

# OPERATING SYSTEMS

## Lab Assignment – 2

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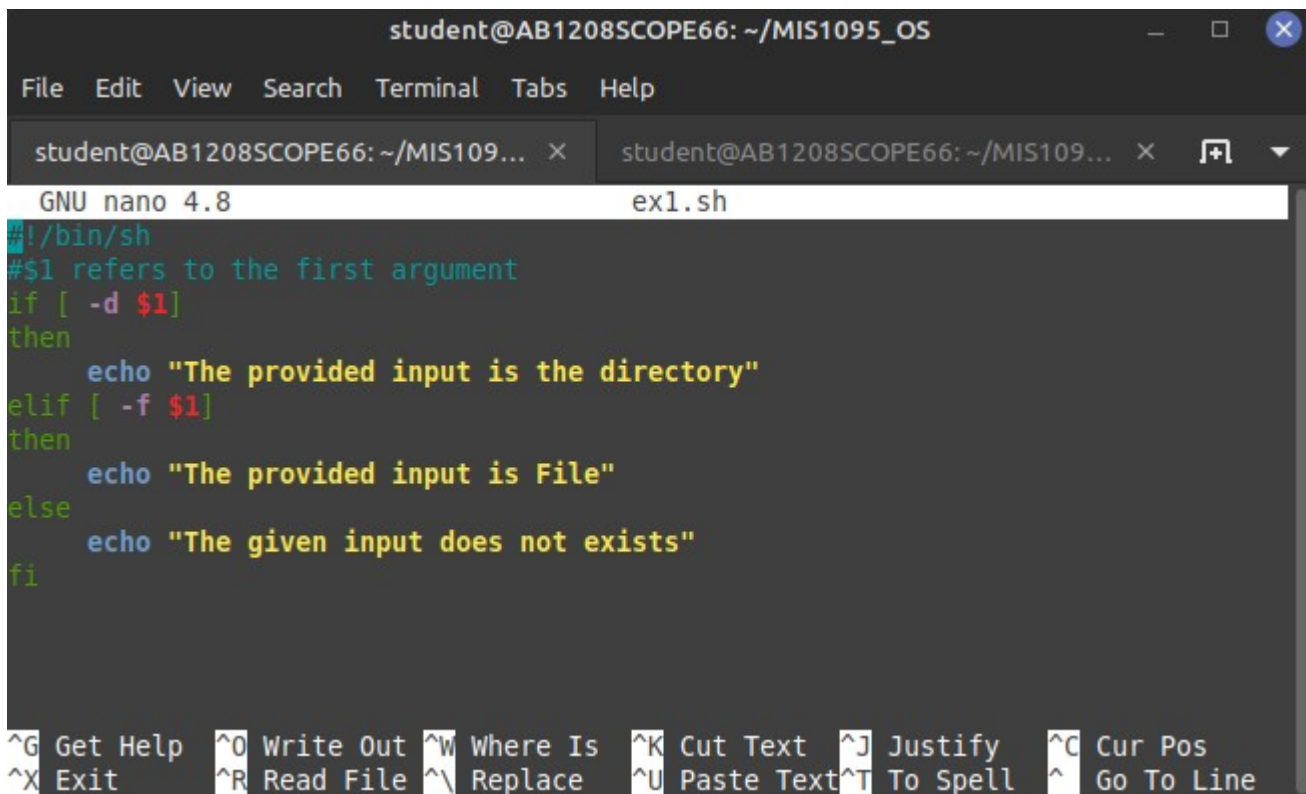
**Reg No:-** 21MIS1095

