/mnt/0FB812900FB81290/BTech/Assignments/3rd_Year/OS/Assignment3$ ./4.sh something krunal
Help: Enter 1st Param as postive Integer and 2nd Param as a string!
krhero@hellblazer:/mnt/0FB812900FB81290/BTech/Assignments/3rd_Year/OS/Assignment3$ ./4.sh 5 krunal
krunal
krunal
krunal
krunal
krunal
```

5.

```bash
#!/bin/bash

if ! [ $1 ]
then
    echo 'Help: Please enter 1st param as a File Path'
    exit
fi
cnt=0
while read -r line; do
    n=${#line}
    if [ $n -eq 0 ]
    then
        cnt=$(($cnt+1))
    fi
done < $1
echo $cnt

# Shortcut method : grep -cvP '\S' $1
```

```
krhero@hellblazer:/mnt/0FB812900FB81290/BTech/Assignments/3rd_Year/OS/Assignment3$ ./5.sh temp.txt
2
```

6.

```bash
#! /bin/bash

if ! [ $1 ]
then
    echo 'Help: Please enter 1st Param as Path of Directory to be scanned!'
    exit
fi

path=$1

res=$(find $path -type f -exec du -cha -t 1000 {} + | sort -r -h)
lines=$(($(echo "$res" | wc -l) - 1))
echo "$res"
echo 'Total Files: '$lines
```

```
krhero@hellblazer:/mnt/0FB812900FB81290/BTech/Assignments/3rd_Year/OS/Assignment3$ ./6.sh ./
3.5K    total
Total Files: 0
krhero@hellblazer:/mnt/0FB812900FB81290/BTech/Assignments/3rd_Year/OS/Assignment3$ ./6.sh
Help: Please enter 1st Param as Path of Directory to be scanned!
krhero@hellblazer:/mnt/0FB812900FB81290/BTech/Assignments/3rd_Year/OS/Assignment3$ ./6.sh thrtwerwe
find: 'thrtwerwe': No such file or directory

Total Files: 0
krhero@hellblazer:/mnt/0FB812900FB81290/BTech/Assignments/3rd_Year/OS/Assignment3$ ./6.sh ../
990K    total
568K    ../Assignment1/Assignment1_U18CO081_KrunalRank_OS.pdf
392K    ../Assignment2/Assignment2_U18CO081_KrunalRank_OS.pdf
Total Files: 2
```