### SHELL PROGRAMMING:-

#### 1. Using Shell Program, Check whether the given input is file or directory

##### CODE:-

```
#!/bin/sh
#$1 refers to the first argument
if [ -d $1]
then
    echo "The provided input is the directory"
elif [ -f $1]
then
    echo "The provided input is File"
else
    echo "The given input does not exists"
fi
```



```
student@AB1208SCOPE66: ~/MIS1095_OS
File Edit View Search Terminal Tabs Help
student@AB1208SCOPE66: ~/MIS109... x student@AB1208SCOPE66: ~/MIS109... x
GNU nano 4.8 ex1.sh
#!/bin/sh
#$1 refers to the first argument
if [ -d $1]
then
    echo "The provided input is the directory"
elif [ -f $1]
then
    echo "The provided input is File"
else
    echo "The given input does not exists"
fi
^G Get Help ^O Write Out ^W Where Is ^K Cut Text ^J Justify ^C Cur Pos
^X Exit ^R Read File ^\ Replace ^U Paste Text ^T To Spell ^_ Go To Line
```

```
student@AB1208SCOPE66: ~/MIS1095_OS
File Edit View Search Terminal Tabs Help
student@AB1208SCOPE66: ~/MIS109... x student@AB1208SCOPE66: ~/MIS109... x
student@AB1208SCOPE66:~/MIS1095_OS$ ls
a.out      exp22.sh    exp32.sh    exp.sh.save  process1.c
c1.c       exp23.sh    exp33.sh    file.pdf     process.c
c2.c       exp23.sh.save exp34.sh    file.txt     'Untitled Document'
ex1.sh     exp2.sh     exp3.sh     Folder
EXC.odt    exp31.sh    exp.sh      fork.c
student@AB1208SCOPE66:~/MIS1095_OS$ ./ex1.sh
The provided input is the directory
student@AB1208SCOPE66:~/MIS1095_OS$ ./ex1.sh ssss
./ex1.sh: 3: [: missing ]
./ex1.sh: 6: [: missing ]
The given input does not exists
student@AB1208SCOPE66:~/MIS1095_OS$
```

2. Write a shell script program to count the number of files in a directory and sub directories present.

CODE:-

```
#!/bin/sh
if [ -d "$@" ]; then
    echo "The No.of Files are $(find "$@" -type f | wc -l)"
    echo "No.od Directories are $(find "$@" -type d | wc -l)"
else
    echo "[ERROR] Provide the correct directory"
    exit 1
fi
```

```
student@AB1208SCOPE66: ~/MIS1095_OS
File Edit View Search Terminal Tabs Help
student@AB1208SCOPE66: ~/MIS109... x student@AB1208SCOPE66: ~/MIS109... x
GNU nano 4.8 ex2.sh
#!/bin/sh
if [ -d "$@" ]; then
    echo "The No.of Files are $(find "$@" -type f | wc -l)"
    echo "No.od Directories are $(find "$@" -type d | wc -l)"
else
    echo "[ERROR] Provide the correct directory"
    exit 1
fi
[ Wrote 8 lines ]
^G Get Help ^O Write Out ^W Where Is ^K Cut Text ^J Justify ^C Cur Pos
^X Exit ^R Read File ^\ Replace ^U Paste Text ^T To Spell ^_ Go To Line
```

```
student@AB1208SCOPE66: ~/MIS1095_OS
File Edit View Search Terminal Tabs Help
student@AB1208SCOPE66: ~/MIS109... x student@AB1208SCOPE66: ~/MIS109... x [+]
```

a.out	EXC.odt	exp31.sh	exp.sh	fork.c
c1.c	exp22.sh	exp32.sh	exp.sh.save	process1.c
c2.c	exp23.sh	exp33.sh	file.pdf	process.c
ex1.sh	exp23.sh.save	exp34.sh	file.txt	'Untitled Document'
ex2.sh	exp2.sh	exp3.sh	Folder	

```
student@AB1208SCOPE66:~/MIS1095_OS$ ls
student@AB1208SCOPE66:~/MIS1095_OS$ ./ex2.sh
bash: ./ex2.sh: Permission denied
student@AB1208SCOPE66:~/MIS1095_OS$ chmod 777 ex2.sh
student@AB1208SCOPE66:~/MIS1095_OS$ ./ex2.sh
The No.of Files are 24
No.od Directories are 2
student@AB1208SCOPE66:~/MIS1095_OS$
```

- 3) Write a Shell scripting program to read the list of strings from user and use functions to:
- a) reverse the list
  - b) reverse each string in the list.

**CODE:-**

```
#!/bin/bash
a=("Srikanth","Harish","Sadik","Vishnu")
last=${#a[@]}
b=""
i=0
while [[ last -ge $((i+=1)) ]]; do
    printf '%s%s' "$b" "${a[ last-i ]}"
    b=" "
done
echo
i=0
while [ $i -lt ${#a[@]} ]
do
    echo ${a[$i]} | rev
    i='expr $i + 1'
done
```

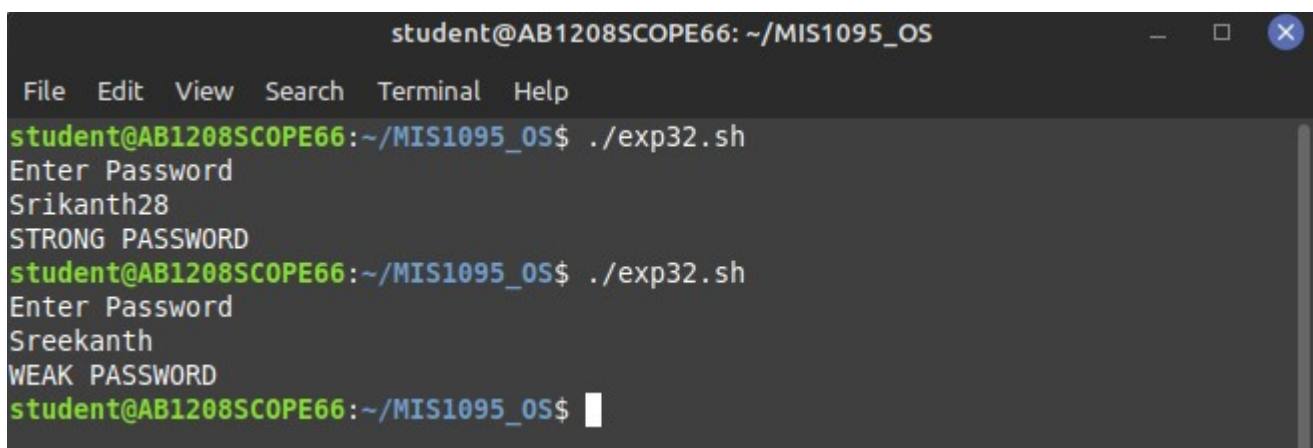
```
student@AB1208SCOPE66: ~/MIS1095_OS
File Edit View Search Terminal Tabs Help
student@AB1208SCOPE66: ~/MIS109... × student@AB1208SCOPE66: ~/MIS109... × [ + ] ▾
GNU nano 4.8 ex3.sh
#!/bin/bash
a=("Srikanth","Harish","Sadik","Vishnu")
last=${#a[@]}
b=""
i=0
while [[ last -ge $((i+1)) ]]; do
    printf '%s%s' "$b" "${a[ last-i ]}"
    b=" "
done
echo
i=0
while [ $i -lt ${#a[@]} ]
do
    echo ${a[$i]} | rev
    i='expr $i + 1'
done
```

```
student@AB1208SCOPE66: ~/MIS109... × student@AB1208SCOPE66: ~/MIS109... ×
student@AB1208SCOPE66:~/MIS1095_OS$ ./ex3.sh
bash: ./ex3.sh: Permission denied
student@AB1208SCOPE66:~/MIS1095_OS$ chmod 777 ex3.sh
student@AB1208SCOPE66:~/MIS1095_OS$ ./ex3.sh
Srikanth,Harish,Sadik,Vishnu
unhsiV,kidaS,hsiraH,htnakirS
```

**4. Write a shell script to get the password as input and validate it as strong, medium or weak password.**

**CODE:-**

```
echo "Enter Password"
read password
len="${#password}"
if test $len -ge 8; then
    echo "$password" | grep -q [0-9]
    if test $? -eq 0; then
        echo "$password" | grep -q [A-Z]
        if test $? -eq 0; then
            echo "$password" | grep -q [a-z]
            if test $? -eq 0; then
                echo "STRONG PASSWORD"
            else
                echo "MEDIUM PASSWORD"
            fi
        else
            echo "MEDIUM PASSWORD"
        fi
    else
        echo "WEAK PASSWORD"
    fi
else
    echo "WEAK PASSWORD"
fi
```



The screenshot shows a terminal window titled "student@AB1208SCOPE66: ~/MIS1095\_OS". The terminal has a menu bar with "File", "Edit", "View", "Search", "Terminal", and "Help". The prompt is "student@AB1208SCOPE66:~/MIS1095\_OS\$". The user enters the command "./exp32.sh". The script prompts "Enter Password" and the user enters "Srikanth28". The script outputs "STRONG PASSWORD". The user enters the command "./exp32.sh" again. The script prompts "Enter Password" and the user enters "Sreekanth". The script outputs "WEAK PASSWORD". The prompt is now "student@AB1208SCOPE66:~/MIS1095\_OS\$" with a cursor.